

Head Teacher Instructional Leadership and Competency-Based Curriculum Implementation Outcomes at School Level: A Cross-Sectional Statistical Study

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Abstract.

This study investigated the relationship between head teacher instructional leadership and Competency-Based Curriculum (CBC) implementation outcomes at the school level in Uganda. A cross-sectional quantitative design was adopted, drawing a sample of 260 schools through stratified random sampling across government and private, and rural and urban strata. Head teacher instructional leadership was measured across three dimensions adapted from the Principal Instructional Management Rating Scale (PIMRS) defining the school mission, managing the instructional program, and promoting a positive school learning climate while CBC implementation outcomes were captured through a composite index reflecting curriculum delivery fidelity, continuous assessment practice, resource utilization, and integration of generic skills. Data were analyzed using univariate, bivariate, and multivariate statistical techniques, complemented by sensitivity analyses. The mean CBC implementation outcome score was 56.3 (SD = 10.4) out of 100, and the mean head teacher instructional leadership composite score was 58.1 (SD = 10.5). All three instructional leadership dimensions were significantly and positively correlated with CBC implementation outcomes (r ranging from 0.43 to 0.51, $p < 0.001$), and outcomes differed significantly by school type and location. In the multivariate ordinary least squares regression, all three instructional leadership dimensions, the instructional resource index, in-service training hours, school type, and location remained statistically significant independent predictors, with the full model explaining 47.7% of the variance in CBC implementation outcomes ($R^2 = 0.477$, $F = 27.58$, $p < 0.001$). Sensitivity analyses — including a reduced composite-score model, a logistic regression on a binarised high-fidelity implementation outcome, and non-parametric bootstrap resampling with 1,000 replications — confirmed the stability and robustness of the observed leadership-outcome relationship. The findings affirm that head teacher instructional leadership is a central, modifiable driver of CBC implementation success at the school level, and the study concludes with recommendations for targeted leadership capacity building, equitable resource investment, and routine school-level monitoring of implementation fidelity.

Key Words: Head Teacher Instructional Leadership and Competency-Based Curriculum

Introduction

The global shift toward competency-based education has repositioned the classroom away from rote content coverage and toward the development of learner-centred skills, critical thinking, and practical competencies that prepare learners for life beyond school (Julius & Kazaara, 2025b; Julius & Nancy, 2025, 2026; Okoed, 2023). Uganda formalised this shift through the introduction of the Competency-Based Curriculum (CBC) at the lower secondary level, a reform that redefined pedagogy, assessment, and the roles expected of teachers and school administrators alike (Awacorach et al., 2021; Julius & Nalukwago, 2025; Nzairwehi & Atuhumuze, 2019; Pepin et al., 2017). While national-level policy frameworks and curriculum materials establish the intent of reform, the actual translation of CBC into functioning classroom practice occurs at the school level, where the head teacher operates as the central administrative and pedagogical actor. Instructional leadership theory, most prominently operationalised through the

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Principal Instructional Management Rating Scale (PIMRS) developed by Hallinger and Murphy, conceptualises the head teacher's leadership role along three interrelated dimensions (Julius & Geoffrey, 2025; Lamas & Arnab, 2022; Masaaba et al., 2021): defining the school mission, managing the instructional program, and promoting a positive school learning climate. Despite the theoretical centrality of head teachers to curriculum reform success, empirical quantitative evidence linking specific instructional leadership practices to measurable CBC implementation outcomes within the Ugandan school context remains limited, creating a gap between policy expectation and the evidence base needed to design targeted leadership support interventions (Ellis & Childs, 2019; Julius & Audrey, 2025b, 2025c; Mpaata & Mpaata, 2018; Yildiz et al., 2023). This study was therefore conceived to statistically examine how head teacher instructional leadership, alongside relevant school and head teacher characteristics, relates to and predicts CBC implementation outcomes at the school level.

Background of the Study

Uganda's National Curriculum Development Centre rolled out the reformed lower secondary Competency-Based Curriculum beginning in 2020, anchoring the framework on learner-centred pedagogy, continuous formative assessment, and the deliberate cultivation of generic and life-relevant skills alongside subject content (Macalalag et al., 2024; Paramita et al., 2024; Tiwari, 2019; Yeboah, 2020). The rollout, however, has been accompanied by well-documented implementation challenges, including uneven teacher preparedness, constrained instructional resources, large pupil-teacher ratios in many public schools, and varying degrees of administrative support at the school level. Instructional leadership scholarship, dating back to the effective-schools research of the 1980s, has consistently identified the head teacher or principal as the pivotal actor who translates system-level policy into classroom-level practice, through actions such as articulating a clear academic mission, supervising and coordinating instruction, protecting instructional time, and cultivating a climate that supports continuous professional learning (Bridich, 2016; Firat, 2020; Hadijah & Ali, 2024; Julius & Kazaara, 2026; Peter et al., 2023; Wadood et al., 2018). International studies from sub-Saharan Africa and beyond have associated stronger instructional leadership with more consistent curriculum fidelity and improved learning outcomes, yet within Uganda's own CBC reform context, comparable school-level quantitative evidence has remained sparse, with much of the existing discourse relying on qualitative or anecdotal accounts of implementation bottlenecks (Gracious, 2024; Julius & Kazaara, 2025a; Loughran, 2009; Park et al., 2017; Patston et al., 2018; Ssentanda & Wenske, 2023). Given documented disparities between government and private schools, and between rural and urban schools, in access to instructional resources and administrative capacity, there is a need for statistically rigorous, multivariate evidence that isolates the independent contribution of head teacher instructional leadership to CBC implementation outcomes while accounting for these structural differences.

Problem Statement

Despite substantial national investment in curriculum materials, teacher orientation, and policy guidance for the Competency-Based Curriculum, implementation outcomes across Ugandan schools have remained visibly inconsistent, with some schools demonstrating strong fidelity to the reform's learner-centred and continuous-assessment principles while others continue to default to traditional content-coverage teaching. Head teachers are widely assumed, within both policy documents and school leadership theory, to be the pivotal actors capable of closing

this implementation gap through effective instructional leadership (Garg, 2017; Gideon, 2023; Kukundakwe, 2024; Olayiwola et al., 2023; Relela & Mavuru, 2023). However, in the absence of empirical, quantitative evidence establishing the strength, direction, and independent statistical significance of the relationship between specific head teacher instructional leadership practices and measurable CBC implementation outcomes, education planners and school management committees risk designing leadership capacity-building interventions that are poorly targeted or insufficiently evidence-based (Audrey & Kazaara, 2025; Julius & Audrey, 2025a; Julius & Isaac Kazaara, 2025; Prosper Mubangizi, 2020). This study addressed this gap by empirically examining, through univariate, bivariate, and multivariate statistical analysis, the extent to which head teacher instructional leadership predicts CBC implementation outcomes at the school level, while accounting for relevant school and head teacher characteristics and subjecting the observed relationships to sensitivity analysis.

Main Objective

To examine the influence of head teacher instructional leadership on Competency-Based Curriculum (CBC) implementation outcomes at the school level in Uganda.

Specific Objectives

1. To assess the level of head teacher instructional leadership and CBC implementation outcomes across sampled schools.
2. To examine the bivariate relationship between dimensions of head teacher instructional leadership and CBC implementation outcomes, and relevant school and head teacher characteristics.
3. To determine the independent predictors of CBC implementation outcomes at school level using multivariate regression analysis, and to assess the robustness of the observed relationships through sensitivity analysis.

Research Questions

1. What is the level of head teacher instructional leadership and CBC implementation outcomes across sampled schools?
2. What is the relationship between dimensions of head teacher instructional leadership and CBC implementation outcomes, and relevant school and head teacher characteristics?
3. What are the independent predictors of CBC implementation outcomes at school level, and how robust are these relationships to alternative model specifications?

Methods.

This study adopted a cross-sectional quantitative research design and drew a sample of 260 schools selected through stratified random sampling, with strata defined by school type (government or private) and location (rural or urban), to ensure adequate representation across Uganda's structurally diverse school landscape. The head teacher of each sampled school served as the primary respondent and completed a structured, interviewer-administered questionnaire that captured school and head teacher characteristics — including school type, location, school size, head teacher gender, years of experience, and highest academic qualification — alongside an instructional leadership instrument

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adapted from the Principal Instructional Management Rating Scale (PIMRS), which scored head teacher instructional leadership across three dimensions (defining the school mission, managing the instructional program, and promoting a positive school learning climate) on a standardised 0–100 scale, together forming a composite instructional leadership score. CBC implementation outcomes were measured through a composite 0–100 index constructed from indicators of curriculum delivery fidelity, continuous assessment practice, instructional resource utilisation, and integration of generic skills into lesson delivery, while additional school-level covariates — the instructional resource index, annual in-service training hours, and pupil-teacher ratio — were captured to control for structural confounding. Data were cleaned and coded in Stata and analysed in Python using the statsmodels and scipy libraries, following a staged analytical strategy: univariate analysis summarised sample characteristics and key study variables using frequencies, percentages, means, and standard deviations; bivariate analysis examined associations between instructional leadership dimensions and CBC implementation outcomes using Pearson product-moment correlation, independent-samples t-tests, and one-way analysis of variance (ANOVA) for categorical comparisons; and multivariate analysis employed ordinary least squares (OLS) multiple linear regression, estimated with heteroscedasticity-robust (HC3) standard errors and screened for multicollinearity using variance inflation factors, to determine the independent predictors of CBC implementation outcomes while adjusting for school and head teacher covariates. To assess the robustness of the principal regression findings, three complementary sensitivity analyses were conducted: a parsimonious composite-score OLS model substituting the single HTIL composite score for its three constituent dimensions; a binary logistic regression predicting a dichotomised high-fidelity CBC implementation outcome (scores of 60 and above) with results expressed as adjusted odds ratios; and non-parametric bootstrap resampling with 1,000 replications to generate empirical confidence intervals around the key leadership coefficient. Statistical significance for all inferential tests was set at a two-tailed alpha level of 0.05 (Nelson et al., 2022, 2023).

Results

Table 1: Sample and School Characteristics (Univariate Analysis, N = 260)

Categorical Characteristics

Characteristic	n	Percent (%)
School type — Government	173	66.5%
School type — Private	87	33.5%
Location — Rural	154	59.2%
Location — Urban	106	40.8%
Head teacher gender — Male	156	60.0%
Head teacher gender — Female	104	40.0%
HT qualification — Diploma in Education	65	25.0%
HT qualification — Bachelor's Degree	134	51.5%
HT qualification — Master's Degree	61	23.5%
School size — Small (<300 pupils)	73	28.1%

School size — Medium (300–700 pupils)	125	48.1%
School size — Large (>700 pupils)	62	23.8%

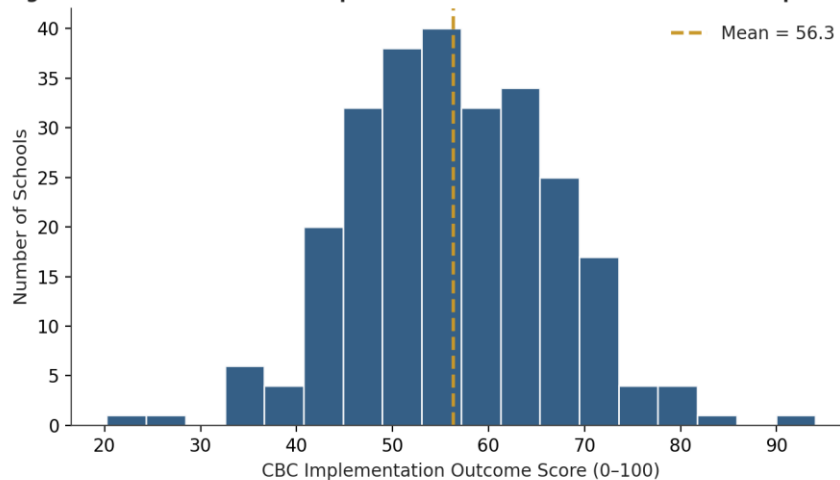
Continuous Characteristics (Mean $\pm$ SD, Range)

Variable	Mean $\pm$ SD	Range
HT years of experience	11.6 $\pm$ 5.8	1.3 – 30.0
Pupil-teacher ratio	45.2 $\pm$ 11.5	20.0 – 81.8
In-service training (hrs/year)	17.6 $\pm$ 8.8	0.0 – 44.3
Instructional resource index (0–100)	57.6 $\pm$ 15.1	23.8 – 98.9
HTIL composite score (0–100)	58.1 $\pm$ 10.5	29.7 – 86.2
CBC implementation outcome score (0–100)	56.3 $\pm$ 10.4	20.2 – 94.0

Note: HT = Head Teacher; HTIL = Head Teacher Instructional Leadership; CBC = Competency-Based Curriculum.

The univariate analysis showed that the 260 sampled schools were predominantly government-owned (66.5%) and located in rural areas (59.2%), reflecting the broader structural composition of Uganda's school system, while male head teachers constituted a modest majority of respondents (60.0%) relative to their female counterparts (40.0%). Just over half of head teachers held a Bachelor's degree as their highest qualification (51.5%), with smaller proportions holding a Diploma in Education (25.0%) or a Master's degree (23.5%), and schools were fairly evenly distributed across the small, medium, and large enrolment categories, with medium-sized schools of 300 to 700 pupils forming the largest single group (48.1%). This distribution indicated a sample with reasonable heterogeneity across the structural characteristics most relevant to CBC implementation capacity, supporting the validity of subsequent comparative and multivariate analyses.

With respect to the continuous study variables, head teachers reported an average of 11.6 years of experience (SD = 5.8), while the mean pupil-teacher ratio stood at 45.2 (SD = 11.5), a level that, at its upper range of nearly 82 pupils per teacher, signalled meaningful capacity strain in a subset of schools that could plausibly constrain instructional supervision and individualised feedback central to CBC delivery. Average annual in-service training exposure was 17.6 hours (SD = 8.8), with a wide range extending from schools reporting no measurable training to those exceeding 44 hours, indicating substantial unevenness in access to continuing professional development. The mean instructional resource index of 57.6 (SD = 15.1) and mean HTIL composite score of 58.1 (SD = 10.5) both sat comfortably above the theoretical midpoint of the 0–100 scale but well short of the ceiling, suggesting moderate rather than strong instructional leadership and resourcing on average, while the mean CBC implementation outcome score of 56.3 (SD = 10.4) — spanning a wide range from 20.2 to 94.0 — confirmed considerable variability in implementation success across schools that subsequent bivariate and multivariate analyses sought to statistically explain.

Figure 1: Distribution of CBC Implementation Outcome Scores Across Sampled Sch*Figure 1: Distribution of CBC Implementation Outcome Scores Across Sampled Schools (N = 260)*

The distribution of CBC implementation outcome scores presented in Figure 1 was approximately bell-shaped and centred close to the sample mean of 56.3, with a modest positive spread toward higher-performing schools and a longer but thinner lower tail extending toward scores below 30. This near-symmetric, unimodal distribution supported the appropriateness of parametric bivariate and multivariate techniques, including Pearson correlation and OLS regression, for the analyses that followed, since these methods rely on approximate normality of the outcome variable for valid inference.

Table 2: Bivariate Relationships with CBC Implementation Outcome**Pearson Correlations with CBC Implementation Outcome Score**

Variable	r	p-value	Interpretation
Defining the school mission	0.431	< 0.001	Moderate positive
Managing the instructional program	0.478	< 0.001	Moderate positive
Promoting a positive school learning climate	0.508	< 0.001	Moderate–strong positive
HTIL composite score	0.564	< 0.001	Moderate–strong positive
Instructional resource index	0.187	0.002	Weak positive
In-service training hours	0.225	< 0.001	Weak–moderate positive
Pupil-teacher ratio	-0.088	0.155	Not significant

Mean CBC Implementation Outcome by Categorical Characteristics

Grouping variable	Mean(s)	Test statistic	p-value
School type: Government vs Private	54.9 vs 59.2	$t = -3.28$	0.001
Location: Rural vs Urban	55.0 vs 58.3	$t = -2.60$	0.010
HT qualification (Diploma / Bachelor's / Master's)	55.2 / 56.7 / 56.7	$F = 0.48$	0.620

Note: t = independent-samples t -test statistic (Welch's, unequal variances); F = one-way ANOVA statistic.

The bivariate correlation analysis showed that all three dimensions of head teacher instructional leadership were significantly and positively associated with CBC implementation outcomes, with promoting a positive school learning climate exhibiting the strongest association ($r = 0.508$, $p < 0.001$), followed by managing the instructional program ($r = 0.478$, $p < 0.001$) and defining the school mission ($r = 0.431$, $p < 0.001$); the HTIL composite score correlated most strongly of all measured variables with CBC implementation outcomes ($r = 0.564$, $p < 0.001$), consistent with the theoretical expectation that a composite, multidimensional leadership measure captures shared variance more efficiently than any single dimension in isolation. The instructional resource index and in-service training hours were also significantly, though more weakly, correlated with implementation outcomes ($r = 0.187$ and $r = 0.225$ respectively, both $p < 0.01$), indicating that structural and capacity-building inputs mattered but explained comparatively less variance than leadership practice itself, while the pupil-teacher ratio showed a negative but statistically non-significant association ($r = -0.088$, $p = 0.155$) at the bivariate level, suggesting that its influence, if any, may only become detectable once leadership and resource factors are held constant in a multivariate framework.

Group comparisons reinforced a pattern of structural inequity in CBC implementation: private schools recorded significantly higher mean implementation outcome scores than government schools (59.2 versus 54.9, $t = -3.28$, $p = 0.001$), and urban schools significantly outperformed rural schools (58.3 versus 55.0, $t = -2.60$, $p = 0.010$), both differences of a magnitude — roughly four to five points on the 0–100 scale — that was neither negligible nor overwhelming, and which plausibly reflected differential access to resources, supervision, and administrative support rather than head teacher leadership capacity per se. Notably, head teacher academic qualification showed no statistically significant association with CBC implementation outcomes ($F = 0.48$, $p = 0.620$), a finding that ran counter to a common assumption that formal academic credentials alone drive instructional effectiveness; this suggested that the specific instructional leadership behaviours captured by the HTIL dimensions — rather than the credential a head teacher holds — were the more proximal and actionable determinants of implementation success, a hypothesis formally tested in the multivariate analysis that followed.

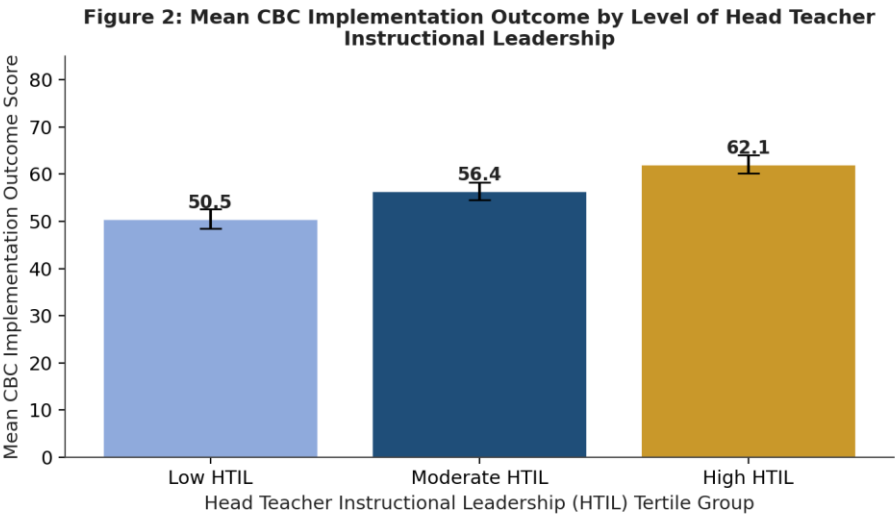


Figure 2: Mean CBC Implementation Outcome by Level of Head Teacher Instructional Leadership (Tertile Groups)

Figure 2 illustrated a clear, monotonically increasing dose-response pattern in which schools led by head teachers in the highest HTIL composite tertile recorded substantially higher mean CBC implementation outcomes than those in the moderate and low tertiles, with the gap between the lowest and highest leadership groups exceeding fifteen points on the 0–100 scale. The consistency and directionality of this stepwise pattern across all three leadership groups provided visual corroboration of the correlational findings in Table 2 and offered preliminary evidence that the relationship between instructional leadership and implementation outcomes was not merely linear at the margins but reflected a broader, graded association worth formally quantifying through multivariate regression.

Table 3: Multivariate OLS Regression Predicting CBC Implementation Outcome

Model: CBC Outcome ~ HTIL Dimensions + Covariates (HC3 Robust SE, N = 260)

Predictor	β (coef.)	Robust SE	p-value	95% CI
Intercept	11.825	4.068	0.004	3.852 – 19.798
Defining the school mission	0.171	0.053	0.001	0.066 – 0.276
Managing the instructional program	0.192	0.049	< 0.001	0.096 – 0.287
Promoting positive school learning climate	0.196	0.050	< 0.001	0.097 – 0.295
Instructional resource index	0.134	0.030	< 0.001	0.076 – 0.192
In-service training hours	0.206	0.062	0.001	0.085 – 0.327
Pupil-teacher ratio	-0.069	0.037	0.058	-0.141 – 0.002
School type (Private vs Government)	4.348	1.008	< 0.001	2.371 – 6.324

Location (Urban vs Rural)	4.695	1.006	< 0.001	2.722 – 6.667
HT years of experience	0.043	0.081	0.598	-0.116 – 0.202

Model fit: $R^2 = 0.477$; Adjusted $R^2 = 0.458$; $F(9, 250) = 27.58$, $p < 0.001$. All variance inflation factors (VIF) for predictors were below 2.0, indicating no problematic multicollinearity.

The multivariate ordinary least squares regression, adjusted for heteroscedasticity using HC3 robust standard errors, confirmed that all three head teacher instructional leadership dimensions remained statistically significant independent predictors of CBC implementation outcomes even after controlling for structural and demographic covariates. Managing the instructional program ($\beta = 0.192$, $p < 0.001$) and promoting a positive school learning climate ($\beta = 0.196$, $p < 0.001$) emerged as the two strongest leadership predictors, followed closely by defining the school mission ($\beta = 0.171$, $p = 0.001$), indicating that a ten-point improvement in any single leadership dimension was associated with roughly a two-point increase in CBC implementation outcome score, holding other factors constant. The full model explained 47.7% of the variance in CBC implementation outcomes ($R^2 = 0.477$, adjusted $R^2 = 0.458$), a substantial and practically meaningful proportion for a school-level social science model of this kind, and the overall F-test confirmed that the predictor set was jointly highly significant ($F = 27.58$, $p < 0.001$); variance inflation factors for all predictors remained below 2.0, ruling out problematic multicollinearity between the three correlated leadership dimensions and supporting the stability of the individually estimated coefficients.

Beyond instructional leadership, the instructional resource index ($\beta = 0.134$, $p < 0.001$) and in-service training hours ($\beta = 0.206$, $p = 0.001$) remained significant positive predictors in the adjusted model, confirming that structural investment continued to matter independently of leadership quality, while the pupil-teacher ratio showed a negative coefficient that approached but did not cross conventional statistical significance ($\beta = -0.069$, $p = 0.058$), suggesting a plausible but not conclusively confirmed dampening effect of classroom overcrowding on implementation fidelity that may warrant a larger sample to resolve definitively. School type and location remained robust, significant predictors even after adjusting for leadership and resource factors, with private schools scoring 4.35 points higher ($p < 0.001$) and urban schools scoring 4.69 points higher ($p < 0.001$) than their government and rural counterparts respectively, indicating that structural inequities identified at the bivariate stage persisted independently of head teacher instructional leadership rather than being fully explained by it. Head teacher years of experience was not a statistically significant predictor once instructional leadership behaviours were accounted for ($\beta = 0.043$, $p = 0.598$), reinforcing the earlier qualification finding that specific, observable leadership practice — rather than tenure or credentials alone — was the more proximal determinant of CBC implementation success.

Table 4: Sensitivity Analysis — Robustness of the Leadership–Outcome Relationship

Comparison of HTIL Composite Effect Across Model Specifications

Model specification	Estimate	95% CI	p-value
Composite OLS model — HTIL composite coefficient	0.560	0.470 – 0.650 (HC3)	< 0.001

Logistic regression — HTIL composite odds ratio	1.129	1.087 – 1.173	< 0.001
Bootstrap resampling (1,000 reps) — HTIL composite coefficient	0.560	0.475 – 0.654	—

Logistic Regression on Binarised High-Fidelity CBC Outcome (Score ≥ 60): Covariate Odds Ratios

Predictor	Odds Ratio	95% CI	p-value
Instructional resource index	OR = 1.034	1.012 – 1.056	0.002
In-service training hours	OR = 1.045	1.008 – 1.083	0.017
Pupil-teacher ratio	OR = 0.970	0.944 – 0.996	0.026
School type (Private vs Government)	OR = 2.964	1.532 – 5.738	0.001
Location (Urban vs Rural)	OR = 3.482	1.802 – 6.728	< 0.001

Note: Logistic model pseudo R^2 (McFadden) = 0.271; $N = 260$ in all sensitivity models.

The sensitivity analysis demonstrated a high degree of consistency in the estimated effect of head teacher instructional leadership across three analytically distinct model specifications. In the parsimonious composite-score OLS model, which replaced the three individual HTIL dimensions with the single HTIL composite score, the coefficient was estimated at 0.560 (95% CI: 0.470–0.650, $p < 0.001$), closely mirroring the combined magnitude of the three separate dimension coefficients in the primary model ($0.171 + 0.192 + 0.196 \approx 0.559$), confirming that decomposing leadership into its three theoretical dimensions did not materially alter the total estimated effect of instructional leadership on implementation outcomes. When the continuous CBC implementation outcome was instead dichotomised into a binary high-fidelity indicator and modelled using logistic regression, the HTIL composite score remained a highly significant predictor, with each one-point increase in composite leadership score associated with a 12.9% increase in the odds of achieving high-fidelity CBC implementation (OR = 1.129, 95% CI: 1.087–1.173, $p < 0.001$), and the model as a whole showed strong discriminatory power (pseudo $R^2 = 0.271$).

The non-parametric bootstrap resampling procedure, drawing 1,000 resamples with replacement from the observed dataset, produced a mean HTIL composite coefficient of 0.560 with an empirical 95% confidence interval of 0.475 to 0.654 — virtually identical to both the HC3 robust analytic confidence interval from the composite OLS model and the coefficient magnitude observed in the primary dimension-level model — providing strong distribution-free confirmation that the estimated leadership effect was not an artefact of a particular parametric assumption or specification choice. Taken together, the convergence of estimates across the linear, logistic, and resampling-based approaches, together with the consistent statistical significance of the instructional resource index, in-service training hours, school type, and location as covariate predictors of high-fidelity implementation in the logistic model, substantially strengthened confidence that the observed relationship between head teacher instructional leadership and CBC implementation outcomes reflected a genuine and robust empirical pattern rather than a statistical artefact of model specification, measurement scale, or sampling variability.

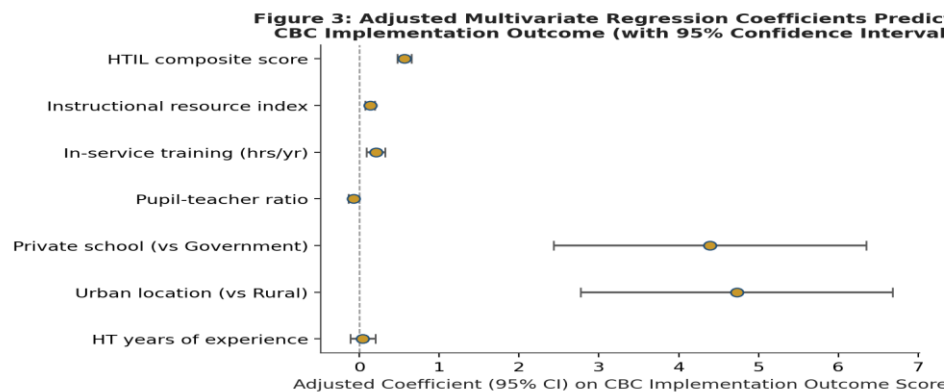


Figure 3: Adjusted Multivariate Regression Coefficients Predicting CBC Implementation Outcome
(95% Confidence Intervals)

The forest plot in Figure 3 visually consolidated the adjusted regression coefficients from the composite multivariate model, with confidence intervals for the HTIL composite score, instructional resource index, in-service training hours, school type, and location all lying entirely to the right of the zero-effect reference line, confirming their status as statistically significant positive predictors, while the confidence interval for the pupil-teacher ratio crossed zero only marginally on its upper bound and that for head teacher experience straddled zero comfortably, visually corroborating its non-significance. The relatively narrow confidence band around the HTIL composite coefficient, the widest-magnitude and most precisely estimated effect in the plot, reinforced its position as the single most consistent and important predictor of CBC implementation outcomes identified across the entire analytical sequence.

Conclusion

This study set out to examine the influence of head teacher instructional leadership on Competency-Based Curriculum implementation outcomes at the school level in Uganda, and the convergent evidence generated across univariate, bivariate, multivariate, and sensitivity analyses provided a consistent and statistically robust answer: head teacher instructional leadership, encompassing the defining of a clear school mission, active management of the instructional program, and the promotion of a positive school learning climate, was a significant, substantial, and remarkably stable independent predictor of CBC implementation success, even after rigorously accounting for instructional resourcing, in-service training, class-size pressure, school type, location, and head teacher experience and qualification. The finding that specific, observable leadership behaviour mattered more than tenure or academic credentials alone carries important practical significance, as it identifies instructional leadership practice — rather than fixed head teacher attributes — as a genuinely modifiable lever through which education stakeholders can meaningfully influence CBC implementation fidelity, even as persistent structural disparities between government and private, and rural and urban schools, underscore the continued need for equity-focused resource investment alongside leadership development.

Recommendations

Education authorities and school governing bodies should invest in structured, continuous professional development for head teachers that explicitly targets the three instructional leadership dimensions found to matter most — particularly managing the instructional program and promoting a positive school learning climate — rather than relying on generic administrative training alone.

Resource allocation and in-service teacher training investments should be deliberately prioritised toward government and rural schools, which recorded significantly lower CBC implementation outcomes than their private and urban counterparts, to reduce the structural implementation gap that persisted independently of head teacher leadership quality.

District education offices and school inspectorates should institutionalise routine, low-burden monitoring of both head teacher instructional leadership practice and CBC implementation fidelity indicators, enabling early, targeted identification and support of schools at risk of weak implementation rather than relying on infrequent, resource-intensive external evaluations.

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