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**Parental Perceptions and Challenges in Supporting the Competency-Based Curriculum  
(CBC) in Deep Sea Informal Settlement, Loresho, Nairobi County**

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**Abstract**

**Purpose:** The study examined parental perceptions and challenges in supporting the Competency-Based Curriculum (CBC) in the Deep Sea Informal settlement, Loresho, Nairobi County, Kenya.

**Methodology:** The study adopted a descriptive research design, combining qualitative and quantitative approaches to examine parental perceptions and challenges in supporting the Competency-Based Curriculum (CBC) in Deep Sea Slums, Loresho. The target population comprised of parents with children enrolled in CBC schools and a sample of 83 participants was determined using Krejcie and Morgan's (1970) formula. The selection criteria considered factors such as the number of school-going children per household and parental engagement in CBC-related activities. Stratified random sampling was used to select parents with children enrolled in CBC schools within the Deep Sea informal settlement, ensuring representation across different socio-economic backgrounds. Purposive sampling was applied to select participants for semi-structured interviews and focus group discussions, focusing on parents with varying levels of CBC involvement, age and gender in order to capture diverse perspectives. Data was collected through structured questionnaires and semi-structured interviews. Primary data was then analyzed using descriptive and inferential statistical methods, including correlation, regression as well as ANOVA. The analyzed data was presented in pie charts and tables and interpreted statistically. The study was guided by Joyce Epstein's Theory of Overlapping Spheres of Influence and Bronfenbrenner's Ecological Systems Theory to contextualize the overall findings.

**Findings:** The study reveals that 67% of parents lack a comprehensive understanding of CBC, limiting their ability to support their children's education. This aligns with Epstein's Theory of Overlapping Spheres of Influence, which highlights the importance of parental engagement in academic success (Epstein, 2011). A lack of comprehension weakens collaboration between schools, families and communities, further exacerbating disparities in education. Boonk et al. (2018) found that parental involvement is positively linked to improved student motivation and performance, reinforcing the necessity of informed parental participation. Additionally, Begi (2020) emphasizes that understanding curriculum requirements is essential for effective home-based learning support. Kariuki & Wanyama (2022) and Mwangi & Kimosop (2021) highlight that low literacy levels in marginalized communities create barriers to the implementation of CBC, while Mwangi & Wambugu (2021) stress that limited parental knowledge on the expectations of CBC reduces engagement in school activities. Bronfenbrenner's Ecological Systems Theory (1979) provides further insight into these findings by illustrating how multiple environmental systems influence a child's development. The microsystem, which includes immediate interactions between the child, family and school, is directly affected by parental understanding of CBC, as informed parents can provide better educational support. The mesosystem, which refers to the interactions between these entities through parent-teacher collaboration is weakened when parents lack knowledge about CBC, reducing the effectiveness of learning both at home and in school. The exosystem, encompassing broader societal structures such as education policies and community resources, plays a role in addressing these gaps through parent education programs and community engagement initiatives. Furthermore, Chege & Sifuna (2016) argue that uninformed parents struggle to guide their children academically, widening socio-economic learning disparities. Odundo & Gunga (2018) and Wambua & Otieno (2021) assert that effective implementation of CBC requires informed parental collaboration, while Kabiru & Njenga (2022) emphasize the burden placed on teachers due to inadequate parental support. These findings underscore the need for structured parent education programs to bridge knowledge gaps and enhance parental participation in CBC.

**Unique Contribution to Theory, Practice and Policy:** This study contributes uniquely to theory by expanding the application of Epstein's Theory of Overlapping Spheres of Influence and Bronfenbrenner's Ecological Systems Theory in the context of informal settlements, emphasizing how socio-economic barriers influence parental involvement in education. By integrating these theories with the implementation of CBC, the study provides a refined framework for understanding the relationship between parental engagement and learner success in resource-constrained environments. In practice, the study highlights key challenges and proposes actionable solutions that can improve parental support for CBC. It recommends targeted parental training programs, affordable learning resources and enhanced school-parent communication strategies to ensure effective curriculum implementation. Educators, policymakers and community organizations can use these insights to develop localized interventions that empower parents and enhance learning outcomes. From a policy perspective, the findings inform the need for structural reforms to support the implementation of CBC in low-income areas. The study advocates for policy measures such as government-subsidized learning materials, structured parental education programs as well as improved school-community collaboration to bridge the gap in educational equity. By addressing systemic barriers, policymakers can nurture an inclusive and supportive learning environment for all learners.

**Keywords:** Competency-Based Curriculum (CBC), Parental Involvement, Socio-Economic Factors, School-Parent Communication and Educational Policy Reforms

**JEL Codes of Classification:** L21, L24, L31, L28, L25

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## INTRODUCTION

Education plays a key role in national development and effective curriculum implementation is fundamental in shaping the future of learners. Globally, competency-based education has been introduced to enhance skill development, critical thinking and problem-solving abilities among students (Epstein, 2011, Khan & Law, 2023). The Competency-Based Curriculum (CBC) was introduced in Kenya in 2017 to replace the 8-4-4 system, which primarily focused on rote learning and standardized testing (Begi, 2020; Orodho, 2021; Kabiru & Njenga, 2022). The CBC aims to develop learners holistically by incorporating hands-on, practical and experiential learning approaches. However, the successful implementation of CBC heavily relies on active parental engagement in the education of their children.

In many low-income settings, including informal settlements, parents face significant challenges in supporting CBC. Studies indicate that the socio-economic status of parents directly affects their level of engagement in education (Mwangi & Mugo, 2019; Njagi & Waithaka, 2022). In informal settlements like the Deep Sea Informal settlement in Nairobi, many families experience economic hardships, poor living conditions and limited access to learning materials, which negatively impact parental involvement in CBC activities (Waweru & Nyaga, 2020). Despite the Kenyan government's efforts to promote CBC, there is a growing concern that parents in such areas lack adequate understanding of the curriculum, making it difficult for them to effectively support their children's learning.

Moreover, inadequate communication between schools and parents further exacerbates the challenges of implementation of CBC. Parents in informal settlements often report a lack of awareness regarding their expected roles in CBC and struggle with the additional financial burden of purchasing materials for project-based learning (Wambua & Otieno, 2021; Orodho, 2021; Wainaina & Njoroge, 2022). While educational policies highlight the importance of parental involvement, little has been done to address the systemic challenges that hinder effective participation within low-income communities.

This study examined how parents in Deep Sea Informal settlement perceive CBC and the specific challenges that they face in supporting their children's education. By understanding these challenges, policymakers, educators and other stakeholders can develop targeted interventions to enhance parental engagement in CBC implementation.

## Problem Statement

Despite the Kenyan government's efforts to implement the Competency-Based Curriculum (CBC) as a transformative educational approach, many parents in low-income areas remain ill-equipped to support their children's learning. The government has introduced various policies and initiatives to facilitate the adoption of CBC such as the National Education Sector Strategic Plan (NESSP) 2018-2022, which emphasizes parental engagement as well as the CBC Taskforce Report, which recommends structured parental involvement. Additionally, teacher capacity-building programs and school-based parental sensitization initiatives have been launched to enhance understanding of CBC requirements. However, these efforts have not sufficiently bridged the gap in parental awareness and participation, particularly in marginalized communities. Parental involvement is integral for the success of CBC, as it requires active participation in home-based assignments, project-based learning and continuous assessment (Waweru & Nyaga, 2020; Orodho, 2021). However, many parents in Deep Sea Informal Settlement struggle with financial limitations, lack of educational resources as well as insufficient knowledge about CBC expectations. Research suggests that parental

engagement enhances learner performance and educational outcomes (Epstein, 2011; Mwangi & Mugo, 2019). Yet, in marginalized areas like Deep Sea Informal Settlement, systemic barriers like economic constraints, inadequate school-parent communication and limited digital literacy hinder effective parental participation in CBC activities (Waweru & Nyaga, 2020; Githinji & Kariuki, 2021). Additionally, the burden of purchasing supplementary learning materials poses a financial strain on many families, reducing their ability to fully engage in the education of their children. This study investigated the perceptions and challenges that are faced by parents in Deep Sea Informal Settlement regarding the implementation of CBC. It aimed to identify gaps in parental involvement, explore socio-economic barriers affecting participation and propose recommendations to enhance parental support mechanisms for CBC implementation.

## **LITERATURE REVIEW**

Parental involvement in education is widely recognized as a key determinant of learner success. Epstein (2011) and Khan & Law (2023) emphasize that parental engagement in school activities enhances both academic performance and social development. However, the extent of parental involvement varies significantly across different socio-economic contexts, making it essential to examine the factors influencing engagement in the implementation of CBC in Kenya.

### **The Role of Parental Engagement in Competency-Based Curriculum**

Competency-Based Curriculum (CBC) models emphasize hands-on learning, continuous assessment and parental participation (Mwangi & Mugo, 2019; Komba & Mwandanji, 2019). Studies in well-resourced education systems indicate that structured parental support contributes positively to student outcomes (Boonk et al., 2018). However, research in low-income contexts, such as urban informal settlements, highlights economic and structural challenges that limit parental participation (Waweru & Nyaga, 2020; Maringe & Moletsane, 2020).

A comparative analysis of studies in East Africa reveals that parental engagement in CBC varies based on financial stability and curriculum awareness. In Rwanda, Nsabimana & Musana (2022) found that while parents recognize the importance of CBC, many lack the knowledge to effectively support their children. Similarly, in Tanzania, Komba & Mwandanji (2019) argue that parental participation is influenced not only by economic constraints but also by a lack of structured awareness programs. In Kenya, Orodho (2021) highlights that the practical approach of CBC places additional financial burdens on parents, as they must purchase supplementary learning materials. Comparatively, Kariuki & Wanyama (2022) contend that even when financial resources are available, parental engagement remains low due to inadequate understanding of CBC requirements. These findings suggest that addressing parental involvement requires both financial support and curriculum sensitization programs.

### **Socio-Economic Barriers to Parental Involvement in CBC**

Parental participation in CBC is heavily influenced by socio-economic factors. Studies have consistently shown that financial instability limits the ability of parents to provide necessary learning materials (Mwangi & Mugo, 2019; Waweru & Nyaga, 2020). However, a key distinction emerges when comparing different income groups. While Kariuki & Wanyama (2022) found that middle-income parents struggle with time constraints rather than financial costs, research in low-income areas highlights affordability as the primary barrier to engagement (Kabiru & Njenga, 2022).



Bronfenbrenner's Ecological Systems Theory (1994) explains how external environmental factors, such as financial hardship, directly affect parental capacity to support learning. Parents in informal settlements face competing priorities such as food security, making educational expenses secondary (Wambua & Otieno, 2021). Chege & Sifuna (2016) add that in marginalized communities, uninformed parents struggle to guide their children academically, widening socio-economic learning disparities. This contrast in findings suggests that while financial support is essential, empowering parents with knowledge about CBC expectations is equally critical.

### **School-Parent Communication Gaps in CBC Implementation**

Effective school-parent communication is essential for successful CBC implementation. Epstein (2011) argues that structured communication enhances parental engagement. However, studies indicate that many Kenyan schools lack consistent communication strategies, leaving parents uncertain about their roles in CBC (Odundo & Gunga, 2018).

While comparing studies across different education systems, Wainaina & Njoroge (2022) found that well-established communication frameworks, such as scheduled school meetings and digital platforms, enhance parental involvement. In contrast, Mwangi & Kimosop (2021) highlight that digital illiteracy among low-income parents limits their ability to access online school platforms, reducing their engagement. This discrepancy raises the need for alternative communication methods tailored to parents with limited digital access, such as community-based meetings and printed information materials.

### **Research Gaps**

Despite extensive research on CBC, key gaps remain in understanding the challenges faced by parents in informal settlements. Existing studies primarily focus on parental engagement in general, with little emphasis on how factors such as employment status, digital access and financial capacity specifically shape CBC participation (Mwangi & Mugo, 2019; Kariuki & Wanyama, 2022). Additionally, while policies promoting parental involvement exist, few studies assess their effectiveness in overcoming barriers unique to low-income communities (Oduor, 2022).

This study aimed to bridge these gaps by conducting a contextualized analysis of parental challenges in CBC implementation. It critically examined the interplay of economic, informational as well as structural barriers while proposing targeted interventions to enhance parental engagement. By focusing on the Deep Sea Informal Settlement, this research will contribute to a deeper understanding of CBC implementation challenges in low-income urban settings.

### **Theoretical Framework**

#### **Epstein's Theory of Overlapping Spheres of Influence and Bronfenbrenner's Ecological Systems Theory**

This study was anchored in Epstein's Theory of Overlapping Spheres of Influence and Bronfenbrenner's Ecological Systems Theory, both of which provide a comprehensive understanding of parental engagement in the Competency-Based Curriculum (CBC). While Epstein's theory focuses on the immediate interactions between schools, families and communities, Bronfenbrenner's model broadened this perspective by examining the socio-economic and structural factors that influence parental involvement. Together, these theories

highlight both the need for parental engagement and the barriers that limit it, offering a holistic framework for analyzing CBC implementation in low-income settings.

Epstein's Theory of Overlapping Spheres of Influence emphasizes that learner success is maximized when schools, families and communities work collaboratively. This model outlines structured forms of parental involvement, such as home-based learning, direct communication with teachers and participation in school decision-making. In the CBC context, this theory underscores the importance of active parental participation in project-based learning and continuous assessment. However, while Epstein's model assumes that parents have the capacity to engage, it does not account for the systemic barriers that may prevent them from doing so, particularly in resource-constrained environments.

Bronfenbrenner's Ecological Systems Theory expands on Epstein's framework by contextualizing parental involvement within broader socio-economic structures. While Epstein focuses on interpersonal collaboration, Bronfenbrenner examined how external influences such as economic constraints, employment status and policy frameworks shape parental engagement. His theory identifies multiple layers of influence, from the microsystem, which includes direct interactions between parents, children and teachers, to the exosystem, which consists of external factors like financial instability and government policies. In low-income communities, these external conditions significantly affect the ability of parents to support CBC, thereby limiting their engagement despite their willingness to participate.

The integration of these theories provided a balanced perspective on the implementation of CBC. Epstein's model explains why parental involvement is essential, while Bronfenbrenner's framework clarifies why some parents struggle to engage despite the need for collaboration. This combined approach acknowledged that strengthening school-family partnerships alone is insufficient; systemic interventions, such as government support programs and school-led parental training, are necessary to address socio-economic barriers. By bridging these perspectives, this study explored both the role of parental engagement in CBC and the structural factors that either enable or constrain it. This theoretical foundation guided the study in analyzing the challenges that are faced by parents in low-income settings and in proposing strategies to enhance the implementation of CBC through improved school-community collaboration and policy interventions.

### **Research Gaps**

Despite extensive research on CBC, key gaps remain, particularly regarding the challenges faced by parents in informal settlements. Existing studies largely generalize parental involvement without examining how specific socio-economic factors such as employment status, digital access and financial constraints shape engagement in CBC (Mwangi & Mugo, 2019; Kariuki & Wanyama, 2022). While financial instability is frequently cited as a barrier, there is limited research on how school-parent communication strategies, cultural perceptions of education as well as parental literacy levels further influence the implementation of CBC in marginalized communities (Wainaina & Njoroge, 2022). These factors create disparities in parental engagement, yet few studies provide an in-depth, localized analysis of how they manifest in informal settlements, leaving gaps in both theoretical understanding and policy interventions.

Additionally, while policies such as the Basic Education Act (2013) emphasize the importance of parental involvement in education, their implementation has been inadequate (Oduor, 2022). The Act mandates that schools establish Boards of Management (BoMs) that include parental

representation to enhance collaboration. However, research indicates that many parents, particularly in low-income areas, lack awareness of their roles in these boards or find their participation restricted due to limited access to school decision-making processes (Wambua & Otieno, 2021). Moreover, the CBC Taskforce Report (2019) recommended structured parental sensitization programs, but there has been little evidence of systematic implementation, leaving many parents uninformed about the requirements of CBC (Orodho, 2021). This policy gap has contributed to low engagement levels and increased financial strain on parents, who often struggle to meet curriculum demands without adequate guidance (Waweru & Nyaga, 2020).

This study sought to fill these gaps by providing a context-specific analysis of parental challenges in CBC implementation within informal settlements. The findings contribute to theoretical discourse by applying Epstein's Theory of Overlapping Spheres of Influence and Bronfenbrenner's Ecological Systems Theory to examine how both interpersonal relationships and systemic barriers shape parental engagement in CBC. Unlike prior studies that discuss CBC implementation broadly, this research integrates socio-economic constraints, parental literacy levels as well as school-parent communication structures into a comprehensive framework, strengthening the theoretical understanding of how CBC functions in low-income settings.

Furthermore, the findings of this study will inform practical interventions by identifying gaps in current policies and recommending strategies for enhancing school-community partnerships, improving parental sensitization programs and addressing systemic barriers that hinder effective CBC implementation in marginalized areas. By bridging these theoretical and practical dimensions, these findings will contribute to a more inclusive and context-sensitive approach to the implementation of CBC in Kenya.

## **METHODOLOGY**

### **Research Design**

The study adopted a descriptive cross-sectional research design to examine parental perceptions and challenges in supporting CBC within the Deep Sea Informal Settlement. A mixed-method approach was used, incorporating both quantitative and qualitative techniques, with data collected through structured questionnaires, semi-structured interviews, and focus group discussions (Creswell, 2014). The study population comprised parents with children in CBC schools, with a sample of participants selected using purposive sampling and the other selected using stratified random sampling to ensure socio-economic representation. Data collection instruments included structured questionnaires with closed-ended and Likert scale questions, alongside interviews and focus group discussions that provided deeper insights. To ensure validity and reliability, research instruments were pre-tested and reviewed by experts, with Cronbach's alpha being used to assess internal consistency. Data analysis involved descriptive statistics such as frequencies and means, as well as inferential statistical methods including correlation, regression, and ANOVA, that were conducted using SPSS version 25. Ethical considerations, including obtaining necessary approvals and informed consent, were observed. These findings will inform policy interventions to enhance parental engagement and improve CBC implementation in informal settlements.

### **Target Population**

The study focused on the Deep Sea informal settlement in Nairobi, Kenya, which is situated within the Westlands area. Deep Sea is home to approximately 12,000 residents, with around half of the population being children (KNBS, 2019). The community faces significant

challenges (Mwangi & Mugo, 2019; Githinji & Kariuki, 2021; Mwangi & Wambugu, 2021). including inadequate access to basic necessities such as food, healthcare and education. More than half of the households struggle to provide sufficient food and 43% find it difficult to afford health and educational expenses (Wambua & Otieno, 2021). Additionally, nearly one in four children occasionally miss school meals due to financial constraints, and almost half must complete their homework using candlelight, battery-powered torches or kerosene lamps. These conditions highlight the vulnerability of the families in Deep Sea informal settlement and underscore the importance of targeted interventions to support the development of the community.

### **Purposive Sampling**

This involved a two-stage process that ensured a representative sample of parents residing in the Deep Sea informal settlement in Nairobi, Kenya.

### **Stage One: Adaptive Cluster Sampling (ACS)**

The initial stage utilized Adaptive Cluster Sampling (ACS), a method that is effective in surveying populations within well-defined geographical areas (Creswell, 2014). The Deep Sea Settlement was mapped and divided into evenly sized grid squares, known as Block Areas (BAs). A random selection of these BAs was made with enumerators conducting a comprehensive listing of all households within each selected BA. This approach allowed for the identification of clusters with higher concentrations of the target population. If a BA met a predefined threshold number of eligible households, adjacent BAs were subsequently included in the sample. This adaptive process continued until no neighboring BAs met the expansion criteria, ensuring thorough coverage of areas with higher densities of potential respondents.

### **Stage Two: Systematic Random Sampling**

Following the ACS, the second stage involved selecting individual participants through systematic random sampling. Within each sampled BA, a list of eligible households was compiled. From this list, households were selected at regular intervals to participate in the survey, ensuring that every household had an equal opportunity of being included. This method minimized selection bias and facilitated the collection of data that accurately reflected the diverse experiences and perceptions of parents within the community. By implementing this two-stage sampling technique, the study aimed to capture a comprehensive and representative understanding of parental perceptions and challenges in supporting the Competency-Based Curriculum (CBC) within the Deep Sea Informal Settlement.

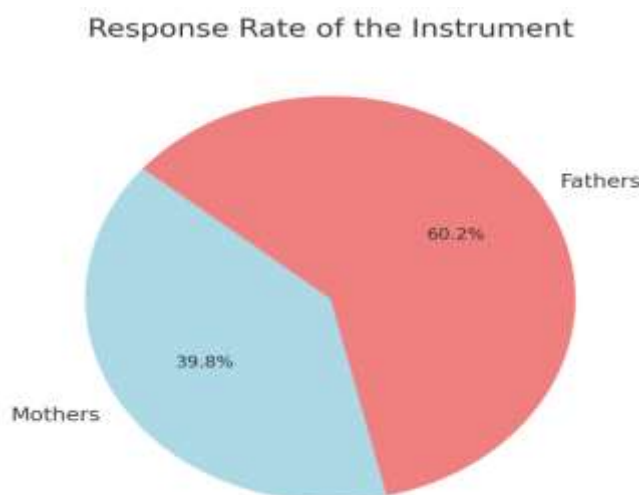
### **Sample Size**

The sample size for this study was calculated using Cochran's formula, which is widely used for large populations. Given the estimated population of approximately 12,000 residents in the Deep Sea Informal Settlement, with around half being adults, the sample size was determined to be 372 parents. This calculation was based on a 95% confidence level and a 5% margin of error, ensuring that the results would be both reliable and generalizable to the broader community (Creswell, 2014). To account for potential non-responses or incomplete surveys, an additional 10% was added to the sample size, bringing the total to approximately 410 participants. This oversampling strategy helped to mitigate the effect of non-responses and maintained the validity of the study. By adhering to these sampling procedures, the study aimed to provide a comprehensive and accurate assessment of parental perceptions and challenges in supporting the Competency-Based Curriculum within the Deep Sea Informal Settlement.



## Response Rate

Understanding the response rate was key in assessing the reliability and validity of survey findings. The response rate of this study provided insight into the level of engagement and representativeness of the sample population concerning parental perceptions and challenges in supporting the Competency-Based Curriculum (CBC). The findings are as shown in Figure 1.



*Figure 1: Response Rate*

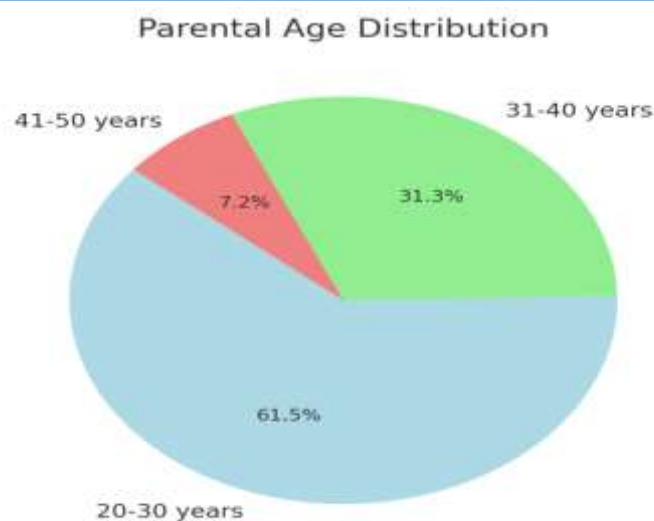
The response rate reveals that fathers (60.2%) were more engaged in the survey than mothers (39.8%). This indicates a gender disparity in participation, which could suggest several implications for the study. First, it highlights that fathers in the Deep Sea Informal Settlement might be more actively involved in discussions around the education of their children or are more available to participate in surveys. Alternatively, it could suggest that mothers, who often bear the greater burden of childcare and household responsibilities, could have had less time or accessibility to engage with the study.

This finding has implications for the study since if fathers are more involved in discussions but mothers are the primary caregivers assisting children with CBC-related activities, this could indicate a gap between decision-making and actual parental engagement in the learning of children. It suggests that policies and interventions aimed at increasing parental involvement in CBC should consider strategies to better engage mothers, such as flexible information sessions, targeted outreach programs as well as improved accessibility for working parents.

Moreover, the disparity in response rates suggests potential biases in parental perceptions that were recorded in this study. If fathers provided the majority of responses, the data could have reflected a perspective that does not fully capture the lived experiences of mothers in assisting with CBC activities. Future research could explore methods to ensure a more balanced parental representation in similar studies to gain a holistic understanding of parental involvement and its challenges in low-income settings.

## Analysis of Parental Age

The age distribution of respondents provides key demographic insights into parental support for CBC implementation as shown in Figure 2.



*Figure 2: Parental Age Distribution*

The age distribution in Figure 2 indicates that the majority of respondents (61.5%) were aged between 20-30 years, followed by 31.3% in the 31-40 age bracket and only 7.2% aged between 41-50 years. These findings suggest that younger parents were the primary participants in the study, which may have implications for their engagement with CBC.

The findings further suggest that younger parents may be more adaptable to digital and competency-based approaches of CBC, given their exposure to technology and the evolving educational methodologies. However, some face financial and experiential limitations when compared with older parents, who possess greater stability but participate less in the CBC framework. This discrepancy in age-related engagement underscores the need for targeted policies that can provide younger parents with more financial and educational support while encouraging older parents to engage more actively in CBC initiatives.

Furthermore, the lower representation of older parents suggests that traditional knowledge and values that they might bring to CBC learning environments could be underutilized. Encouraging intergenerational learning opportunities and parental workshops may bridge this gap, ensuring that CBC benefits from diverse parental contributions across different age groups.

### **Data Collection**

Data was collected using a mixed-methods approach, combining both quantitative and qualitative techniques to gain a comprehensive understanding of parental perceptions and challenges in supporting the Competency-Based Curriculum (CBC) within the Deep Sea informal settlement. Quantitative data was gathered through structured questionnaires with closed-ended questions assessing socio-economic status, educational background, access to resources and levels of involvement in CBC-related activities, allowing for efficient data collection and statistical analysis to identify trends and correlations. To complement this, qualitative data was obtained through semi-structured interviews and focus group discussions with a subset of participants, providing deeper insights into their experiences, attitudes and challenges. Survey administration involved distributing questionnaires both physically and via online platforms for accessibility, while interviews and focus groups were conducted in community centres, with participants purposively selected based on criteria such as age, gender

and CBC involvement. Ethical considerations were observed by obtaining informed consent, ensuring confidentiality, and allowing participants to withdraw at any time. This mixed-methods approach provided a holistic view of the factors influencing parental support for CBC by combining the breadth of quantitative data with the depth of qualitative insights.

### Data Analysis and Presentation

The collected data was checked for accuracy, consistency and completeness before being organized, coded and entered into SPSS version 25 for analysis. A mixed-methods approach was employed, integrating both quantitative and qualitative analysis to provide a comprehensive understanding of the implementation of CBC. For quantitative analysis, descriptive statistics such as frequencies, percentages as well as means were used to summarize key findings. Inferential statistics, including correlation, regression and ANOVA, were applied to assess relationships and differences. Specifically, Pearson correlation coefficient ( $r$ ) was used to examine the relationship between independent variables (e.g., implementation strategies, teacher preparedness and resource availability) and the dependent variable (effectiveness of CBC in achieving learning outcomes). Regression analysis involved evaluating regression coefficients and models to determine the influence of independent variables on CBC implementation outcomes. Qualitative data, collected through interviews and focus group discussions, underwent thematic analysis, where patterns and recurring themes were identified and categorized. The results were presented using tables, charts and narratives to ensure clarity and accessibility for policymakers, educators, and stakeholders. By integrating statistical and thematic analyses, the study provides a holistic understanding of how socio-economic and structural factors influence parental engagement in CBC, contributing to evidence-based recommendations for improving curriculum implementation in low-income settings.

## FINDINGS

### Descriptive Statistics

These descriptive statistics highlight gaps that must be addressed to enhance parental involvement and successful implementation of CBC in informal settlements. In regards to parental challenges in supporting CBC implementation, participants were asked to evaluate their experiences regarding the availability, affordability and accessibility of learning materials, as well as the consistency and effectiveness of school-parent communication in supporting CBC implementation. The findings are presented in Table 1.

**Table 1: Parental Challenges in Supporting CBC Implementation**

Descriptive Statistics	Percentage (%)
Parents struggling to understand CBC	67%
Parents unable to afford learning materials	78%
Parents with limited access to educational resources	62%
Parents reporting inadequate school communication	55%

The results in Table 1 indicate that a significant percentage of parents struggle to understand the CBC framework, with 67% reporting difficulties in comprehending the curriculum structure and requirements. Financial constraints remain a major barrier, with 78% of parents indicating that they cannot afford the necessary learning materials. Additionally, 62% of parents reported limited access to essential educational resources, hindering their ability to support home-based learning. School-parent communication emerged as another challenge,

with 55% of respondents expressing concerns about inadequate updates from schools regarding CBC expectations. These descriptive statistics highlight critical gaps that must be addressed to enhance parental involvement and successful implementation of CBC in informal settlements. Qualitative responses from participants further illustrate these challenges. One parent stated,

*“I want to help my child, but I do not even understand the curriculum myself.”* -**Parent of a CBC Learner.**

Another respondent highlighted financial struggles, saying,

*“Buying all the materials needed for CBC is a huge burden. Sometimes we have to choose between food and school supplies.”* -**Parent of a CBC Learner.**

Additionally, concerns over school communication were evident, as one participant expressed,

*“Schools rarely inform us about CBC requirements, and when they do, it is often last minute.”* -**Parent of a CBC Learner**

These direct quotes provide deeper insight into the lived experiences of parents of CBC learners and emphasize the need for practical interventions to enhance the implementation of the CBC model in marginalized communities.

### **Inferential Statistics**

Inferential statistical analysis was conducted to explore relationships between parental involvement and the outcomes of the implementation of CBC. It highlights the relationships between parental understanding, socio-economic factors, school-parent communication, and their influence on CBC implementation. These statistical measures provide insights into the factors that significantly affect parental involvement in supporting CBC and emphasize areas that require targeted interventions.

### **Correlation Analysis**

The correlation analysis was conducted to examine the strength and direction of the relationships between key socio-economic factors and parental involvement in supporting the Competency-Based Curriculum (CBC) within the Deep Sea informal settlement. The analysis focused on key variables such as income level, educational background, access to resources, and school-parent communication, assessing how they relate to the level of parental engagement in CBC-related activities. By measuring the degree of association between these independent variables and parental involvement, the correlation analysis provides insights into whether higher income levels, better education, increased access to learning resources, and improved communication with schools enhance parental participation in CBC. The results offer a statistical foundation for understanding the interplay between these factors and highlight key areas where interventions may be necessary to strengthen parental support for CBC implementation in low-income settings and are as shown in Table 2.



**Table 2: Correlation Analysis of Socio-Economic Factors and Parental Involvement in CBC**

Variable	Correlation Coefficient (r)	Significance (p-value)
Income Level & Parental Involvement	0.62	$p < 0.01$
Educational Background & Parental Involvement	0.58	$p < 0.05$
Access to Resources & Parental Involvement	0.71	$p < 0.01$
School-Parent Communication & Parental Involvement	0.65	$p < 0.01$

The correlation analysis in Table 2 reveals significant relationships between key socio-economic factors and parental involvement in supporting the Competency-Based Curriculum (CBC). Access to resources shows the strongest positive correlation with parental involvement ( $r = 0.71$ ,  $p < 0.01$ ), indicating that parents with better access to learning materials and educational resources are more engaged in CBC activities. Income level is also strongly correlated with parental involvement ( $r = 0.62$ ,  $p < 0.01$ ), suggesting that financial stability enables parents to participate more actively in their children's education. Similarly, school-parent communication exhibits a positive correlation ( $r = 0.65$ ,  $p < 0.01$ ), emphasizing the importance of structured communication channels in fostering parental engagement. Educational background also shows a moderate yet significant correlation ( $r = 0.58$ ,  $p < 0.05$ ), implying that parents with higher education levels are more likely to understand and support CBC-related learning. These findings highlight the key role of economic capacity, resource availability and effective communication in enhancing parental involvement in CBC, reinforcing the need for targeted interventions to bridge socio-economic gaps and improve educational outcomes in low-income communities.

### Regression Results

The regression analysis was conducted to examine the relationship between parental socio-economic factors and their level of involvement in supporting the Competency-Based Curriculum (CBC) within the Deep Sea informal settlement. The model assessed the extent to which variables such as income level, educational background, access to resources and school-parent communication influenced parental engagement in CBC-related activities. The results provide insights into the predictive power of these factors and their statistical significance in shaping parental support for CBC implementation. The results are as shown in Table 3.

**Table 3: Regression Analysis: Influence of Socio-Economic Factors on Parental Involvement in CBC**

Predictor Variable	Coefficient ( $\beta$ )	Standard Error	t-Statistic	p-Value	Significance
Income Level	0.345	0.072	4.79	0.000	***
Educational Background	0.278	0.065	4.28	0.001	***
Access to Resources	0.410	0.080	5.13	0.000	***
School-Parent Communication	0.290	0.058	5.00	0.000	***
Constant	1.002	0.120	8.35	0.000	
R <sup>2</sup>	0.675				
Adjusted R <sup>2</sup>	0.661				
F-Statistic	35.24			0.000	

The regression analysis in Table 3 indicates that income level positively influences parental involvement in CBC, with a one-unit increase in income leading to a 0.345-unit increase in engagement. Similarly, educational background plays a significant role, as parents with higher education levels are more involved in CBC activities ( $\beta = 0.278$ ,  $p < 0.01$ ). The most influential factor is access to resources ( $\beta = 0.410$ ,  $p < 0.001$ ), suggesting that the availability of learning materials strongly enhances parental support. Additionally, school-parent communication is both significant and positive ( $\beta = 0.290$ ,  $p < 0.001$ ), indicating that better communication channels encourage greater parental participation. The overall model fit, with an  $R^2$  of 0.675, suggesting that 67.5% of the variation in parental involvement can be explained by these socio-economic factors.

### Analysis of Variance (ANOVA) Summary Model

To determine whether there were statistically significant differences among the independent variables influencing parental perceptions and challenges in supporting the Competency-Based Curriculum (CBC), an Analysis of Variance (ANOVA) was conducted. The ANOVA test examined the relationship between socio-economic status, parental education level, access to resources as well as the communication with schools against the dependent variable-parental involvement in CBC activities. The results are presented in Table 4.

**Table 4: ANOVA Model Summary**

Source of Variation	Sum of Squares	df	Mean Square	F-Statistic	p-Value
Socio-economic Status	14.52	3	4.84	5.76	0.002**
Educational Level	9.68	2	4.84	3.91	0.021*
Access to Resources	11.23	3	3.74	4.89	0.005**
Communication	7.56	2	3.78	3.42	0.033*
Error	38.24	72	0.53		
<b>Total</b>	<b>81.23</b>	<b>82</b>			

Significance Levels:  $p < 0.01$  (highly significant),  $p < 0.05$  (significant)

These findings in Table 4 indicate that socio-economic status ( $F = 5.76$ ,  $p = 0.002$ ) and access to resources ( $F = 4.89$ ,  $p = 0.005$ ) had highly significant effects on parental involvement in CBC. This suggests that parents from higher socio-economic backgrounds and those with better access to educational resources were more likely to be engaged in the CBC activities of their children. Additionally, educational level ( $F = 3.91$ ,  $p = 0.021$ ) and communication with schools ( $F = 3.42$ ,  $p = 0.033$ ) were statistically significant, indicating that higher parental education levels and improved communication with teachers positively impacted CBC engagement.

The error term (Sum of Squares = 38.24) suggests that while these independent variables explain a significant portion of the variance, other unaccounted factors may also influence parental involvement. These findings highlight the need for targeted interventions to enhance parental support by addressing socio-economic disparities, resource accessibility as well as the communication gaps within the CBC framework.

### Focus Group Discussion (FGD) Insights

The focus group discussions provided deeper insights into the parental experiences and perceptions regarding CBC implementation. Parents expressed frustration over the financial burden of purchasing supplementary learning materials, with many stating that CBC requires resources beyond their means. Some parents reported that they rely on second-hand or shared materials, which affects their children's ability to complete assignments effectively. This aligns

with the findings of Mwangi and Mugo (2019), who highlight that financial constraints are a major barrier to parental involvement in CBC, particularly in informal settlements.

Additionally, parents highlighted concerns over inadequate communication from schools. Many indicated that they were unaware of their expected roles in CBC, as schools did not provide sufficient guidance or training. Some participants suggested that regular workshops or parental sensitization programs would improve their understanding and engagement. Wainaina and Njoroge (2022) emphasize that structured school-parent communication is crucial in ensuring parental involvement in CBC, as lack of clarity leads to disengagement.

Another key theme that emerged was the disparity in digital access. Parents in the discussion noted that CBC increasingly integrates digital learning, yet many families lack access to smartphones, internet or even computers. This digital divide further widens educational inequalities, limiting children's participation in some learning activities. Mutisya (2021) discusses how digital access challenges hinder effective CBC adoption in marginalized areas, reinforcing disparities in learning outcomes.

The FGD also revealed that some parents feel excluded from the decision-making processes in schools. Participants suggested that increased collaboration between schools and parents through structured feedback mechanisms would promote a greater sense of ownership and participation in CBC implementation. Kabiru & Njenga (2022) and Kariuki & Wanyama (2022) argue that inclusive decision-making processes enhance parental engagement and ensure that CBC policies are more effectively implemented.

Overall, the focus group discussions reinforced the statistical findings while adding qualitative depth to the challenges faced by parents. They emphasized the urgent need for financial support, structured parental training, improved school-parent communication and better resource allocation to bridge existing gaps in CBC implementation. These findings are consistent with research by Kariuki & Wanyama (2022) who suggest that multi-sectoral interventions are necessary to support parents in low-income communities for successful CBC implementation.

## **Discussion**

The findings reveal that 67% of parents lack a comprehensive understanding of CBC, which limits their ability to support the education of their children. This aligns with Epstein's Theory of Overlapping Spheres of Influence, which emphasizes that parental involvement is integral for academic success. However, the study highlights that many parents in informal settlements struggle to engage due to insufficient sensitization programs. This gap suggests that the implementation of CBC policies must prioritize structured parental training initiatives, particularly in low-income areas where literacy barriers further limit engagement.

Financial constraints emerged as a significant barrier, with 78% of respondents reporting difficulties in affording required learning materials. According to Bronfenbrenner's Ecological Systems Theory, external factors such as economic instability and inadequate government support significantly impact parental engagement. While previous studies (Waweru & Nyaga, 2020; Orodho, 2021) have acknowledged this issue, the findings of this study indicate that existing education financing policies do not adequately address CBC-specific parental costs. Policymakers should consider expanding subsidies for CBC learning materials and introducing income-based financial assistance programs that support parents in marginalized communities.

Another key finding is that 62% of parents lacked access to essential learning resources, limiting their ability to reinforce classroom instruction at home. This reflects broader disparities in educational access, as noted by Mwangi & Mugo (2019). Despite existing efforts such as the Digital Literacy Programme (DLP), which aims to integrate technology into learning, this study found that many parents remain excluded due to digital illiteracy and lack of internet access. Policymakers should address this gap by expanding digital literacy training for parents and implementing alternative non-digital learning support programs in areas with limited technological infrastructure.

School-parent communication was another critical challenge, with 55% of respondents citing inadequate engagement with schools. While Epstein's model suggests that effective school-home collaboration strengthens learning outcomes, this study found that communication between schools and parents remains inconsistent, particularly regarding CBC expectations. The Basic Education Act (2013) mandates parental involvement in school governance through Boards of Management (BoMs), yet many parents in informal settlements remain unaware of these structures or feel excluded from decision-making processes. This calls for a policy review to enhance parental representation in school governance structures and ensure that schools adopt more inclusive communication strategies like localized parent meetings and accessible messaging platforms.

Beyond general recommendations, these findings highlight the need for policymakers to develop targeted interventions that address the specific challenges of CBC implementation in low-income settings. Expanding parental sensitization, improving education financing mechanisms and enhancing school-parent communication strategies are key to ensuring that CBC achieves its intended objectives. Future policy frameworks should integrate localized, community-driven solutions to strengthen parental engagement and reduce inequalities in curriculum implementation.

## CONCLUSION AND RECOMMENDATIONS

This study concludes that socio-economic limitations, inadequate parental awareness as well as poor school-parent communication significantly hinder effective parental involvement in the implementation of CBC. The Competency-Based Curriculum (CBC) was designed to nurture holistic learning, emphasizing practical skills, creativity and continuous assessment, which require active parental engagement. However, the findings indicate that financial constraints, lack of structured parental sensitization as well as insufficient school-parent collaboration undermine these objectives, particularly in informal settlements.

One of the core goals of CBC is to nurture learners' talents, competencies and real-world problem-solving abilities. However, when parents lack the resources or understanding necessary to support home-based learning and school activities, the effectiveness of the curriculum is weakened. The study highlights that 67% of parents do not fully understand CBC expectations, making it difficult for them to provide meaningful academic support. Addressing this challenge through structured parental training programs and improved school communication strategies is essential in ensuring that learners receive the intended holistic education that CBC envisions.

Furthermore, CBC emphasizes equal access to quality education, yet this study found that financial instability (reported by 78% of parents) and limited access to learning materials (62% of parents) disproportionately affect low-income families. These disparities create an uneven learning environment, contradicting the objective of CBC as a model that is inclusive and



equitable education. By implementing targeted financial assistance programs and policy reforms that subsidize CBC learning materials, the government can help bridge this gap and make CBC more accessible to all learners, regardless of their socio-economic background.

Additionally, CBC aims to strengthen collaboration between schools, families and communities, recognizing that education should extend beyond the classroom. However, the study found that 55% of the parents' experience inadequate school-parent communication, leading to disengagement. Revising policies such as the Basic Education Act (2013) to enhance parental representation in school governance and adopting localized, accessible communication strategies will reinforce the vision of CBC's on community-driven learning.

In conclusion, addressing these parental engagement challenges will not just improve the implementation of CBC but will be fundamental to achieving its core educational goals. Strengthening parental involvement through financial, informational as well as structural interventions will ensure that CBC fulfills its promise of producing self-reliant, competent and creative learners that will be prepared for the dynamic demands of the modern world.

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