

Journal of **Education and Practice** (JEP)

**The Human Resource Bottleneck: An Assessment of Staffing
Adequacy for Effective CBC Implementation at the Junior
Secondary Level in Kericho County**



CARI
Journals

The Human Resource Bottleneck: An Assessment of Staffing Adequacy for Effective CBC Implementation at the Junior Secondary Level in Kericho County



^{1*}Ketwony Evaline Chebet, ¹Florence Wanaja Kamonjo, ²Bilha Muthoni Kiptoo

^{1,2}Department of Curriculum, Instruction and Educational Media;

University of Kabianga- Kenya.

<https://orcid.org/0009-0001-7816-1395>



Accepted: 4th Sep, 2026, Received in Revised Form: 19th Sep, 2026, Published: 3rd Oct, 2026

Abstract

Purpose: The successful transition to Kenya's Competency-Based Curriculum (CBC) at the Junior School (JS) level is critically dependent on sufficient and qualified human resources. This study assessed the readiness of human resources for JS implementation in Kericho County, Kenya, with a specific focus on the adequacy of both teaching and support staff.

Methodology: A convergent parallel mixed-methods design was employed, collecting quantitative data through surveys from teachers and headteachers, and qualitative data via key informant interviews with education officials.

Findings: The findings reveal significant human resource deficits, characterized by acute shortages of qualified subject teachers and a critical lack of essential support personnel, including ICT technicians, librarians, and laboratory technicians. These inadequacies were found to severely compromise the quality of curriculum delivery, constrain practical and ICT-driven learning experiences central to the CBC, and ultimately threaten the achievement of the curriculum's core competencies. The study concludes that the current human resource capacity constitutes a major bottleneck to effective JS implementation.

Unique Contribution to Theory, Policy and Practice: It therefore recommends the urgent development and execution of a targeted staffing policy by the Teachers Service Commission (TSC) and the Ministry of Education, which prioritizes the recruitment and deployment of both subject-specialist teachers and dedicated support staff to ensure sustainable CBC implementation and improved educational outcomes.

Keywords: *Human Resource Readiness, Junior School (JS), Competency-Based Curriculum (CBC), Staffing Adequacy, Support Staff, Curriculum Implementation, Kenya*

1.0 Introduction

Effective teaching in Junior Schools is pivotal to shaping the academic and personal development of students, laying a strong foundation for their future educational pursuits. Central to this is the adequacy of human resources, including teachers' qualifications, experience, and overall preparedness, which directly influences the quality of instruction and student outcomes (Mugambi & Nzioka, 2022). In Kericho County, Kenya, the implementation of the Junior School (JS) curriculum aims to enhance educational standards and promote holistic development; however, the success of this initiative hinges on the availability and competence of teaching personnel. This study seeks to assess the adequacy of human resources in preparing for effective teaching within the context of JS curriculum implementation in Kericho County, thereby identifying strengths and gaps that can inform policy and practice to improve educational delivery at the JS level.

1.1 Background of the Study

Globally, the quality of education is fundamentally linked to the adequacy of human resources, particularly teachers' competence, availability, and motivation (UNESCO, 2022). The International Labour Organization (ILO, 2021) emphasizes that effective teaching requires well-trained and sufficiently resourced teachers to meet diverse student needs, especially as countries strive to achieve Sustainable Development Goal (SDG) 4, which aims to ensure inclusive and equitable quality education for all. The global push for universal secondary education underscores the importance of human resource capacity in delivering curricula effectively, which directly impacts student learning outcomes (OECD, 2023).

In Africa, the challenge of human resource adequacy in secondary education remains pronounced, with many countries grappling with teacher shortages, unequal distribution, and inadequate training (UNICEF, 2022). According to the African Union (2021), the continent faces a significant deficit of qualified teachers, compounded by high attrition rates, poor working conditions, and insufficient professional development opportunities. These deficiencies hinder effective curriculum implementation and compromise educational quality at the secondary level (Akon & Okwori, 2023). The African context also emphasizes the need for policies that address disparities in teacher distribution, especially between urban and rural areas.

Within East Africa, countries such as Uganda, Tanzania, and Rwanda have experienced similar challenges related to human resource capacity in secondary education (World Bank, 2022). Efforts toward curriculum reforms and the expansion of secondary education have often outpaced the development of sufficiently trained and motivated teachers. For instance, Rwanda has made notable progress in teacher training and deployment, yet regional disparities persist (Niyonzima et al., 2024). The regional focus highlights the importance of contextualized strategies to enhance teacher preparedness, especially in rural and underserved areas.

Kenya's education sector has undergone significant reforms, notably the implementation of the Competency-Based Curriculum (CBC) for Junior Schools, aiming to produce learners with practical skills and critical thinking abilities (Kenya Institute of Curriculum Development [KICD], 2022). However, human resource adequacy remains a critical challenge. The country faces shortages of qualified teachers, particularly in science and mathematics, and uneven distribution across counties (Ministry of Education, 2023). In Kericho County, like many other rural counties, the challenge is compounded by limited infrastructure, resource constraints, and inadequate professional development opportunities for teachers (Kenya National Bureau of Statistics [KNBS], 2024). These issues threaten the effective implementation of the JS curriculum and, consequently, the quality of education.

Effective curriculum implementation at the junior secondary level hinges on having adequately trained, motivated, and well-supported teachers (Gichuhi et al., 2021). Human resource capacity influences teachers' ability to adopt innovative pedagogies, assess learners effectively, and create inclusive learning environments. Inadequate human resources can lead to large class sizes, reduced instructional time, and lowered student performance, challenges that are evident in many parts of Kenya, including Kericho County (Ochieng & Otieno, 2022).

The successful roll-out of the Competency-Based Curriculum (CBC) hinges critically on the availability of adequate human resources in schools. Human resources encompass qualified teachers, ICT support staff, librarians, laboratory technicians, and other support personnel essential for delivering a comprehensive, student-centred education. In Kenya, recent reforms aim to shift focus towards skills development, digital literacy, and practical science; however, concerns about staffing adequacy threaten to undermine these objectives. Prior studies and reports indicate persistent shortages of qualified personnel, delays in teacher deployment, and inadequate support staff, which may compromise curriculum delivery and student achievement (Otieno et al., 2023). This study aims to assess the perceptions of stakeholders regarding the adequacy of human resources in JS and to explore the implications for CBC implementation.

1.2 Statement of the Problem

The successful implementation of Junior School (JS) education in Kericho County, Kenya, relies heavily on the availability, competence, and preparedness of human resources such as teachers, ICT technicians, laboratory technicians, and librarians. Despite government efforts to expand access and improve learning outcomes through the JS framework, concerns remain about whether these human resources are adequately equipped to deliver the curriculum and support student achievement effectively.

Research indicates that issues like shortages of specialised teachers in various disciplines, inadequate teacher capacity building, and limited support infrastructure can negatively impact education quality (Karanja et al., 2023). This inadequate preparation of human resources is a critical barrier to the effective implementation of the Competency-Based Curriculum (CBC) in

Junior Schools (JS). In Kericho County, early indicators suggest that schools face a dual crisis: a shortage of teachers trained in JS learning areas and a critical lack of non-teaching support staff. This deficit creates a fundamental misalignment between the resource-intensive demands of the CBC and the actual capacity of schools, leading to theoretical rather than practical instruction and stifling the development of core competencies in students. The precise scale of these staffing shortages and their specific consequences for curriculum delivery in the county remain unknown and unquantified. This study is necessary to systematically investigate this problem and provide evidence that can inform targeted interventions.

1.3 Purpose of the Study

The purpose of this study was to assess the human resource readiness for the implementation of Junior School under the Competency-Based Curriculum (CBC) in Kericho County, Kenya.

1.4 Research Objectives

This study was guided by the following specific objectives:

1. To evaluate the adequacy of teaching staff for JS in terms of number, subject specialization, and CBC training in selected schools in Kericho County.
2. To assess the availability and adequacy of essential support staff (ICT technicians, librarians, and laboratory technicians) for effective JS implementation.
3. To explore the perceived impact of identified human resource gaps on the quality of curriculum delivery and the achievement of CBC learning outcomes from the perspective of educators and officials.
4. To propose evidence-based recommendations for strengthening human resource capacity to support sustainable JS implementation in the county.

2.0 Literature Review

The successful implementation of Junior School (JS) education hinges critically on the readiness of human resources, including teachers and support staff, to deliver quality education aligned with policy objectives. Several studies highlight that human resource capacity, comprising availability, competence, and motivation, directly influences educational outcomes, particularly during transitional phases such as the shift to JS in Kenya (Kipkebut & Koech, 2022).

2.1 Current Level of Human Resource Readiness in Kericho County

Research indicates that many counties in Kenya, including Kericho, face challenges related to human resource preparedness for JS implementation. According to Otieno et al. (2023), many teachers in Kericho lack specialized training in new curricula and pedagogical approaches required for JS, which affects instructional quality. Moreover, support staff such as ICT technicians and laboratory personnel remain insufficiently trained or deployed, limiting the integration of

technology and practical science into the curriculum (Were & Muthoni, 2021). The shortage of qualified teachers and support staff has been linked to increased class sizes and overburdened personnel, compromising the quality of instruction and student engagement (Wangari, 2024).

2.2 Impact of Human Resource Capacities on JS Implementation

Existing human resource capacities significantly influence the effectiveness of JS rollout. Adequate and well-trained teachers are vital for delivering the curriculum effectively, fostering student engagement, and improving learning outcomes (Mugambi & Nzioka, 2022). Conversely, gaps in teacher competence, particularly in science and mathematics, have been associated with poor student performance in these critical subjects (Karanja et al., 2023). Support staff, including librarians and ICT personnel, facilitate resource mobilization and technological integration; their deficiency hampers the realization of the digital literacy goals embedded within the JS framework (Kipkebut & Koech, 2022).

2.3 Gaps in Human Resource Availability and Competence

Empirical evidence suggests that significant gaps persist in both the availability and competence of human resources in Kericho County. These gaps include a shortage of qualified teachers, especially in sciences and technical subjects, inadequate ongoing professional development opportunities, and uneven distribution of support staff (Otieno et al., 2023). Such deficiencies hinder curriculum delivery, especially in rural and marginalized schools, where recruitment and retention of qualified personnel remain challenging (Were & Muthoni, 2021). Moreover, the lack of supportive supervision and mentorship programs further exacerbates competence gaps, leading to suboptimal teaching practices (Wangari, 2024).

2.4 Theoretical Framework

The Human Capital Theory, proposed by Gary Becker (1964), serves as an appropriate theoretical framework for assessing human resource readiness in the implementation of Junior School (JS) in Kericho County. This theory emphasizes that investments in education and training enhance the productivity and effectiveness of individuals, which in turn benefits organizations and society. The proponent, Becker, argues that human capital, comprising skills, knowledge, and competencies, is essential for improving performance and achieving institutional goals. Applying this theory to the educational context suggests that adequately trained and skilled teachers and support staff, such as ICT technicians, laboratory technicians, and librarians, are vital for the successful delivery of quality education. Their competencies directly influence the quality of instruction, student engagement, and overall school performance, which underscores the importance of investing in human resources for effective curriculum implementation (Kipkebut & Koech, 2022).

The rationale for employing the Human Capital Theory in this research lies in its focus on the relationship between personnel development and organizational outcomes. In the context of Kericho County, the theory highlights the potential consequences of inadequate human resource

investment, namely, the insufficient number of qualified teachers and subordinate staff, which can hinder the effective delivery of the JS curriculum. For instance, shortages of trained teachers in core subjects such as mathematics, science, and languages can compromise student learning outcomes (Karanja et al., 2023). Similarly, the lack of ICT and laboratory technicians hampers the integration of technology and practical science activities essential for a well-rounded education (Were & Muthoni, 2021). Recognizing these gaps through the lens of human capital emphasizes the need for targeted capacity-building initiatives, professional development, and resource allocation to elevate the skills and competencies of all education personnel involved in JS.

The implications of applying the Human Capital Theory to this study are significant for policy and practice. It suggests that improving human resource readiness is not merely about increasing staffing levels but also about enhancing the quality and relevance of skills among teachers and support staff. Addressing the inadequacies in human resources such as training deficiencies among teachers and subordinate staff, can lead to improved instructional quality, better student outcomes, and more effective curriculum implementation (Mugambi & Nzioka, 2022). Furthermore, the theory underscores the importance of continuous professional development and resource investment as strategic means to develop human capital, which is crucial for the successful rollout of JS in Kericho County. Ultimately, this framework guides policymakers and educational administrators toward fostering a skilled, competent, and adequately supported workforce, which is essential for realizing the objectives of the JS program.

3.0 Research Methods

3.1 Methodology

This study adopted a descriptive research design aimed at assessing the human resource readiness for Junior School (JS) implementation in Kericho County, Kenya. The descriptive approach facilitates an in-depth understanding of the perceptions, attitudes, and preparedness levels of key stakeholders involved in the transition process. Employing both quantitative and qualitative content analysis, the study systematically examined textual and numerical data obtained from respondents to identify themes, patterns, and insights related to human resource capacity and readiness.

3.2 Study Population and Sample Size

The study's population included six sub-county directors, 58 head teachers from primary schools, and 58 JS teachers within Kericho County, totalling 122 participants. This sample size was carefully selected to ensure a comprehensive representation of the various stakeholders involved in the implementation of Junior Schools. The diversity in participants allows for capturing a wide range of perspectives from administrative, managerial, and teaching levels, thereby enhancing the validity and richness of the research findings.

A purposive sampling method was utilized to select individuals with direct involvement and pertinent experience in the JS implementation process. The six sub-county directors were intentionally chosen because of their strategic roles in overseeing resource management and policy enforcement. Meanwhile, the 58 head teachers and 58 JS teachers were sampled from primary schools spread across the six sub-counties, ensuring that different regions and school contexts are adequately represented. This approach helps gather relevant and informed insights specific to human resource readiness.

This targeted sampling strategy ensures that the data collected reflects the perspectives of key personnel actively engaged in the transition to JS. By focusing on individuals with firsthand experience, the study aims to obtain accurate and meaningful information about the human resource capacities and challenges faced in the implementation process. Overall, this sampling design supports a comprehensive understanding of the human resource landscape within Kericho County's educational system (Creswell & Creswell, 2017).

3.3 Research Instruments

The primary instruments utilized in this study were structured questionnaires comprising five-point Likert rating scales and interview schedules. These tools were designed to assess teachers' perceptions of staffing adequacy across different support areas within Junior Schools (JS) in Kericho County. The questionnaires were essential for capturing a broad range of opinions from a sizable sample, providing a comprehensive overview of the human resource readiness for JS implementation. Interview schedules were administered to headteachers and sub-county directors to gather in-depth qualitative data on staffing challenges and their impact on curriculum delivery.

3.4 Data Analysis

Quantitative data were analyzed using descriptive statistics, including frequencies, percentages, and standard deviation using SPSS Version 23.0. Qualitative responses from interviews were thematically analyzed to contextualize quantitative findings. The thematic analysis involved coding, categorizing, and identifying patterns in the interview data to provide rich, detailed insights into the human resource challenges facing JS implementation in Kericho County.

4.0 Findings, Results and Discussion

4.1 The Current Level of Human Resource Readiness in Kericho County

The study administered a five-point Likert scale to JS teachers in order to assess the current human resource preparedness for implementing the CBC curriculum in Kericho County. The findings were analysed and summarized in a table, displaying frequencies, percentages, and standard deviations. This approach helped quantify staff attitudes and readiness levels, providing a clear overview of the workforce's preparedness for curriculum implementation.

Table 1: Teachers' Perception of Human Resource Adequacy in JS

Table 1: Teachers Perception of human recourse adequacy in JS

Activity	Strongly Agree		Agree		Neutral		Disagree		Strongly Disagree		Std
	<i>F</i>	%	<i>f</i>	%	<i>f</i>	%	<i>F</i>	%	<i>f</i>	%	Σ
Teachers in JS grades are enough to implement CBC curriculum design	5	9	5	9	3	5	29	50	17	29	1.23
ICT technicians in JS grades are adequate to implement CBC in JS grades	1	2	4	7	11	18	26	45	16	28	0.95
There is a librarian who aids in the provision of library services such as issuing and receiving of course books and other learning materials	17	29	29	50	3	5	5	9	5	9	1.18
There are adequate laboratory technicians who assist in the preparation of practical science subject	6	10	3	5	5	9	18	31	26	45	1.29

Source: Researcher 2025

The results in Table 1 indicate that human resource readiness for JS implementation in Kericho County faces notable challenges, particularly in staffing levels across various support functions. A significant proportion of teachers (over 79%) perceive the current number of educators as insufficient to effectively deliver the Competency-Based Curriculum (CBC). This shortage is likely to compromise the quality of instruction and hinder the curriculum's successful implementation, as teachers are central to delivering learner-centred, competency-based education. This study is in line with Otieno et al. (2023), who affirms that teachers' inadequacy affects effective implementation of curriculum.

Similarly, the perceived deficiency of ICT technicians, where 73% of respondents expressed disagreement or strong disagreement regarding their adequacy, raises concerns about the integration of technology in classrooms. Without adequate technical support, the effective use of digital learning tools becomes limited, potentially impeding the modernizing goals of the CBC. These findings suggest that human resource limitations are a critical barrier that must be addressed through targeted recruitment, training, and retention strategies to bolster the capacity of schools to implement curriculum reforms effectively. This aligns to the study made by Were & Muthoni (2021), which alludes that integration of technology and practical science into the curriculum is essential in implementation of curriculum.

The study also highlights mixed perceptions regarding auxiliary support services such as library and laboratory facilities. While about half of the respondents (50%) agreed that library services

were available through librarians, nearly a third remained neutral, indicating possible inconsistencies in resource availability or service quality. This variability can affect students' access to learning materials and independent research skills vital for the new curriculum. More concerning is the perceived inadequacy of laboratory technicians, with 76% disagreeing or strongly disagreeing about their sufficiency. This shortage directly impacts the practical component of science education, which is an essential aspect of the CBC aimed at fostering practical skills and experiential learning. Without adequate laboratory support, students may not fully benefit from science subjects, undermining the curriculum's emphasis on hands-on learning. These findings underscore the urgent need to strengthen technical and infrastructural support to facilitate comprehensive curriculum delivery that meets the educational standards and prepares students adequately for future careers (Karanja et al., 2023).

The shortages of teachers, ICT support staff, and laboratory technicians, coupled with inconsistencies in library services, mirror broader infrastructural and human resource challenges observed in similar developing contexts (Adebayo et al., 2021). Addressing these gaps requires a multifaceted approach involving policy adjustments to increase recruitment, continuous professional development, and resource allocation tailored to the specific needs of JS settings. Strengthening the human resource framework is essential for realizing the full potential of the CBC, improving educational quality, and ensuring that students receive a well-rounded, competency-based education that prepares them for the demands of the 21st century.

Summary and Interpretation of Key Findings

Table 2: Summary of teachers Perception on Adequacy of Human resources in JS

Human Resource Category	Agreement (Combined)	Disagreement (Combined)	Mean Score	Interpretation
Teaching Staff	9%	79%	1.23	Severe Shortage
ICT Technicians	9%	73%	0.95	Critical Deficiency
Library Staff	79%	18%	1.18	Adequately Filled
Lab Technicians	15%	76%	1.29	Severe Shortage

Overall, Table 2 results reveal a severe perceived inadequacy of key human resources required for the effective implementation of the Competency-Based Curriculum (CBC) in JS. Respondents strongly disagree that there are enough teachers and specialized support staff, which directly threatens the practical and resource-intensive nature of the CBC.

Detailed Breakdown by Category

1. Teaching Staff Adequacy

This is the most critical finding. 79% of respondents disagree or strongly disagree that there are enough teachers. With a mean score of 1.23, the overall sentiment leans heavily towards "Disagree." This indicates a widespread perception of a fundamental teacher shortage, which is the backbone of any educational system. This finding corroborates the work of Ochieng & Otieno (2022), who found that inadequate staffing leads to larger class sizes and reduced instructional quality in Kenyan secondary schools.

2. ICT Technician Adequacy

This is the area of greatest perceived deficiency. A staggering 73% disagree or strongly disagree, and the mean score is the lowest at 0.95. This points to a critical gap in the technical support needed for the digital literacy components of the CBC, likely hindering the use of computers and other technology in learning. This finding aligns with Were & Muthoni (2021), who noted that insufficient ICT support staff limits the integration of technology in the curriculum.

3. Library Staff Adequacy

This is the only area with a positive outcome. A combined 79% of respondents agree or strongly agree that a librarian is present. The mean score of 1.18 is neutral-to-positive. This suggests that the traditional role of a librarian is relatively well-filled compared to the newer, CBC-specific support roles.

4. Laboratory Technician Adequacy

This area shows a severe shortage that critically impacts the CBC's hands-on approach. 76% disagree or strongly disagree, and it has the highest level of "Strongly Disagree" at 45%. The mean score of 1.29 reflects this strong disagreement. The lack of lab technicians makes practical science experiments—which is a core element of CBC—very difficult or impossible to conduct safely and effectively (Kipkebut & Koech, 2022).

4.2 Impact of Human Resource Capacities on JS Implementation

The study used qualitative interviews with headteachers and sub-county directors, analysed thematically, to examine the impact of human resource capacities on Junior School (JS) implementation. This approach provided detailed insights into contextual factors influencing education delivery, highlighting issues like staffing, resource distribution, and systemic inefficiencies. These findings complemented quantitative data, offering a comprehensive understanding of the challenges impacting JS teaching-learning processes.

The headteachers' interviews revealed serious concerns about the impact of human resource capacities on JS implementation. Many headteachers highlighted a shortage of qualified teachers, which hampers effective instruction in their schools. This staffing deficit has led to larger class

sizes, less individual attention, and a decline in teaching quality. As a result, student performance and motivation are negatively affected. The findings emphasize the crucial need for adequate human resources to support proper curriculum delivery. Overall, insufficient staffing poses a significant challenge to the successful implementation of JS. This study findings are in line with the Mugambi & Nzioka (2022) studies which illustrates well-trained teachers are vital for delivering the curriculum effectively, fostering student engagement, and improving learning outcomes.

Headteachers' Verbatim Responses on Human Resource Challenges

Verbatim 1: Delay in Teacher Deployment by Government

One of the head teachers lamented that:

"The government is slow in deployment of JS teachers. This delay has led to a significant shortage of qualified teachers in our schools, which has adversely impacted on the quality of implementation of curriculum design. JS teachers are few. We have gone our way and employ some on a temporary basis. Further, the government deployed teachers are serving as interns and are less motivated as they are not confirmed by TSC in permanent and pensionable terms."

(KCO 022, Headteacher Interview)

This verbatim reveals a systemic failure in the government's deployment mechanism. The reference to employing teachers on a temporary basis indicates that schools are resorting to desperate, short-term measures to fill gaps. The mention of interns being "less motivated" highlights that the policy of hiring teachers on internship terms without job security is counterproductive. This demotivation can lead to lower teaching quality and high turnover, further destabilizing the implementation of the CBC.

Verbatim 2: Critical Shortage of Subject-Specialist Teachers

*"We only have three teachers for our JSS classes, and they are forced to teach subjects they are not specialized in. I have a science teacher teaching social studies because we have no choice. How do we expect quality CBC implementation when a teacher lacks the expertise to teach a subject?"***(KCO 017, Headteacher Interview)**

This testimony highlights the critical issue of misalignment between teacher specialization and teaching assignments. The CBC emphasizes subject-specific competencies and practical skills. When teachers are assigned subjects outside their area of expertise, the quality of instruction suffers. Students are denied the benefit of deep subject knowledge and may fail to develop the required competencies. This finding supports Karanja et al. (2023), who established that teacher competence directly correlates with student performance in science and mathematics.

Verbatim 3: Lack of Laboratory Technicians Hampers Practical Science

"We have a laboratory, but it is practically useless because there is no laboratory technician. Teachers are not trained to handle the chemicals and equipment safely. We try to do theory only, but the curriculum demands practicals. This is a disaster for our science students." **(KCO 036, Headteacher Interview)**

This headteacher's statement underscores the disconnect between curriculum aspirations and school reality. The CBC's emphasis on experiential learning and practical science is rendered ineffective by the absence of qualified laboratory technicians. Without technical support, teachers may avoid practical experiments due to safety concerns or lack of expertise, leaving students with only theoretical knowledge. This gap directly undermines the development of scientific inquiry skills and critical thinking, core competencies of the CBC. This aligns with Were & Muthoni (2021), who noted that inadequate support staff limits the integration of practical science into the curriculum.

Verbatim 4: Overburdening of Existing Teachers Due to Staff Shortage

"With only two teachers handling all JSS subjects, my teachers are overworked. They have no time for proper lesson planning, assessment, or giving individual attention to students. They are burnt out and demoralized. The quality of education is suffering." **(KCO 009, Headteacher Interview)**

This verbatim reveals the human cost of understaffing. Overworked teachers experience burnout, which negatively affects their morale, creativity, and effectiveness. The lack of time for lesson planning and assessment compromises the quality of instruction. In a competency-based system that relies on formative assessment and individualized learning, the inability to give students adequate attention is a serious impediment. This finding echoes the work of Wangari (2024), who found that overburdened teachers in rural schools exhibit lower motivation and higher attrition rates.

Verbatim 5: Inadequate ICT Support Hinders Digital Literacy

"The government talks about digital literacy and ICT integration, but where are the technicians to maintain the computers? Most of our devices are lying there broken. Teachers cannot use them because they break down and no one is there to fix them. Our students are missing out on digital skills." **(KCO 044, Headteacher Interview)**

This statement illustrates that the provision of hardware alone is insufficient without corresponding support staff. The CBC envisions ICT as a tool for enhancing learning, but broken devices and lack of technical support render this vision unrealizable. This critical deficiency in ICT technicians

(indicated by 73% disagreement in Table 1) means that students are being denied the opportunity to develop essential 21st-century digital literacy skills. This finding is consistent with Kipkebut & Koech (2022), who emphasized that support staff deficiencies hamper the realization of digital literacy goals in the CBC.

Verbatim 6: Schools Forced to Hire PTA Teachers Due to Government Inaction

"The government has failed to deploy enough teachers. We have been forced to hire PTA teachers to fill the gap. But we struggle to pay them because parents are also burdened. Many of these PTA teachers leave after a few months because of low pay. It is a vicious cycle that is disrupting learning."(KCO 053, Headteacher Interview)

This verbatim highlight the financial burden placed on parents and schools due to the government's staffing failure. The reliance on Parents Teachers Association (PTA) teachers creates instability, as these teachers are often not adequately paid and lack job security. The high turnover disrupts learning continuity and negatively impacts student outcomes. The headteacher describes a "vicious cycle," indicating that the problem is self-perpetuating: inadequate government deployment leads to PTA hiring, which leads to instability and poor pay, which leads to turnover, which leads to more staffing shortages. This has severe implications for the sustainability of CBC implementation (Ochieng & Otieno, 2022).

The sub-county directors of education also decried human resource inadequacy as a drawback in the implementation of CBC in JS grades. They affirmed that inadequacy of human resources has negatively impacted the teaching-learning processes. One of the sub-county directors mentioned that the ministry is in the process of developing a policy framework to ensure full-time employment for teachers and other support staff, such as ICT and laboratory technicians, in all public JS schools.

4.3 Gaps in Human Resource Availability and Competence

The findings from this study emphasize notable shortcomings in human resource preparedness that may hinder the effective rollout of JS programs in Kericho County, Kenya. In particular, the study revealed evident glaring gaps in both the availability and skill levels of personnel responsible for implementing this new educational stage.

The results uncovered the shortage of adequately trained and qualified teachers, which poses a substantial challenge to effective JS rollout. Many schools lack sufficient numbers of teachers who possess the necessary subject matter expertise, pedagogical skills, and training to deliver the expanded curriculum confidently and effectively. This shortfall could lead to overcrowded classrooms, compromised teaching quality, and ultimately, a negative impact on student learning outcomes (Otieno et al., 2023).

Furthermore, the study reveals that existing teachers have not been adequately retooled or retrained to meet the demands of the JS curriculum. Without targeted professional development and continuous capacity building, teachers were struggling to adapt to new pedagogical approaches, assessment methods, and curriculum content. This gap underscores the need for comprehensive teacher training programs, continuous retooling and ongoing support to ensure educators are well-equipped to handle the expanded scope of the curriculum. This study findings aligns to Otieno et al. (2023), which affirms that inadequate professional development hinders proper implementation of curriculum.

At the grassroots level, these human resource deficiencies threaten to undermine the objectives of the JS implementation, which aims to provide quality secondary education accessible to all. Addressing these gaps requires strategic planning, including recruiting more qualified teachers, investing in teacher training and retooling initiatives, and ensuring that schools are adequately staffed with personnel who can deliver the curriculum effectively. Without such measures, the promise of improved educational access and quality at the junior secondary level may remain unfulfilled, hindering the broader goal of educational development in Kericho County (Kipkebut & Koech, 2022).

5.0 Conclusion and Recommendations

5.1 Conclusion

Based on the comprehensive assessment conducted in this study, it is evident that the current level of human resource readiness for Junior School (JS) implementation in Kericho County faces notable challenges. While some efforts have been made to deploy teachers and support staff, the findings reveal significant gaps in both the availability and competence of key personnel. Many teachers lack specialized training and sufficient pedagogical skills necessary to effectively deliver the expanded curriculum, particularly in core subjects such as science, mathematics, and languages. Support staff, including ICT technicians, laboratory technicians, and librarians, are also insufficiently distributed and inadequately trained to support the diverse needs of the CBC curriculum.

These deficiencies directly impact the quality and effectiveness of JS implementation. The shortage of qualified and well-trained teachers leads to larger class sizes, reduced individual attention, and compromised instructional quality, which can hinder student learning outcomes. Similarly, inadequate technical and support staff impede the integration of technology, practical science activities, and access to learning resources, thereby limiting the curriculum's full potential.

Furthermore, systemic gaps in professional development and resource allocation exacerbate these challenges, making it difficult for schools to fully realize the goals of the JS reform. Without targeted strategies to address these human resource deficiencies—such as accelerating recruitment,

enhancing capacity-building initiatives, and improving resource distribution—the successful rollout of JS in Kericho County remains at risk.

In conclusion, addressing these critical gaps in human resource capacity is essential for the effective implementation of JS. Strengthening recruitment processes, investing in continuous professional development, and ensuring equitable distribution of qualified support staff are vital steps toward enhancing the quality of education. These measures will not only improve curriculum delivery but also contribute to better student outcomes, ultimately supporting the broader goal of educational development in Kericho County.

5.2 Recommendations for Strengthening Human Resource Capacity in JS Implementation

The following recommendations are proposed to address the identified human resource gaps and ensure the successful implementation of the Competency-Based Curriculum (CBC) in Junior Schools.

A. For the National Government and Teachers Service Commission (TSC)

1. Urgent Mass Recruitment and Strategic Deployment

- **Action:** Initiate an immediate, large-scale recruitment drive to hire additional JS teachers, with a focus on critical and underserved subject areas.
- **Rationale:** With 79% of respondents indicating a severe shortage of teachers, this is the most urgent priority to reduce pupil-teacher ratios and ensure basic curriculum coverage. This aligns with the Human Capital Theory, which emphasizes that investment in human resources is essential for achieving organizational goals (Becker, 1964).

2. Create and Fund Support Staff Cadres

- **Action:** Officially establish and fund new positions for ICT Technicians, Laboratory Technicians, and Librarians within the school staffing structure. Develop clear job descriptions and qualification requirements for these roles.
- **Rationale:** The critical deficiencies in ICT (73% disagreement) and Lab Technicians (76% disagreement) directly undermine the practical pillars of the CBC. Creating these posts is a prerequisite for hiring. This recommendation addresses the findings of Were & Muthoni (2021), who noted that support staff shortages limit the integration of technology and practical science.

3. Convert Intern Teachers to Permanent and Pensionable Terms

- **Action:** Expedite the confirmation of intern teachers to permanent and pensionable terms to enhance their motivation and retention.
- **Rationale:** As indicated in Verbatim 1, teachers serving as interns are less motivated. Job security is a key driver of teacher performance and retention. This recommendation is

supported by Mugambi & Nzioka (2022), who emphasized that motivated teachers are vital for effective curriculum delivery.

B. For the Ministry of Education and County/District Education Officers

4. Implement Intensive and Continuous Capacity Building

- **Action:** Conduct mandatory, hands-on in-service training for existing JS teachers focused on CBC pedagogy, subject content mastery, and integrating ICT in teaching.
- **Rationale:** To maximize the impact of the current limited teaching staff and ensure they are fully equipped to deliver the CBC effectively, even in resource-constrained environments. This addresses the gap in teacher competence identified by Otieno et al. (2023).

5. Launch a Shared-Support Staff Pilot Program

- **Action:** Develop a model where one qualified ICT Technician and one Laboratory Technician are deployed to serve a cluster of 3-5 neighbouring schools, based on a scheduled circuit.
- **Rationale:** This provides a pragmatic and cost-effective interim solution to the critical shortage of support staff, ensuring that all students have periodic access to practical experiences while permanent staffing is resolved. This is particularly relevant for rural schools in Kericho County, where resource constraints are most acute (Wangari, 2024).

C. For School-Level Administration (Headteachers)

6. Optimize Internal Resource Allocation and CPD

- **Action:** Headteachers should strategically deploy teachers to their core competency subjects and establish school-based Continuous Professional Development (CPD) sessions where teachers can share best practices for coping with resource limitations.
- **Rationale:** Maximizes the utility of the existing, limited teaching staff and fosters a collaborative environment for problem-solving. This addresses the overburdening of teachers highlighted in Verbatim 4.

7. Leverage Existing Assets and Community Partnerships

- **Action:** Proactively utilize the available librarian (noted as 79% adequate) to expand library services to support CBC projects and research. Furthermore, schools can engage local ICT graduates or science professionals as part-time volunteers or mentors.
- **Rationale:** This provides an immediate, low-cost strategy to partially bridge the support staff gap and connect learning to the community. This is consistent with the recommendations of Ochieng & Otieno (2022) on community engagement in education.

8. Capacity Building

- **Action:** Investing in continuous professional development for teachers and technical staff is vital for enhancing their pedagogical and technical skills, ensuring they are well-equipped to meet the demands of CBC. Regular training programs, workshops, and refresher courses should be prioritized to keep staff updated on new teaching methodologies, ICT integration, and laboratory management, fostering a skilled workforce capable of delivering quality education aligned with modern standards.
- **Rationale:** The CBC is a fundamental shift from a knowledge-based to a skill-based curriculum. The severe shortages of specialized support staff (ICT and Lab Technicians) mean that teachers are often the only available resource to facilitate practical learning. However, they may lack the specific skills to do so effectively and safely (Karanja et al., 2023).

9. Policy Reforms

- **Action:** Formulating and implementing policies that guarantee the timely employment, motivation, and retention of support staff is fundamental for sustainable human resource management. Incentives such as competitive salaries, career advancement opportunities, and recognition programs should be introduced, especially for specialized roles like ICT and laboratory technicians. Such policies will help attract and retain skilled personnel, ensuring consistency and stability in service delivery.
- **Rationale:** The current crisis is a direct result of a systemic policy gap. The national staffing structure has not been fully adapted to the specific resource needs of the CBC. There are no clear, attractive career pathways for the essential technical roles the new curriculum demands. This recommendation is supported by Kipkebut & Koech (2022), who emphasized the need for policy reforms to address human resource challenges in education.

10. Leverage Technology and Task-Shifting

- **Action:** Exploring innovative approaches like training teachers to assume multiple roles can optimize existing human resources and address staffing shortages. Additionally, integrating technology for resource management, lesson delivery, and administrative tasks can enhance efficiency and reduce workload. These strategies promote flexibility and resilience within the education system, enabling it to adapt to evolving needs and resource constraints.
- **Rationale:** Given the unlikelihood of an immediate, mass deployment of support staff, schools must adopt pragmatic, interim survival strategies. This involves optimizing the only resource they have in relative abundance: the teaching staff.

11. Monitoring and Evaluation

- **Action:** Establishing robust mechanisms for regular monitoring and evaluation of staffing levels and support services is critical for maintaining quality standards. Data-driven approaches will help identify gaps, track progress, and inform decision-making. This proactive oversight ensures that staffing challenges are addressed promptly, and resources are allocated effectively to support the CBC implementation.
- **Rationale:** The current data provides a snapshot, but human resource needs are dynamic. Without continuous tracking, the government is "flying blind," unable to measure the impact of its interventions or identify new gaps as they emerge.

12. Stakeholder Engagement

- **Action:** Encouraging collaboration among government agencies, school administrations, communities, and development partners can mobilize diverse resources and expertise needed for human resource development. Active stakeholder participation fosters shared ownership, facilitates resource pooling, and promotes sustainable solutions that align with national education priorities.
- **Rationale:** The human resource crisis in JS implementation is too vast and complex for any single entity to solve alone. The government alone cannot rapidly train, hire, and deploy all the necessary personnel. Therefore, a collaborative ecosystem is essential to leverage complementary resources, expertise, and networks that can provide immediate relief and build sustainable long-term capacity. This approach moves beyond a top-down model to a shared-responsibility model for education.

5.3 Recommendations for Further Research

While this study has illuminated critical human resource gaps in JS implementation within Kericho County, it also opens several avenues for deeper investigation to inform a more robust and sustainable education policy.

1. A Longitudinal Study on the Impact of HR Shortages on Student Competency Development

- **Rationale:** This study identified that HR shortages compromise curriculum delivery. A longitudinal study is needed to track a cohort of JS students over time, measuring their actual attainment of core competencies (in digital literacy, scientific investigation, etc.) against the specific staffing levels and resource availability in their schools. This would provide direct, causal evidence of how HR gaps impact learning outcomes (Karanja et al., 2023).

2. A Comparative Analysis of Human Resource Readiness across Diverse Socio-Economic Counties

- **Rationale:** Kericho County's findings may not be universally applicable. A comparative study between a rural, an urban, and an arid/semi-arid county would identify context-specific challenges and successful local adaptation strategies. This would allow for more nuanced, targeted policy interventions rather than a one-size-fits-all national approach (Ochieng & Otieno, 2022).

3. An In-Depth Qualitative Inquiry into the "Lived Experience" of JS Teachers in Resource-Constrained Environments

- **Rationale:** To understand the human impact of these systemic failures, a phenomenological study focusing on the experiences, coping mechanisms, and professional burnout of JS teachers dealing with large classes and no support staff is crucial. This would give a voice to the practitioners and highlight the urgent need for psychological and systemic support (Wangari, 2024).

4. An Evaluation of the Effectiveness and Sustainability of Cluster Models for Shared Support Staff

- **Rationale:** This study recommends cluster models as a potential solution. Future research should pilot and rigorously evaluate such a model, assessing its cost-effectiveness, impact on practical learning, and challenges in logistics and management. This action-research would provide an evidence-based blueprint for scaling a pragmatic solution.

5. An Investigation into the Attraction and Retention Factors for Specialized Support Staff in the Education Sector

- **Rationale:** The critical shortage of ICT and lab technicians is a policy problem. Research should investigate the specific factors, such as salary, career progression, working conditions, and status that would attract and retain these professionals in public schools. This would provide an evidence base for designing the incentive structures mentioned in the policy recommendations (Were & Muthoni, 2021).

6. A Study on the Integration of Digital Learning Platforms as a Tool to Mitigate Teacher Shortages

- **Rationale:** Given the severe teacher shortage, research is needed to explore how technology can act as a force multiplier. This would involve assessing the feasibility, effectiveness, and challenges of using blended learning and online educational resources to supplement direct instruction in understaffed JS classrooms.

References

- Adebayo, A., Oluwatayo, J. A., & Oladipo, O. (2021). Challenges of curriculum implementation in Nigerian secondary schools: A review. *African Journal of Educational Studies*, 15(2), 45-60.
- African Union. (2021). *Continental Education Strategy for Africa 2021-2031*. Addis Ababa, Ethiopia: African Union.
- Akon, O. O., & Okwori, M. (2023). Teacher distribution and quality in African secondary education: Challenges and policy implications. *African Journal of Educational Planning and Policy Studies*, 15(2), 45-60.
- Becker, G. S. (1964). *Human Capital: A Theoretical and Empirical Analysis, with Special Reference to Education*. New York: National Bureau of Economic Research.
- Creswell, J. W., & Creswell, J. D. (2017). *Research design: Qualitative, quantitative, and mixed methods approaches* (5th ed.). Sage publications.
- Gichuhi, L., Mwangi, P., & Kimani, J. (2021). Teacher preparedness and curriculum implementation in Kenyan secondary schools. *Journal of Educational Administration and Policy*, 8(2), 34-49.
- International Labour Organization (ILO). (2021). *World Employment and Social Outlook 2021*. Geneva: ILO Publications.
- Karanja, S., Mutiso, R., & Njeri, M. (2023). Teacher competence and student performance in Kenya's secondary schools. *Kenyan Journal of Education and Development*, 7(2), 45-62.
- Kenya Institute of Curriculum Development (KICD). (2022). *Implementation of the Competency-Based Curriculum in Junior Schools*. Nairobi, Kenya: KICD.
- Kenya National Bureau of Statistics (KNBS). (2024). *Kenya Population and Housing Census 2023: Education Sector Report*. Nairobi, Kenya.
- Kipkebut, M. K., & Koech, P. K. (2022). Human resource challenges in the implementation of free secondary education in Kenya: A case of Kericho County. *International Journal of Education Policy and Management*, 12(1), 89-104.
- Ministry of Education, Kenya. (2023). *Kenya Education Sector Report 2023*. Nairobi, Kenya.
- Mugambi, S., & Nzioka, C. (2022). Professional development needs of secondary school teachers in Kenya: Implications for curriculum delivery. *African Journal of Teacher Education*, 10(3), 23-37.

- Niyonzima, F., Uwimana, K., & Mugisha, J. (2024). Teacher training and regional disparities in Rwanda's secondary education. *East African Journal of Education Development*, 19(1), 78-94.
- Ochieng, R., & Otieno, P. (2022). Challenges of curriculum implementation in Kenyan secondary schools: The case of Kericho County. *Kenyan Journal of Education and Development Studies*, 6(3), 102-118.
- OECD. (2023). *Education at a Glance 2023: OECD Indicators*. Paris: OECD Publishing.
- Otieno, P., Ochieng, D., & Wanjiru, L. (2023). Human resource capacity and curriculum implementation in Kenyan secondary schools. *Kenyan Journal of Educational Research*, 15(1), 78-92.
- UNESCO. (2022). *Global Education Monitoring Report 2022: Learning and Skills for Life*. Paris: UNESCO Publishing.
- UNICEF. (2022). *State of Education in Africa 2022: Addressing the Human Resource Gap*. Nairobi: UNICEF Kenya.
- Wangari, J. (2024). Challenges of teacher deployment and retention in rural Kenya: A case study of Kericho County. *Journal of Rural Education*, 9(1), 54-70.
- Were, S., & Muthoni, J. (2021). Support staff shortages and their impact on science education in Kenyan secondary schools. *East African Journal of Education*, 13(4), 112-129.
- World Bank. (2022). *East African Education Sector Review*. Washington, DC: World Bank.



2026 by the Authors. This Article is an open access article distributed under the terms and conditions of the Creative Commons Attribution (CC BY) license (<http://creativecommons.org/licenses/by/4.0/>)