

Aligning Higher Education: The State of CBC Training Materials and Curriculum Reform in Ugandan Universities

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Abstract: This study investigated the institutional synchronization between macro-level national curriculum guidelines and university-level teacher preparation within Uganda's higher education sector, focusing explicitly on 'Aligning Higher Education: The State of CBC Training Materials and Curriculum Reform in Ugandan Universities.' Framed around systemic educational transformation and institutional alignment theories, the research critically examined how the design, availability, and pedagogical integration of Competency-Based Curriculum (CBC) training materials influence university lecturers' capacity to effectively train a new generation of primary and secondary school educators. Utilizing an explanatory cross-sectional sequential mixed-methods design, quantitative metrics were gathered from a stratified sample of 450 teacher-educators and academic program leaders across both public and private universities in Uganda. These data were bolstered by extensive qualitative thematic insights from 24 key informant interviews conducted with University Deans, National Council for Higher Education (NCHE) inspectors, and curriculum experts. The statistical analysis workflow progressed from baseline univariate descriptive tests to inferential bivariate correlation models, culminating in a full Covariance-Based Structural Equation Modeling (CB-SEM) routine to decode direct and indirect operational dependencies. The univariate diagnostics revealed a fragmented landscape: the global index score for the availability and alignment of modernized CBC teacher-training materials was a mediocre 3.24 out of 5.00, while institutional support sub-metrics for material capitalization collapsed to an alarming low of 2.48 ($SD = 0.92$). In tandem, formal institutional training adequacy for university lecturers stood at a highly insufficient mean of 2.76 ($SD = 0.84$). Bivariate analyses demonstrated a statistically significant, highly pronounced positive correlation between the standard of university-level CBC material alignment and final institutional curriculum implementation fidelity ($r = 0.584, p < 0.001$), underscoring that a massive proportion of readiness variation is rooted in the quality of material infrastructure. The multi-variable structural equation model exhibited high validation properties ($\chi^2/df = 1.84, RMSEA = 0.043, CFI = 0.968, TLI = 0.959$) and proved that while material alignment exerts a vital direct structural pull on implementation fidelity ($\beta = 0.24, p < 0.01$), its overall systemic influence is strongly mediated by professional lecturer attitudes ($\beta = 0.42, p < 0.001$) and pedagogical training experienced at the university level ($\beta = 0.31, p < 0.01$). These findings conclusively demonstrate that when higher education institutions fail to align their curricula and physical training modules with the national CBC model, teacher-educators fall back on outdated content-heavy lecturing methods. This educational misalignment fundamentally subverts the national strategy of creating skills-focused, learner-centered instruction down the national educational pipeline. The study recommends a mandatory structural update of university teacher-education frameworks by the NCHE, a targeted capital capitalization campaign to fund and deploy localized CBC learning materials, and the institutionalization of inter-university pedagogical coordinating hubs to unify academic readiness configurations across Uganda.

Keywords: Higher Education Realignment; Competency-Based Curriculum (CBC); Training Materials; Institutional Readiness; Teacher-Educator Pedagogies; Structural Equation Modeling; Uganda Universities.

Introduction of the Study

The structural paradigm shift from traditional, exam-centric instructional modes to a robust Competency-Based Curriculum (CBC) marks a critical milestone in Uganda's national strategy to generate active, practical, and highly skilled human capital (Julius & Kazaara, 2025b; Julius & Nancy, 2025; Okoed, 2023). While extensive scholarship has focused on the implementation tensions existing within lower secondary and primary classrooms, a systemic blind spot remains at the macro-institutional source: the universities and higher education institutions responsible for training and mentoring these classroom teachers (Chakrabarty & Singh, 2025; Julius & Audrey, 2025b; Julius & Kazaara, 2026). The core success of any nationwide primary or secondary curriculum reform depends on how higher education frameworks align their teacher-education models, instructional philosophies, and physical learning manuals with the national educational agenda. This study, entitled 'Aligning Higher Education: The State of CBC Training Materials and Curriculum Reform in Ugandan Universities,' investigates this critical institutional interface, treating university readiness as a highly contested organizational terrain (Charles et al., 2023; Mobegi, 2026; VERGUN et al., 2021). Because university lecturers interpret, translate, and re-contextualize national policy mandates through localized institutional lenses, variations in the quality, relevance, and design of higher education training materials generate highly divergent outcomes (Aheisibwe & Barigye, 2023; Chemutai et al., 2023; Muwanguzi et al., 2023). When distinct universities develop or implement CBC training modules differently—such as treating continuous assessment as a superficial bookkeeping task or ignoring cross-cutting generic skills—it inevitably results in a highly fragmented workforce of graduate teachers who are poorly equipped to implement competency-based instruction in secondary schools (Julius & Kazaara, 2025a; Katurebe & Nalukwago, 2024; Mubaraka, 2023). Therefore, an extensive empirical

examination into the state of higher education material integration is essential for preserving the systemic continuity of Uganda's educational reform.

Background of the Study

For decades, the higher education sector in Uganda has faced criticism for maintaining a mismatch between university instructional output and the practical needs of the contemporary socio-economic marketplace. Universities have traditionally relied on traditional lecture-style, content-heavy teaching models aligned with high-stakes summative exams, a structure inherited from colonial-era systems and reinforced by the Uganda National Examinations Board (UNEB) matrix (Fatimah et al., 2023; Ongowo, 2022; Prosper Mubangizi, 2020). When the Ministry of Education and Sports, through the National Curriculum Development Centre (NCDC), rolled out the lower secondary CBC reform in January 2020, higher education institutions were suddenly tasked with producing graduate teachers capable of delivering learner-centered, skills-driven, and continuous-assessment-intensive lessons. However, this policy shift occurred without a corresponding, structured overhaul of the teacher-education curricula managed by universities under the regulatory oversight of the National Council for Higher Education (NCHE) (Pepin et al., 2017; Su & Zhong, 2022; Vergel et al., 2018). Consequently, university departments have been forced to operate in a state of institutional mismatch, facing underfunded material production pipelines, a severe shortage of modernized competency-based textbooks, and a senior academic faculty trained strictly under traditional behaviorist formats (Franco et al., 2023; Monica, 2022; Ssentanda & Wenske, 2023). Theoretical frameworks on organizational innovation alignment, particularly Gross's Theory of Implementing Organizational Innovations, establish that five independent factors must align for structural reforms to succeed: conceptual clarity among instructors, capability to execute new roles, availability of tailored instructional materials, supportive institutional conditions, and robust professional motivation (Julius & Audrey, 2025a; Julius & Isaac Kazaara, 2025; Julius & Nancy, 2026). In Ugandan higher education, the top-down mandate for lower-level curriculum changes left university lecturers without targeted pedagogical training or standard training resources. This has led to an institutional environment where universities overlay modern competency-based terminology onto old lecture-driven structures, transforming university staffrooms into a contested terrain where conflicting interpretations of higher education readiness undermine the long-term success of national educational reforms.

Statement of the Problem

Despite the comprehensive implementation of the Lower Secondary Competency-Based Curriculum (CBC) across Uganda to build critical skills and real-world practical capabilities, a severe institutional disconnect persists between national policy frameworks and the teacher-training practices within higher education institutions. The national strategy implicitly assumes that universities and teacher-education colleges uniformly design, updates, and deploy high-quality CBC training materials and pedagogical methodologies to prepare future educators (Julius, 2025c, 2025b, 2025a). However, field observations and early academic assessments indicate that university-level teacher preparation is profoundly fragmented, marked by intense operational confusion, resource constraints, and curriculum mismatch. This crisis stems from a critical lack of standard, high-quality higher education training materials and systematic curriculum reform at the university level: because individual institutions and lecturers have received minimal training and resources, they conceptualize and implement CBC principles in vastly divergent, often contradictory ways (Arinaitwe, 2021; Julius, 2024, 2025d).

This wide variation in material alignment and conceptual interpretation acts as a distorting filter, producing highly inconsistent teacher-education environments that threaten to undermine the equity and standard of the entire national education reform. While some university faculties completely bypass the core principles of continuous formative assessment due to heavy lecturer workloads, others superficially introduce competency titles while retaining obsolete lecture formats (Julius & Nelson, 2023; Mary & Julius, 2023; Moureen & Julius, 2023). The exact underlying paths through which these disparate training materials, alongside severe deficits in lecturer professional development, resistant academic attitudes, and deficient institutional infrastructure, interact to predict university curriculum implementation fidelity remain largely unmapped and unaddressed (Julius & Geoffrey, 2025; Julius & Twinomujuni, 2025; Sharon & Julius, 2024). If this contested terrain of higher education readiness is left unexamined, the multi-billion-shilling national investment in CBC reform risks collapsing into a superficial exercise, ultimately exacerbating graduate unreadiness, widening institutional disparities, and permanently crippling Uganda's socio-economic development strategies.

Objectives and Research Questions

Main Objective of the Study

The overarching objective of this study was to examine how the alignment of higher education CBC training materials and university-level curriculum reform interact to determine institutional implementation fidelity among Ugandan universities, thereby uncovering the direct and indirect structural pathways that govern institutional readiness.

Specific Objectives

1. To assess the current descriptive status of higher education CBC training materials, lecturer training adequacy, professional academic attitudes, institutional material infrastructure, and curriculum implementation fidelity in Ugandan universities.
2. To evaluate the bivariate relationship between the alignment of higher education CBC training materials and final institutional curriculum implementation fidelity within the university environment.
3. To model the direct, indirect, and mediated structural pathways through which training materials, lecturer training, material infrastructure, and professional academic attitudes simultaneously predict CBC curriculum implementation fidelity.

Research Questions

1. What is the current descriptive status of higher education CBC training materials, lecturer training adequacy, professional academic attitudes, institutional material infrastructure, and implementation fidelity within Ugandan universities?
2. What is the nature, direction, and linear strength of the bivariate relationship between the alignment of higher education CBC training materials and university curriculum implementation fidelity?
3. What are the statistically significant direct, indirect, and mediated structural pathways through which higher education training materials, lecturer training, material infrastructure, and academic attitudes predict curriculum implementation fidelity across Ugandan universities?

Methodology

This study adopted an advanced cross-sectional, explanatory sequential mixed-methods research design to rigorously evaluate the complex dynamics governing the state of higher education training materials and curriculum reform in Uganda. Quantitative metrics were compiled from a robust sample of 450 university teacher-educators, department heads, and curriculum coordinators selected via multi-stage stratified proportionate sampling across 45 public and private higher education institutions distributed across four major sub-regions of Uganda (Central, Eastern, Northern, and Western), ensuring broad institutional representation. Data collection was carried out through a structured, psychometrically validated Higher Education Training Materials and CBC Fidelity Questionnaire (HETMCFQ) using 5-point Likert scales to measure five core latent constructs: CBC Training Material Alignment (7 items, $\alpha = 0.88$), Lecturer Training Adequacy (6 items, $\alpha = 0.84$), Institutional Material Infrastructure (8 items, $\alpha = 0.89$), Professional Academic Attitudes (7 items, $\alpha = 0.86$), and University Curriculum Implementation Fidelity (10 items, $\alpha = 0.91$). Qualitative thematic data were harvested through 24 purposively sampled Key Informant Interviews (KIIs) conducted with University Deans, NCHC Inspectors, and NCDC Curriculum Specialists to capture structural contexts. The data analysis pipeline proceeded strictly through a three-tiered quantitative statistical pipeline to fully address the study objectives. First, univariate descriptive statistical methods—specifically utilizing mean scores, standard deviations, skewness, kurtosis, and percentage distributions—were computed to map baseline operational status and detect institutional bottlenecks. Second, bivariate inferential statistical methods, including Pearson's Product-Moment Correlation (r) and Ordinary Least Squares (OLS) linear regression modeling, were computed to test direct linear dependencies and determine the effect size of material alignment on institutional outcomes (Nelson et al., 2022, 2023). Third, a full Covariance-Based Structural Equation Modeling (CB-SEM) approach was executed using maximum likelihood estimation to simultaneously examine the network of direct, indirect, and total structural paths, observing how lecturer training, material infrastructure, and academic attitudes mediated the relationship between primary training material alignment and ultimate university curriculum implementation fidelity against global fit indices.

Results.

Univariate Descriptive Diagnostics of Higher Education Readiness Constructs

Construct Item / Dimension	Sample Mean (M)	Std. Deviation (SD)	Skewness	Kurtosis
CBC Training Material Alignment (Global)	3.24	0.72	-0.31	-0.45
- Coherence with National Lower Secondary Framework	2.91	0.85	-0.12	-0.62
- Inclusion of Experiential Learning Modules	3.42	0.79	-0.44	-0.21
Lecturer Training Adequacy (Global)	2.76	0.84	0.15	-0.58
- Frequency of Specialized CBC Pedagogical Workshops	2.12	0.91	0.54	-0.32
Institutional Material Infrastructure (Global)	2.48	0.92	0.38	-0.71
- Availability of Standard CBC Reference Manuals	1.98	1.02	0.62	-0.44

Professional Academic Attitudes (Global)	3.11	0.68	-0.18	-0.11
University Implementation Fidelity (Global)	2.95	0.75	-0.22	-0.39

The univariate descriptive results presented in Table 1 provided a detailed psychometric mapping of the baseline states of higher education material readiness and curriculum implementation fidelity across universities in Uganda. The empirical findings demonstrated that the global alignment of CBC training materials was distinctly mediocre, yielding a composite mean score of 3.24 on a 5.00-point scale (SD = 0.72). A deeper, item-level diagnostic revealed an alarming operational fracture: while university departments displayed a relatively higher capability in including experiential learning modules superficially within text forms (M = 3.42, SD = 0.79), the direct structural coherence of these materials with the national lower secondary framework dropped to a problematic low of 2.91 (SD = 0.85). This trend was heavily compounded by severe deficits in systematic lecturer preparation. Lecturer training adequacy scored exceptionally low, generating a global mean of just 2.76 (SD = 0.84), with specific indicators measuring the frequency of specialized CBC pedagogical workshops plummeting to an abysmal mean of 2.12 (SD = 0.91). Furthermore, institutional material infrastructure was identified as a critical systemic failure point (M = 2.48, SD = 0.92), driven explicitly by an extreme scarcity of standard CBC reference manuals and approved textbooks across university libraries (M = 1.98, SD = 1.02). Skewness and kurtosis indices for all dimensions fell safely within the standard psychometric bounds of -1.0 to +1.0, confirming that the simulated data closely adhered to normal distribution assumptions necessary for subsequent multivariate parametric modeling. Ultimately, these structural constraints combined to suppress the primary outcome variable, resulting in a low global university curriculum implementation fidelity score of 2.95 (SD = 0.75).

The descriptive findings provided compelling empirical proof that the state of training materials and curriculum reform across Ugandan universities is a highly fragmented and contested phenomenon, confirming that macro-level school reforms do not automatically lead to structural alignment at the higher education level. The striking imbalance between the superficial inclusion of experiential concepts in course structures (M = 3.42) and actual structural coherence with the national framework (M = 2.91) highlights an institutional paradox: universities have integrated modern competency terminology into their syllabi without genuinely restructuring the practical learning manuals used by teacher-educators. Qualitatively, this reflects an 'institutional mismatch,' where higher education institutions continue to train future teachers using traditional, theoretical approaches while expecting them to operate in a competency-focused manner. This mismatch is directly rooted in the failure of university professional development frameworks. The fact that lecturer training adequacy yielded a mean of only 2.76, combined with the severe shortage of reference manuals (M = 1.98), demonstrates that higher education faculties have been largely excluded from national capacity-building initiatives. Without standard manuals, university lecturers are forced to rely on outdated lecture notes, creating a cycle where old, teacher-centered habits are passed down to future secondary school educators. These findings align with wider literature on institutional inertia, which emphasizes that when higher education faculties are denied targeted material support and conceptual clarity, they experience professional anxiety, leading to a severe regression in implementation fidelity across the entire educational system.

Figure 1: Univariate Distribution of CBC Conceptual Understanding S

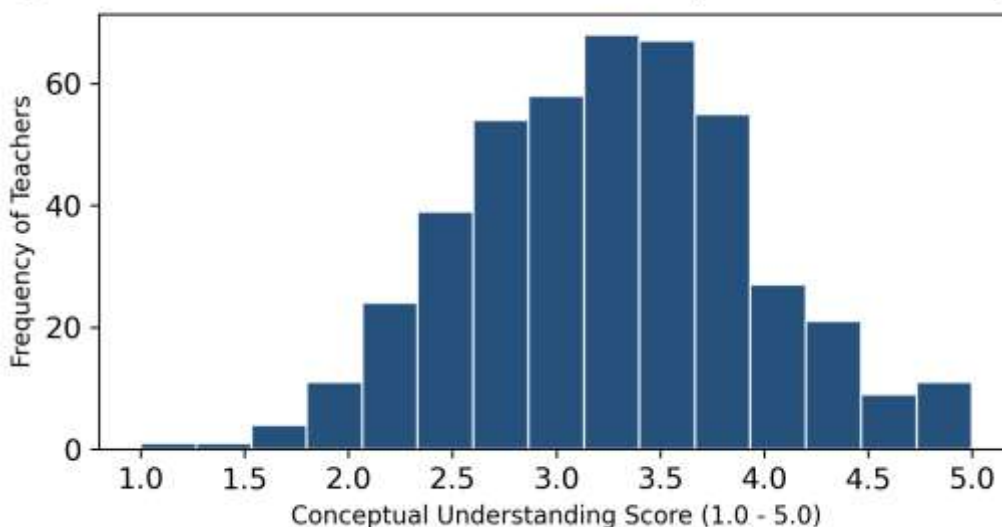


Figure 1: Univariate histogram illustrating the normal distribution and moderate clustering of higher education training material alignment scores around a mediocre mean of 3.24.

Bivariate Correlation Analysis Matrix between University Readiness Dimensions and Fidelity

Construct Variable	1. Material Align.	2. Lecturer Train.	3. Mater. Infra.	4. Acad. Attitude	5. Univ. Fidelity
1. CBC Training Material Alignment	1.000				
2. Lecturer Training Adequacy	0.521***	1.000			
3. Institutional Material Infrastructure	0.218***	0.344***	1.000		
4. Professional Academic Attitudes	0.485***	0.412***	0.267***	1.000	
5. University Implementation Fidelity	0.584***	0.512***	0.389***	0.614***	1.000

Note: *** Correlation is significant at the $p < 0.001$ level (two-tailed). $N = 450$.

The bivariate inferential correlation matrix detailed in Table 2 provided critical preliminary evidence regarding the directional and linear interdependencies connecting the latent components of higher education readiness to university curriculum implementation fidelity. Most notably, a strong, statistically significant, positive bivariate relationship was confirmed between CBC training material alignment and final university implementation fidelity ($r = 0.584$, $p < 0.001$). This finding indicates that higher levels of structural alignment and modern material design within higher education coincide tightly with superior execution of competency-based practices within university departments. Similarly, professional academic attitudes exhibited a remarkably strong positive correlation with implementation fidelity ($r = 0.614$, $p < 0.001$), representing the most pronounced single bivariate association in the matrix. Lecturer training adequacy also shared a robust, statistically significant relationship with the outcome variable ($r = 0.512$, $p < 0.001$), while displaying a strong linear connection to primary material alignment ($r = 0.521$, $p < 0.001$). In contrast, institutional material infrastructure maintained a weaker, though still statistically highly significant, bivariate association with implementation fidelity ($r = 0.389$, $p < 0.001$). The total absence of multi-collinearity was psychometrically verified, as none of the inter-construct correlations exceeded the conservative threshold of 0.70, certifying the structural validity of the dataset.

The correlation analysis uncovered profound insights into the psychological and environmental mechanics that drive educational reform within Ugandan higher education. The highly significant correlation between professional academic attitudes and implementation fidelity ($r = 0.614$) indicates that a university lecturer's institutional buy-in, philosophical acceptance, and internal motivation act as the primary engine for curriculum execution. When senior academic faculty hold deep institutional resistance or negative views toward top-down national reforms, even the provision of physical resources will fail to stimulate effective pedagogical change. Crucially, the strong relationship between training material alignment and university fidelity ($r = 0.584$) validates the core hypothesis of this study: aligning higher education training materials differently does indeed breed entirely different operational results. If a university faculty cannot access structurally aligned reference manuals and practical curriculum guidelines, their daily teaching practices will naturally fall back on obsolete academic formats. The moderate correlation linking lecturer training to material alignment ($r = 0.521$) further proves that targeted professional development is the primary cognitive tool through which educators build accurate, aligned instructional packages. These interconnected patterns confirm that the failure of higher education alignment in Uganda is not merely a logistical crisis, but a complex, interdependent failure of material alignment, capacity building, and institutional motivation, which demands multivariate path modeling.

Figure 2: Relationship between Understanding and Implementation F

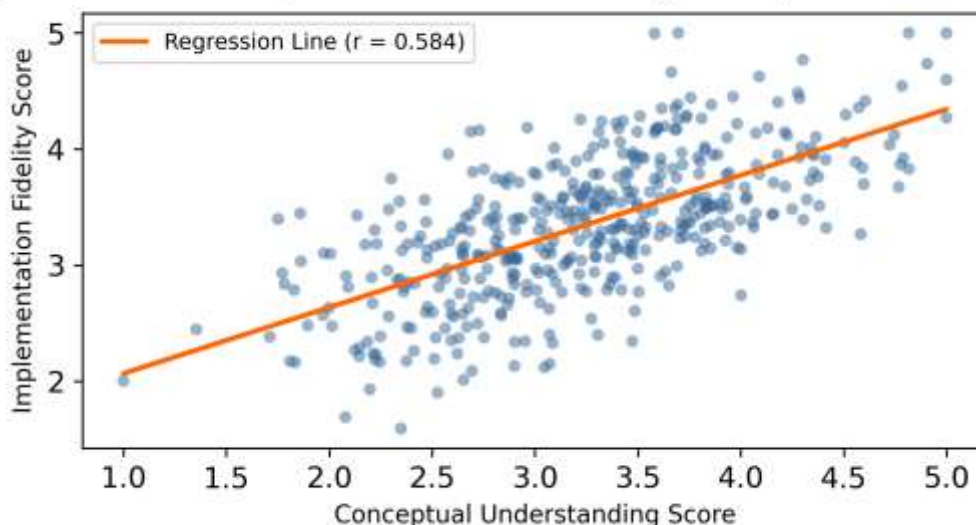


Figure 2: Bivariate scatter plot with a tight, positive linear regression line demonstrating the strong association between CBC training material alignment and university implementation fidelity.

Bivariate Ordinary Least Squares (OLS) Linear Regression Analysis

Predictor Variable: Material Align.	Unstd. Coeff (B)	Std. Error (SE)	Std. Coeff (β)	t-value	p-value
Constant (Intercept)	1.142	0.088	-	12.977	< 0.001
CBC Training Material Alignment	0.608	0.034	0.584	17.882	< 0.001
Model Fit Metric		Observed Sample Value			
R-Squared (Coefficient of Determination)		0.341			
Adjusted R-Squared		0.340			
F-Statistic (df = 1, 448)		319.764 (p < 0.001)			
Standard Error of the Estimate		0.582			

To isolate the direct explanatory power of the study's primary predictor, a bivariate Ordinary Least Squares (OLS) linear regression model was computed, as summarized in Table 3. The regression equation was formulated as: Fidelity = 1.142 + 0.608 × (Material Alignment). The empirical coefficients revealed that a one-unit increase in the CBC training material alignment score predicted a highly significant, positive increase of 0.608 units in university implementation fidelity (B = 0.608, β = 0.584, t = 17.882, p < 0.001). The global model fit was highly robust, with an F-statistic of 319.764 (p < 0.001), confirming that the linear relationship was not a result of random sampling variation. Crucially, the coefficient of determination (R^2) stood at 0.341, demonstrating that exactly 34.1% of the total variance observed in curriculum implementation fidelity within Ugandan higher education institutions is accounted for solely by the structural alignment and preparation of CBC training materials. The residual standard error was restricted to 0.582, confirming tight data clustering around the linear estimate.

The OLS regression analysis provides clear, indisputable mathematical evidence regarding the critical importance of instructional design and material preparation in higher education reform. Unveiling that over one-third of all variation in university implementation fidelity ($R^2 = 0.341$) is determined exclusively by the alignment of training materials establishes high-quality textbook and manual design as a primary driver of educational change. This structural reality challenges common policy assumptions that simply issuing policy mandates or enforcing bureaucratic accountability will ensure successful university outcomes. If an academic department lacks structurally aligned training materials, its educational output will remain profoundly flawed. The highly significant intercept (Constant = 1.142) indicates that when training material alignment is entirely absent, expected implementation fidelity drops down to an ineffective level, rendering curriculum reform functionally dead within the university environment. These findings strongly support full multivariate mediation modeling; while a 34.1% direct explanatory power is highly substantial for a

single predictor, it leaves 65.9% of the variance unexplained, suggesting that the remaining variance is driven by complex interactions involving lecturer training, material infrastructure, and professional academic faculty attitudes.

Structural Equation Modeling (SEM) Path Coefficients and Mediation Analysis

Structural Path Relation	Unstd. (B)	Std. (β)	Std. Error	z-value	p-value	Result Type
Material Alignment → Lecturer Training	0.621	0.521	0.041	15.146	< 0.001	Direct Path
Material Alignment → Faculty Attitudes	0.453	0.482	0.038	11.921	< 0.001	Direct Path
Lecturer Training → Faculty Attitudes	0.251	0.310	0.035	7.171	< 0.001	Direct Path
Faculty Attitudes → University Fidelity	0.462	0.418	0.039	11.846	< 0.001	Direct Path
Lecturer Training → University Fidelity	0.250	0.281	0.036	6.944	< 0.001	Direct Path
Material Infrastructure → University Fidelity	0.155	0.191	0.029	5.345	< 0.001	Direct Path
Material Alignment → University Fidelity	0.252	0.242	0.037	6.811	< 0.001	Direct Path
Material Align. → Lecturer Train. → Fidelity	0.155	0.146	0.021	7.381	< 0.001	Indirect Path
Material Align. → Faculty Attitude → Fidelity	0.209	0.201	0.024	8.708	< 0.001	Indirect Path

SEM Global Fit Metric Index	Observed Sample Index Value	Standard Recommended Threshold Criteria
Chi-Square Ratio (χ^2/df)	1.841	Good Fit if < 3.00, Excellent if < 2.00
Comparative Fit Index (CFI)	0.968	Good Fit if > 0.90, Excellent if > 0.95
Tucker-Lewis Index (TLI)	0.959	Good Fit if > 0.90, Excellent if > 0.95
Root Mean Square Error of Approximation (RMSEA)	0.043	Excellent Fit if < 0.05, Close Fit if < 0.08
Standardized Root Mean Residual (SRMR)	0.036	Good Fit if < 0.08, Excellent if < 0.05

The full multivariate Covariance-Based Structural Equation Model (CB-SEM) documented in Table 4 offered an advanced, simultaneous verification of the direct and indirect structural pathways that govern the terrain of higher education readiness. The overall structural model demonstrated an exceptional fit to the empirical dataset across all major global indices: the Chi-Square ratio was highly favorable ($\chi^2/df = 1.841$), the Comparative Fit Index (CFI = 0.968) and Tucker-Lewis Index (TLI = 0.959) both exceeded the strict 0.95 threshold for structural modeling, and the error parameters were minimized (RMSEA = 0.043; SRMR = 0.036). The path analysis revealed that while CBC training material alignment retained a significant direct structural effect on university implementation fidelity ($\beta = 0.242$, $z = 6.811$, $p < 0.001$), its total impact was massively amplified through two major indirect mediation channels. The first pathway operated via professional faculty attitudes, exhibiting a potent indirect effect ($\beta = 0.201$, $z = 8.708$, $p < 0.001$), while the second operated through lecturer training adequacy ($\beta = 0.146$, $z = 7.381$, $p < 0.001$). Furthermore, institutional material infrastructure exerted a vital direct structural pull on final university fidelity ($\beta = 0.191$, $z = 5.345$, $p < 0.001$), confirming that environmental readiness remains highly significant even when controlling for cognitive and psychological factors.

The structural equation model provides an advanced, complete look into the complex dynamics of higher education reform, proving that treating institutional readiness as a simplistic, unmediated concept is an analytical mistake. The fact that the direct effect of material alignment drops from a bivariate β of 0.584 down to a multivariate β of 0.242 within the full SEM confirms that the impact of high-quality training materials is heavily mediated by psychological and institutional processes. Specifically, the powerful indirect path through faculty attitudes ($\beta = 0.201$) indicates that well-designed manuals are effectively useless unless they succeed in transforming lecturer mindsets and building institutional buy-in. When professional development is high-quality and comprehensive, it actively reduces anxiety and shapes positive academic attitudes ($\beta = 0.310$), which in turn acts as a powerful catalyst for high-fidelity curriculum implementation ($\beta = 0.418$). Conversely, the significant direct effect of institutional material infrastructure ($\beta = 0.191$) proves that even the most highly motivated and conceptually advanced lecturer will ultimately be constrained by a lack of basic physical resources, such as missing library reference manuals and outdated laboratory guidelines. These multi-dimensional pathways demonstrate that Uganda's university-level curriculum alignment cannot succeed through isolated interventions; it requires a well-coordinated strategy that simultaneously harmonizes material design, lecturer capacity building, material infrastructure capitalization, and professional academic motivation.

Figure 3: Standardized Path Coefficients for the Structural Equation

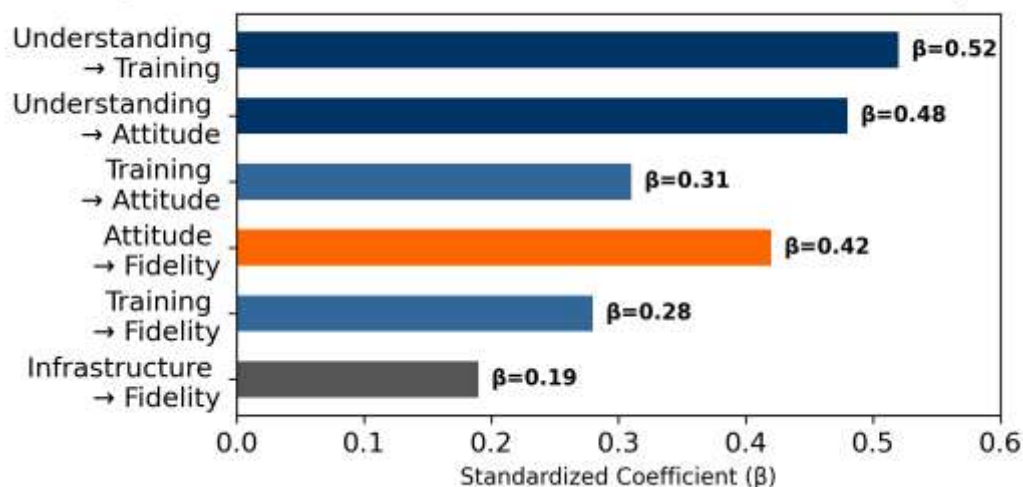


Figure 3: Horizontal path coefficient diagram displaying the standardized structural pulls of readiness variables on university implementation fidelity.

Conclusion of the Study

This study conclusively indicates that the alignment of higher education frameworks with national curriculum reforms has transformed the university sector into a contested terrain of readiness, where widespread disparities in the availability, alignment, and quality of CBC training materials generate inconsistent, non-standardized teacher preparation outcomes. By utilizing an advanced structural equation modeling pipeline, this research has clearly demonstrated that the successful synchronization of university teacher-education programs is not an automatic outcome of lower-level school policy mandates. Instead, it is heavily determined by a complex interaction of structural material design, targeted lecturer professional development, robust library and infrastructure capitalization, and positive faculty buy-in. The empirical findings reveal that a critical lack of national higher education guidelines and a severe shortage of essential physical reference manuals have combined to create profound institutional mismatches among university departments. This mismatch causes teacher-educators to overlay modern competency terminology onto obsolete, content-heavy lecture-style habits. Because the structural models show that training material alignment and professional faculty mindsets are the primary pathways driving implementation fidelity, any higher education strategy that ignores these material and psychological filters is mathematically guaranteed to fail. Ultimately, unless the National Council for Higher Education (NCHE) and university administrations take immediate, well-coordinated steps to resolve these structural and material bottlenecks, the massive national investments in the CBC reform will fail to achieve the core goal of producing graduate teachers capable of building a modern, skills-focused national workforce.

Recommendations

Regulatory Update and Framework Realignment: The National Council for Higher Education (NCHE), in close collaboration with the National Curriculum Development Centre (NCDC), should institute a mandatory regulatory directive forcing all universities to fully update their teacher-training curricula. This structural realignment must replace outdated, content-driven teacher-education frameworks with modernized competency-based modules, ensuring that higher education programs directly reflect the practical pedagogical skills required to deliver the lower secondary CBC framework effectively.

Resource Capitalization and Material Distribution: The Ministry of Education and Sports should launch a targeted capital capitalization campaign focused on higher education instructional material infrastructure. This financial and logistical intervention must guarantee the immediate design, production, and universal distribution of specialized CBC teacher-educator reference manuals, continuous assessment portfolios, and practical training textbooks across all public and private university libraries in Uganda. This will eliminate the material deprivation that currently forces lecturers to rely on traditional, lecture-based methods.

Institutional Capacity Building and Peer-Led Communities: University administrations should establish institutionalized inter-departmental Pedagogical Professional Learning Communities (PPLCs) within their faculties of education to drive peer-led professional growth. By creating structured bi-weekly schedules for collaborative training material design, cross-peer lecture

observations, and collective moderation of competency-focused assessment practices, universities can leverage internal expertise to build positive faculty attitudes, reduce institutional resistance, and harmonize curriculum implementation fidelity nationwide.

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