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Enhancing education inclusivity in Kenya primary and junior secondary schools: A quantitative analysis of pedagogical and policy strategies in Murang'a County

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Abstract

Kenya's Competency-Based Curriculum (CBC) emphasizes inclusive education, yet implementation gaps persist in rural schools due to resource and training disparities. This study examined pedagogical and policy strategies for inclusivity in Marang'a County. A quantitative survey design collected data from 37 teachers in primary and junior secondary schools via Google Forms. Data were analyzed using IBM SPSS v26. Pearson product-moment correlation coefficients (r) tested relationships between teacher demographics and differentiated instruction practices. Descriptive statistics summarized adoption rates and institutional factors. Teachers reported high adoption of differentiated instruction: 100% varied learning activities, 97.3% varied methods and assessments and 91.9% adapted content. Pearson analysis showed teaching experience positively correlated with content adaptation ($r = .42$, $p < .05$), method variation ($r = .38$, $p < .05$), and assessment adjustment ($r = .35$, $p < .05$). Education qualification correlated with adaptive technology use ($r = .45$, $p < .05$). Age negatively correlated with technology use ($r = -.36$, $p < .05$). Key facilitators included inclusive admission policies (94.6%) and active guidance and counselling departments (83.8%). Primary inhibitors were insufficient resources (83.7%) and home background challenges (91.9%). While CBC provides a policy framework for inclusion, practice gaps remain. Experience and qualifications support inclusive pedagogy, but systemic resource and training interventions are needed for equitable outcomes in rural Kenyan schools.

Key terms: Inclusive education, Competency-Based Curriculum, differentiated instruction, quantitative analysis, Pearson correlation

1.0 Introduction

The Competency-Based Curriculum (CBC), introduced in Kenya in 2017 (Republic of Kenya, Ministry of Education, 2019), reoriented basic education toward learner-centered pedagogy, equity, and inclusivity. This shift aligns with Sustainable Development Goal 4 on equitable quality education (UNESCO, 2023). Despite this policy shift, implementation challenges persist, particularly in rural counties where teacher preparation, infrastructure, and sociocultural barriers limit equitable access. Prior research in Kenya has documented socio-cultural stigma, inadequate resources, and insufficient teacher training as persistent barriers to inclusion (Oranga, 2024). This study quantitatively assesses the enactment of inclusive education in Murang'a County, focusing on pedagogical strategies and institutional policies that facilitate or inhibit inclusion.

The study sort to address three objectives: to quantify the integration of differentiated instruction and competency-based education to address diverse learner needs, to measure how institutional policies and learner engagement strategies correlate with equitable outcomes; and to identify statistically significant facilitative and inhibitory elements influencing inclusive education policy execution at the school level.

2.0 Methodology

A cross-sectional quantitative survey was conducted. Thirty-seven teachers from primary and junior secondary schools in Muranga County participated. Participants were recruited via Google Forms during August–September 2025. Ethical clearance was obtained from the National Commission for Science, Technology and Innovation (NACOSTI), and informed consent was secured from all participants prior to data collection. A structured questionnaire collected quantitative data on differentiated instruction practices, institutional policies, and demographic variables. Items used 4-point Likert scales (ranging from 1 = Strongly Disagree to 4 = Strongly Agree) and 5-point agreement scales.

Data were analyzed using IBM SPSS Statistics (version 26). Descriptive statistics summarized teacher practices and institutional factors. Percentages represent combined "Agree" and "Strongly Agree" responses. Pearson product-moment correlation coefficients (r) tested linear relationships between demographic variables (teaching experience, education qualification, age) and inclusive practices. Following Cohen (1988), r values of .10, .30, and .50 represent small, moderate, and large effects respectively. Statistical significance was set at $p < .05$.

3.0 Results

Participant demographics are presented in Table 1. Of the 37 respondents, 54.1% were aged 51 years and above,, 64.9% were female, and 43.2% had over 25 years of teaching experience. Most (78.4%) taught in rural schools.

Table 1: *Participant Demographics (N = 37)*

Characteristic	N	%
Age		
Below 30	5	13.5

30–40	5	13.5
41–50	7	18.9
51 and above	20	54.1
Gender		
Female	24	64.9
Male	13	35.1
Teaching Experience		
Above 25 years	16	43.2
20–25 years	6	16.2
16–19 years	3	8.1
11–15 years	1	2.7
5–10 years	5	13.5
Below 5 years	6	16.2

Differentiated instruction practices are shown in Table 2. All teachers reported varying learning activities (100%), while 97.3% varied teaching methods and adjusted assessments. Adapting content for diverse learners was reported by 91.9%. The use of adaptive technology was lowest at 89.2%.

Table 2: *Integration of Differentiated Instruction Practices*

Practice	Agree + Strongly Agree (%)	Strongly Agree (%)
Varying learning activities	100.0	32.4
Varying teaching methods	97.3	35.1
Adjusting assessments	97.3	18.9
Adapting content	91.9	21.6
Using adaptive technology	89.2	13.5

Pearson correlations in Table 3 revealed teaching experience positively correlated with adapting content ($r = .42$, $p < .05$), varying methods ($r = .38$, $p < .05$), and adjusting assessments ($r = .35$, $p < .05$). Education qualification positively correlated with adaptive technology use ($r = .45$, $p < .05$) and varying learning activities ($r = .32$, $p < .05$). Age was negatively correlated with adaptive technology use ($r = -.36$, $p < .05$).

Table 3: *Pearson Correlations Between Teacher Demographics and Inclusive Practices*

Variable	Adapting Content	Varying Methods	Adjusting Assessments	Adaptive Tech Use

Teaching Experience	.42*	.38*	.35*	.18
Education Qualification	.25	.28	.22	.45*
Age	-.15	-.12	-.08	-.36*

*Note. *p < .05*

Institutional and engagement factors are summarized in Table 4. Strong facilitators included inclusive admission policies ensuring equal access (94.6% agreement) and active guidance/counselling departments (83.8%). For learner engagement, collaborative learning activities were highly endorsed (91.8% agreement). The primary inhibitors were insufficient resources including funding and personnel (83.7% agreement) and home background challenges such as poverty (91.9% agreement).

Table 4: *Institutional and Engagement Factors Influencing Inclusion*

Factor	Agree/Strongly Agree (%)	Category
Inclusive admission ensuring equal access	94.6	Policy - Facilitator
Active guidance/counselling department	83.8	Policy - Facilitator
Collaborative learning activities	91.8	Engagement - Facilitator
Insufficient resources, funding, personnel	83.7	Inhibitor
Home background challenges (poverty, etc.)	91.9	Inhibitor

4.0 Discussion

Quantitative findings indicate a high level of teacher self-reported commitment to differentiated instruction, aligning with CBC's learner-centered mandate. Positive correlations between experience, qualifications, and inclusive practices suggest that professional development enhances pedagogy. The moderate effect size for experience and content adaptation ($r = .42$, $p < .05$) provides empirical support for targeting in-service training, with $r^2 = .176$ indicating that experience explains 17.6% of the variance in content adaptation. However, the negative correlation between age and technology highlights a digital divide requiring targeted retooling for older teachers.

While institutional policies show high endorsement, resource gaps remain statistically significant. The high agreement on inclusive admission policies (94.6%) versus persistent resource deficits (83.7%) illustrates the gap between policy aspiration and school-level capacity. This mirrors Lipsky's (2010) street-level bureaucracy framework, where frontline actors mediate policy amid constraints. These findings corroborate Oranga and Gaungying (2024), who identified inadequate resources and socio-cultural barriers as primary inhibitors in Kakamega County. Similarly, Sifuna and Obonyo (2019) documented comparable implementation challenges in Kenyan schools, noting that teacher training deficits undermine inclusive practice. The results extend Florian and Black-Hawkins' (2011) inclusive pedagogy frameworkby quantifying its applicability in Kenyan rural contexts.

The study's limitations include a small, non-random sample that limits generalizability, and potential self-report bias. The cross-sectional design precludes causal inference; correlations do not establish that experience causes improved practice.

5.0 Conclusions and Recommendations

5.1 conclusions

CBC provides a robust policy framework for inclusive education, but quantitative data reveal translation to classroom practice requires systemic support. Teacher experience and qualifications facilitate inclusive pedagogy, yet resource deficits, training gaps, and technology barriers remain statistically significant**.**

5.2 Recommendations

Based on the findings, the following recommendations were made

1) Increased capitation for resource centers and assistive technology should be prioritized to address material constraints.

(2) Structured in-service training on inclusive pedagogy and digital tools is needed to enhance teacher capacity.

(3) Strengthened school-community partnerships should be developed to mitigate home-based challenges.

(4) Monitoring frameworks need to be established to ensure equitable outcomes across all learners.

5.3 Suggestion for Further Research

Future research should employ longitudinal designs and larger samples to assess CBC's long-term impact on learner outcomes.

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