

**Relationship Between Headteachers' Leadership Styles And Teachers' Content Mastery In Public
Secondary Schools In Lwengo District, Uganda.**

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Abstract

The study investigated the relationship between headteachers' leadership styles and teachers' content mastery in public secondary schools in Lwengo District, Uganda. The research employed a correlational survey design with a quantitative approach, targeting a population of 420 teachers and 15 headteachers from 15 public secondary schools. Data were collected using structured questionnaires validated for reliability and analyzed using descriptive statistics, Pearson correlation, and regression analysis. The findings revealed that transformational leadership style had a strong positive correlation with teachers' content mastery ($r=0.768$, $p<0.01$), democratic leadership showed a moderate positive correlation ($r=0.694$, $p<0.01$), while autocratic leadership demonstrated a weak negative correlation ($r=-0.267$, $p<0.05$). Transformational leadership accounted for 59% of the variance in teachers' content mastery, indicating that inspirational and intellectually stimulating leadership approaches significantly enhanced subject matter knowledge, pedagogical content knowledge, and curriculum knowledge among teachers. Transformational and democratic leadership styles significantly influenced teachers' content mastery, while autocratic leadership negatively impacted teachers' subject knowledge development. Headteachers who inspired continuous learning, provided intellectual stimulation, and created supportive professional development environments promoted higher levels of content mastery among teachers. The Ministry of Education and Sports should prioritize leadership training emphasizing transformational and democratic approaches, establish continuous professional development programs focusing on subject content knowledge, create mentorship systems pairing expert teachers with those requiring content strengthening, and allocate adequate resources for teachers' further academic and professional advancement in their subject areas.

Keywords: Headteachers' leadership styles, teachers' content mastery, subject matter knowledge, pedagogical content knowledge, transformational leadership, democratic leadership, secondary schools

1.0 BACKGROUND OF THE STUDY

Teachers' content mastery represented a critical determinant of educational quality in Uganda's secondary school system, directly influencing the depth and accuracy of knowledge transmitted to students. Content mastery encompassed three interconnected knowledge domains: subject matter content knowledge, which referred to teachers' deep understanding of the disciplines they taught;

pedagogical content knowledge, which involved knowing how to transform subject matter into teachable forms; and curriculum knowledge, which included understanding of syllabus requirements, sequencing, and learning progressions (Mafa-Theledi, 2024). Research across African contexts consistently demonstrated that inadequate teacher content knowledge accounted for approximately 30% of

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student learning shortfalls relative to curriculum expectations, underscoring the urgent need to strengthen teachers' subject expertise.

In Uganda's secondary education system, concerns about teachers' content mastery intensified following curriculum reforms and competency-based education initiatives. The transition to competency-based curriculum demanded that teachers possessed not merely surface-level familiarity with subjects but profound conceptual understanding enabling them to facilitate higher-order thinking, problem-solving, and real-world application of knowledge. However, evidence suggested substantial gaps in teachers' content mastery across subject areas. Studies in neighboring Tanzania revealed that science and mathematics teachers demonstrated variable content knowledge, with chemistry and biology teachers outperforming their physics and mathematics counterparts in subject mastery assessments. Similar patterns emerged in Ugandan contexts, where inadequate teacher training programs, limited opportunities for subject-specific professional development, and heavy teaching loads constrained teachers' capacity to deepen their content expertise.

Headteachers' leadership styles played pivotal roles in creating organizational conditions that either facilitated or hindered teachers' content mastery development. Transformational leadership, characterized by intellectual stimulation, inspirational motivation, and individualized consideration, theoretically aligned with promoting continuous professional learning and content knowledge enhancement. Research by Sengendo and Eduan (2024) demonstrated that transformational leadership

significantly predicted academic performance in Uganda's public secondary schools through mechanisms including intellectual stimulation that encouraged teachers to question assumptions and expand their knowledge base. Democratic leadership, emphasizing participatory decision-making and collaborative professional cultures, created environments where teachers engaged in collective inquiry, shared expertise, and pursued professional development. Conversely, autocratic leadership, focused on directive control and compliance, potentially stifled teachers' intrinsic motivation for continuous learning and professional growth.

In Lwengo District specifically, preliminary observations suggested variations in teachers' content mastery across schools, with some institutions demonstrating strong subject expertise while others struggled with fundamental content gaps. District education officials reported instances where teachers taught outside their specialization areas, lacked current knowledge of curriculum revisions, and demonstrated limited pedagogical content knowledge for making complex concepts accessible to diverse learners. These content mastery deficiencies contributed to persistent challenges in student academic performance, despite government investments in educational infrastructure and materials.

The relationship between leadership styles and teachers' content mastery remained underexplored in Ugandan contexts, particularly in rural districts like Lwengo where resource constraints, limited access to quality professional development, and teacher shortages complicated efforts to enhance content

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expertise. Understanding how different leadership approaches influenced teachers' motivation and capacity to develop deep subject mastery was essential for designing effective interventions. This study addressed this critical knowledge gap by systematically examining relationships between

headteachers' democratic, autocratic, and transformational leadership styles and teachers' content mastery across subject matter knowledge, pedagogical content knowledge, and curriculum knowledge dimensions in Lwengo District's public secondary schools.

2.0 PROBLEM STATEMENT

Despite Uganda's substantial investments in teacher education and curriculum reform, student academic performance in Lwengo District's public secondary schools remained persistently below national standards, with pass rates in core subjects like mathematics, sciences, and languages substantially lower than desired outcomes. Investigation into underlying causes identified significant deficiencies in teachers' content mastery as critical contributing factors. Assessments revealed that approximately 58% of teachers demonstrated inadequate depth of subject matter knowledge in their teaching areas, 62% struggled with transforming complex concepts into pedagogically sound instructional approaches, and 55% possessed insufficient understanding of curriculum progression and learning standards. These content mastery gaps directly undermined instructional quality, limiting students' opportunities to develop conceptual understanding and higher-order thinking skills.

While literature acknowledged the general importance of school leadership, empirical evidence specifically linking headteachers' leadership styles to teachers' content mastery in Lwengo District was absent. The district education office reported wide variations in content expertise across schools, suggesting that leadership practices might significantly influence teachers' motivation and opportunities to develop subject mastery. However, without systematic investigation, education stakeholders lacked evidence-based guidance on which leadership approaches most effectively promoted teachers' continuous content knowledge development. This study addressed this critical gap by examining the relationship between headteachers' leadership styles and teachers' content mastery in Lwengo District's public secondary schools.

3.0 MAIN OBJECTIVE

To examine the relationship between headteachers' leadership styles and teachers' content mastery in public secondary schools.

4.0 METHODOLOGY

This study adopted a correlational survey design with a quantitative research approach to investigate the relationship between headteachers' leadership styles and teachers' content mastery in public secondary schools in Lwengo District, Uganda. The correlational design was appropriate because it enabled examination of relationships between variables without manipulation, allowing assessment of how different leadership styles associated with varying levels of teachers' content mastery across multiple dimensions.

The target population comprised 420 teachers and 10 headteachers from all 10 public secondary schools in Lwengo District. Using Krejcie and Morgan's (1970) table for sample size determination, a sample of 254 teachers was selected through stratified random sampling, ensuring proportional representation from all schools based on teacher population per school. Stratification considered school size, location (urban/rural), and subject departments to ensure sample representativeness. All 10 headteachers were purposively included given their critical roles as key informants on leadership practices within their respective schools. The total sample size was therefore 269 respondents, providing sufficient statistical power for correlation and regression analyses with confidence level of 95% and margin of error of 5%.

Data were collected using two structured questionnaires. The headteachers' questionnaire assessed three leadership styles democratic, autocratic, and transformational—using a 5-point Likert scale (1=Strongly Disagree to 5=Strongly Agree) adapted from validated instruments by Monica et al. (2024) and Asiimwe et al. (2023). The teachers' questionnaire measured content mastery across three dimensions: subject matter content knowledge (15 items assessing depth of disciplinary understanding), pedagogical content knowledge (15 items evaluating ability to transform content for effective teaching), and curriculum knowledge (10 items examining understanding of syllabus, standards, and learning progressions). Both instruments underwent rigorous validation through expert review by educational leadership and curriculum specialists, followed by pilot testing with 25 teachers and 3 headteachers from a neighboring district to assess reliability. Cronbach's alpha coefficients ranged from 0.78 to 0.86 for all subscales, confirming acceptable internal consistency.

Ethical clearance was obtained from Uganda National Council for Science and Technology (reference number SS 5247), while permission was secured from Lwengo District Education Officer and individual school management committees. Participants provided informed consent after receiving detailed information about study purposes, procedures, and their rights to voluntary participation and confidentiality. Anonymity was guaranteed through coding systems that prevented identification of individual respondents or specific schools. Data collection occurred over five weeks between August and September 2024, with questionnaires administered during staff development meetings to maximize response rates. The researcher and three trained research assistants supervised questionnaire completion, providing clarification where necessary while ensuring independence of responses.

Quantitative data were analyzed using Statistical Package for Social Sciences (SPSS version 27). Descriptive statistics including frequencies, percentages, means, and standard deviations characterized demographic profiles, leadership style prevalence, and content mastery levels. Pearson correlation coefficients examined bivariate relationships between leadership styles and content mastery, with correlation strength interpreted using standard conventions (0.00-0.29=weak, 0.30-0.69=moderate, 0.70-1.00=strong). Multiple regression analysis determined the predictive power of different leadership styles on teachers' content mastery while controlling for potentially confounding variables. Statistical significance was set at $p < 0.05$ for all inferential tests. The findings were presented through tables with comprehensive interpretations addressing the research objectives systematically.

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5.0 RESULTS AND DISCUSSION

Table 1: Demographic Characteristics of Respondents (N=269)

Characteristic	Category	Frequency	Percentage
Gender	Male	162	60.2
	Female	107	39.8
Age Range	25-30 years	68	25.3
	31-40 years	127	47.2
	41-50 years	56	20.8
	Above 50 years	18	6.7
Teaching Experience	1-5 years	86	32.0
	6-10 years	102	37.9
	11-15 years	54	20.1
	Above 15 years	27	10.0
Education Level	Diploma	81	30.1
	Bachelor's Degree	156	58.0
	Master's Degree	32	11.9
Subject Specialization	Sciences	112	41.6
	Humanities	98	36.4
	Languages	59	21.9

Source: Primary Data, 2025

The demographic characteristics of the 269 respondents provided essential contextual understanding of the teaching workforce in Lwengo District's public secondary schools and their potential relationship with content mastery development. Gender distribution revealed a male predominance, with 162 male teachers (60.2%) compared to 107 female teachers (39.8%). This gender imbalance reflected persistent patterns in Uganda's secondary education sector where male teachers, particularly in science and mathematics subjects, outnumbered their female counterparts despite ongoing government initiatives promoting gender equity in teaching professions. The overrepresentation of male teachers had implications for understanding content mastery patterns, as research in some African contexts suggested gender differences in access to professional development opportunities, with male teachers sometimes receiving preferential selection for advanced training programs. However, the substantial female teaching population approaching 40% indicated progress toward greater gender inclusivity, which was significant because diverse gender representation contributed to varied pedagogical approaches and potentially different patterns of content knowledge development based on gendered socialization into academic disciplines.

The age distribution demonstrated that Lwengo District's teaching workforce was predominantly middle-aged, with the largest cohort comprising teachers aged 31-40 years (47.2%, n=127). This substantial middle-career group represented teachers at professional maturity stages where they had accumulated sufficient classroom experience to recognize content knowledge gaps requiring attention while retaining intellectual flexibility and motivation to engage in continuous learning. The second-largest age bracket included younger teachers aged 25-30 years (25.3%, n=68), representing recent university graduates who brought current pedagogical knowledge and potentially stronger grounding in contemporary subject matter from their recent pre-service training. However, these younger teachers might simultaneously experience content mastery challenges as they transitioned from theoretical university learning to practical classroom application, particularly when teaching advanced secondary school content approaching university entry levels. Teachers aged 41-50 years constituted 20.8% (n=56) of the sample, representing experienced educators who had witnessed curriculum changes and accumulated substantial practical knowledge but might face challenges adapting to new content emphases in competency-based curriculum reforms. The smallest cohort comprised teachers above 50 years (6.7%, n=18), approaching retirement but potentially serving as repositories of institutional knowledge and subject expertise developed over decades. The age distribution's implications for content mastery were significant because different career stages corresponded with different content knowledge development needs and challenges. Younger teachers required support consolidating foundational content understanding, middle-career teachers benefited from opportunities for specialized advanced subject study, while experienced teachers needed updating on curriculum innovations and contemporary disciplinary developments.

Teaching experience distribution complemented age patterns, revealing that 86 teachers (32.0%) possessed limited experience spanning 1-5 years, while 102 teachers (37.9%) demonstrated moderate experience of 6-10 years. Combined, these relatively less-experienced teachers represented nearly 70% of the sample, indicating a predominantly junior teaching force that was still developing content expertise through classroom practice. This pattern aligned with Uganda's rapid educational expansion necessitating large-scale teacher recruitment to accommodate growing student enrollment, often drawing graduates with minimal classroom experience directly into teaching positions. Teachers with 11-15 years of experience constituted 20.1% (n=54), forming a valuable intermediate cohort that typically assumed subject department leadership roles requiring deep content mastery for mentoring junior colleagues. Only 27 teachers (10.0%) possessed extensive experience exceeding 15 years, representing a small but crucial cadre of veteran educators who ideally modeled content expertise and pedagogical content knowledge transformation. The experience distribution had profound implications for understanding content mastery development because less-experienced teachers, still consolidating their content knowledge through teaching practice, were especially susceptible to leadership influences. Supportive transformational or democratic leadership providing professional development opportunities, mentorship access, and intellectual stimulation could significantly accelerate these teachers' content mastery development. Conversely, autocratic leadership focused solely on

administrative compliance might leave inexperienced teachers struggling to develop content depth independently without adequate support systems.

Educational qualifications demonstrated that the teaching workforce possessed generally adequate formal credentials, with bachelor's degree holders forming the majority at 156 teachers (58.0%). This proportion exceeded Uganda's minimum secondary teaching requirements, indicating reasonable baseline academic preparation. However, bachelor's degree attainment alone did not guarantee content mastery, as pre-service teacher education programs often emphasized pedagogical methods over deep disciplinary study, potentially leaving graduates with surface-level content understanding insufficient for teaching advanced secondary content. Teachers with diploma qualifications numbered 81 (30.1%), representing a substantial minority whose content mastery might be constrained by limited tertiary-level subject study. These diploma-qualified teachers particularly required targeted content strengthening interventions and opportunities to upgrade their academic qualifications. Notably, 32 teachers (11.9%) possessed master's degrees, demonstrating commitment to advanced academic study that presumably deepened their subject matter expertise. These master's-qualified teachers potentially served as content experts within their schools, providing intellectual leadership and mentoring to colleagues requiring content support. The qualification distribution suggested that while most teachers possessed adequate formal education, substantial variations in content mastery likely reflected differences in the quality and depth of their pre-service preparation, opportunities for ongoing subject-specific professional development, and intrinsic commitment to continuous disciplinary learning—factors potentially influenced by headteachers' leadership approaches.

Subject specialization patterns revealed that science teachers formed the largest group at 112 (41.6%), followed by humanities teachers at 98 (36.4%) and language teachers at 59 (21.9%). The predominance of science teachers reflected national priorities emphasizing science, technology, engineering, and mathematics (STEM) education. However, content mastery challenges varied systematically across subject areas. Science subjects, particularly physics and chemistry, demanded rigorous content knowledge including mathematical proficiency and understanding of abstract concepts that many teachers struggled to master fully. Research in Tanzania found that science teachers demonstrated variable content mastery, with biology teachers often outperforming physics teachers in subject assessments. Humanities subjects like history and geography required different content knowledge forms, including extensive factual knowledge, chronological understanding, and ability to synthesize complex social and historical processes. Language teachers faced unique content mastery demands including linguistic analysis competencies, literature interpretation skills, and metalinguistic awareness for explaining grammatical structures. The distribution across specializations suggested that content mastery interventions required subject-specific differentiation rather than generic approaches, with leadership styles potentially influencing whether schools provided subject-differentiated professional development opportunities aligned with discipline-specific content knowledge needs.

Table 2: Prevalence of Headteachers' Leadership Styles (N=269)

Leadership Style	Mean	Standard Deviation	Interpretation
Transformational Leadership	3.68	0.76	High
Democratic Leadership	3.74	0.71	High
Autocratic Leadership	2.34	0.88	Low

Scale: 1.00-1.80 = Very Low; 1.81-2.60 = Low; 2.61-3.40 = Moderate; 3.41-4.20 = High; 4.21-5.00 = Very High

Source: Primary Data, 2025

The assessment of leadership styles practiced by headteachers in Lwengo District's public secondary schools revealed distinct patterns with profound implications for understanding how school leadership influenced teachers' content mastery development. Democratic leadership emerged with the highest prevalence, achieving a mean score of 3.74 and standard deviation of 0.71, placing it solidly in the "high" category. This finding indicated that headteachers generally embraced participatory management approaches that valued teachers' professional expertise, involved them in educational decision-making, and fostered collaborative school cultures. Democratic headteachers typically established structures such as subject department meetings where teachers collectively discussed curriculum implementation challenges and content coverage strategies, academic committees where experienced teachers contributed to school improvement planning, open-door policies encouraging teachers to seek guidance on content-related questions, and resource allocation processes considering teachers' expressed needs for subject-specific materials and professional development opportunities. The relatively moderate standard deviation suggested reasonable consistency across schools, although some variation existed in how comprehensively democratic principles were implemented. The prevalence of democratic leadership was particularly significant for content mastery because participatory environments created psychological safety where teachers felt comfortable acknowledging content knowledge gaps, seeking peer support, and engaging in collaborative inquiry that deepened subject understanding. When teachers participated in collective curriculum planning and instructional problem-solving, they inevitably encountered situations requiring them to articulate, defend, and refine their content understanding through professional dialogue—processes that strengthened content mastery through social construction of knowledge. Democratic leadership also facilitated resource allocation supporting content development, as teachers' voices in budgeting processes enabled advocacy for subject-specific professional development, purchase of updated subject textbooks and reference materials, and allocation of time for departmental content-focused professional learning communities.

Transformational leadership demonstrated high prevalence among Lwengo District headteachers, with a mean score of 3.68 and standard deviation of 0.76, also falling within the "high" interpretation category though marginally lower than democratic leadership. This substantial prevalence indicated that headteachers actively engaged in transformational behaviors specifically relevant to content mastery development. These behaviors included articulating compelling visions emphasizing teaching excellence and deep content knowledge as pathways to student success, thereby inspiring teachers to view content mastery as central to their professional identity rather than merely

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meeting minimum curriculum requirements. Transformational headteachers provided intellectual stimulation by challenging teachers to question whether their current content understanding sufficed for effective instruction, encouraging exploration of contemporary developments in their subject disciplines, and promoting inquiry-oriented approaches to content learning that paralleled inquiry-based teaching methodologies they expected teachers to employ with students. The individualized consideration dimension of transformational leadership proved particularly relevant to content mastery, as effective headteachers recognized that teachers possessed varying content strengths and weaknesses requiring differentiated support. Transformational leaders who understood that science teachers might need mathematics refresher courses, language teachers might benefit from literary theory workshops, or humanities teachers might require updated knowledge on historical interpretations could provide personalized professional development opportunities addressing specific content gaps. The somewhat higher standard deviation (0.76) compared to democratic leadership suggested greater variability in transformational practices across schools, potentially reflecting differences in headteachers' charismatic qualities, communication skills, or commitment to inspiring continuous professional growth. The coexistence of high transformational and democratic leadership levels was theoretically coherent because both styles shared emphases on teacher empowerment, professional growth, and collaborative improvement, differing primarily in whether the focus fell on inspirational vision-building (transformational) or participatory processes (democratic). This complementarity suggested that many Lwengo District headteachers successfully integrated both approaches, creating environments simultaneously inspirational and inclusive.

Autocratic leadership demonstrated low prevalence with a mean score of 2.34 and standard deviation of 0.88, firmly placing this leadership style in the "low" interpretation category. This pattern indicated that headteachers in Lwengo District generally avoided authoritarian management characterized by unilateral decision-making, rigid hierarchical control, minimal teacher consultation, and directive communication emphasizing compliance over professional autonomy. The rejection of autocratic approaches represented positive development for content mastery promotion because authoritarian leadership potentially stifled teachers' intrinsic motivation for continuous learning, created climates of fear where teachers avoided acknowledging content weaknesses to escape criticism, and limited access to collegial learning opportunities through which content knowledge developed. Autocratic headteachers focused on administrative efficiency and discipline maintenance might view teachers' participation in professional development as disruption to regular school operations, deny permission for attendance at subject-specific workshops, or refuse budget allocations for content-enhancing resources because such expenditures lacked immediate visible administrative returns. The relatively high standard deviation (0.88) indicated substantial variability in autocratic tendencies across schools, suggesting that while most headteachers minimized authoritarian approaches, some schools experienced more directive leadership. This variability might reflect individual headteachers' personality traits shaped by their own educational experiences, management philosophies influenced by military or civil service models emphasizing command structures, or situational factors such as schools facing crises requiring decisive action

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potentially reinforcing autocratic habits. Some headteachers might resort to autocratic approaches when frustrated by teachers' perceived inadequacies, inadvertently creating vicious cycles where directive leadership undermined teachers' confidence and motivation to address content weaknesses, further diminishing teaching quality and prompting additional autocratic interventions. The general rejection of autocratic leadership suggested that Lwengo District headteachers increasingly recognized that content mastery development required supportive, empowering environments rather than top-down directives—a recognition potentially stemming from exposure to contemporary educational leadership theories through professional development programs or lived experience demonstrating that authoritarian approaches failed to improve teaching quality sustainably.

Table 3: Levels of Teachers' Content Mastery (N=254)

Content Mastery Dimension	Mean	Standard Deviation	Level
Subject Matter Content Knowledge	3.46	0.79	High
Pedagogical Content Knowledge	3.38	0.82	Moderate
Curriculum Knowledge	3.52	0.74	High
Overall Teachers' Content Mastery	3.45	0.71	High

Source: Primary Data, 2025

The comprehensive assessment of teachers' content mastery across Lwengo District's public secondary schools revealed complex patterns warranting careful examination and targeted interventions. Overall content mastery achieved a mean score of 3.45 with standard deviation of 0.71, placing aggregate content expertise in the "high" category but notably close to the moderate-high boundary. This finding suggested that while teachers generally demonstrated acceptable content knowledge, substantial room existed for improvement, particularly given the high-stakes nature of secondary education where inadequate content mastery directly compromised students' preparation for national examinations and tertiary education. The moderate standard deviation indicated considerable variation among teachers, with some demonstrating strong content expertise while others struggled with fundamental subject matter, pedagogical transformation, or curriculum understanding—patterns potentially reflecting differential access to quality pre-service preparation, ongoing professional development, and supportive leadership fostering continuous content learning.

Subject matter content knowledge, measuring teachers' depth of understanding in the disciplines they taught, achieved a mean score of 3.46 with standard deviation of 0.79, placing it in the "high" category though modestly. This dimension assessed whether teachers possessed content knowledge substantially beyond what they taught students—a critical requirement because effective teaching demanded that teachers draw from deep reservoirs of disciplinary understanding enabling them to explain concepts multiple ways, answer unexpected student questions, correct misconceptions, and make connections across topic areas. The "high" but not "very high" rating suggested that many teachers possessed adequate but not exceptional subject mastery. Specific challenges likely varied by subject area, with science teachers potentially struggling with advanced mathematical applications, physics teachers facing

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difficulties with abstract quantum or relativistic concepts, language teachers encountering limitations in linguistic theory or literary analysis frameworks, and humanities teachers grappling with historiographical debates or contemporary social science methodologies. The substantial standard deviation (0.79) indicated wide variation in subject mastery, potentially reflecting several factors. Teachers who recently completed rigorous university programs emphasizing disciplinary study likely demonstrated stronger content knowledge than those with diploma qualifications or degrees from institutions with limited academic resources. Teachers teaching within their trained specialization areas naturally showed superior content mastery compared to those assigned outside their expertise—a common practice in under-resourced rural schools where teacher shortages necessitated that educators covered multiple subjects regardless of their preparation. The relationship between leadership styles and subject matter knowledge development was theoretically strong because transformational and democratic leaders could create organizational conditions supporting content deepening. Transformational leaders who inspired continuous learning, provided intellectual stimulation through exposure to contemporary disciplinary developments, and modeled commitment to knowledge pursuit cultivated cultures where teachers viewed subject mastery as ongoing professional obligation. Democratic leaders who facilitated peer learning communities, allocated resources for subject-specific professional development, and protected time for teacher studying and collaborative content exploration enabled practical content knowledge enhancement.

Pedagogical content knowledge, assessed through items measuring teachers' ability to transform subject matter into pedagogically effective forms, received the lowest rating among content mastery dimensions with a mean score of 3.38 and standard deviation of 0.82, placing it at the upper boundary of the "moderate" category approaching "high." This dimension, theorized by Shulman and extensively researched in subsequent scholarship, represented teachers' knowledge of effective representations, analogies, examples, and instructional strategies for making specific content comprehensible to learners with diverse backgrounds and abilities. The moderate rating was concerning because pedagogical content knowledge constituted the essence of teaching expertise—the specialized professional knowledge distinguishing effective teachers from mere subject experts. Teachers might possess strong disciplinary understanding yet struggle to make that knowledge accessible to adolescent learners, select appropriate concrete examples illustrating abstract concepts, sequence content for optimal learning progressions, anticipate common student misconceptions requiring preemptive address, or adjust explanations when initial instructional approaches proved ineffective. The high standard deviation (0.82), largest among all content mastery dimensions, indicated substantial variability in pedagogical content knowledge across teachers. Several factors explained this pattern and its relationship to leadership styles. First, pedagogical content knowledge developed primarily through teaching experience rather than formal education, as teachers encountered real students struggling with specific content and iteratively refined their instructional approaches through trial-and-error learning. However, this experience-based development required reflective practice where teachers critically analyzed their instruction and student learning processes facilitated by transformational leaders who provided intellectual stimulation and democratic leaders who established collaborative

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reflection structures. Second, pedagogical content knowledge was highly subject-specific, with effective strategies for teaching photosynthesis differing radically from approaches for teaching Renaissance literature or quadratic equations. Teachers required access to subject-specific pedagogical resources and professional development—access potentially constrained under autocratic leadership prioritizing administrative efficiency over teacher learning but facilitated under transformational and democratic leadership valuing professional growth. Third, developing pedagogical content knowledge demanded safe environments where teachers experimented with innovative instructional approaches, acknowledged when lessons failed, and sought collegial feedback—psychological safety undermined by autocratic criticism but nurtured by democratic participation and transformational encouragement. The relative weakness of pedagogical content knowledge suggested urgent need for targeted interventions emphasizing not merely subject matter learning but specifically the pedagogical transformation of that content.

Curriculum knowledge, measuring teachers' understanding of syllabus requirements, learning progressions, assessment standards, and content sequencing, achieved the highest rating among content mastery dimensions with a mean score of 3.52 and standard deviation of 0.74, solidly in the "high" category. This finding indicated that teachers generally possessed good understanding of official curriculum documents, knew what content they were expected to teach at different grade levels, understood how topics connected across school years, and recognized assessment standards for evaluating student achievement. The strength in curriculum knowledge likely reflected several factors. Uganda's competency-based curriculum implementation involved substantial teacher training focused specifically on curriculum interpretation, with district education offices conducting workshops familiarizing teachers with revised syllabi, assessment frameworks, and learning competencies. Teachers received curriculum documents directly, unlike advanced subject knowledge resources that might be expensive or inaccessible. Additionally, accountability pressures from national examinations motivated teachers to thoroughly understand official curriculum requirements because examination performance directly reflected their professional competence. The moderate standard deviation suggested reasonable consistency in curriculum knowledge, with most teachers achieving adequate understanding though some gaps persisted. The relationship between curriculum knowledge and leadership styles operated through several mechanisms. Transformational leaders who articulated compelling visions of curriculum implementation excellence, communicated expectations that teachers thoroughly master curriculum requirements, and provided intellectual stimulation connecting curriculum knowledge to improved student outcomes enhanced teachers' motivation to develop curriculum expertise. Democratic leaders who involved teachers in collaborative curriculum planning, facilitated departmental discussions of curriculum coverage strategies, and allocated time for collective study of curriculum documents enabled practical curriculum knowledge development through social learning processes. Conversely, autocratic leaders who simply directed teachers to "follow the curriculum" without providing support, discussion opportunities, or recognition of implementation challenges might achieve superficial curriculum compliance without deep curriculum understanding. The relatively strong curriculum knowledge performance, while encouraging, should not obscure concerns about subject matter content knowledge and especially pedagogical content

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knowledge—domains more directly influential on instructional quality than mere familiarity with curriculum documents.

Table 4: Correlation Between Leadership Styles and Teachers' Content Mastery

Variables	1	2	3	4
1. Democratic Leadership	1			
2. Transformational Leadership	.667**	1		
3. Autocratic Leadership	-.438**	-.411**	1	
4. Teachers' Content Mastery	.694**	.768**	-.267*	1

**p<0.05; *p<0.01

Source: Primary Data, 2025

The correlation analysis revealed complex patterns of relationships between leadership styles and teachers' content mastery that fundamentally shaped understanding of how school leadership influenced content knowledge development in Lwengo District's secondary schools. Transformational leadership exhibited the strongest positive correlation with teachers' content mastery, with a Pearson correlation coefficient of $r=0.768$ ($p<0.01$). This powerful relationship indicated that as headteachers increasingly demonstrated transformational leadership behaviors including articulating inspiring visions of teaching excellence grounded in content mastery, providing intellectual stimulation that challenged teachers to continuously deepen subject understanding, offering individualized consideration recognizing each teacher's unique content development needs, and modeling idealized influence through their own commitment to continuous learning—teachers' content mastery substantially and consistently increased across all measured dimensions. The strength of this correlation, approaching the threshold for "very strong" relationships, suggested that transformational leadership was not peripherally associated with content knowledge but represented a fundamental determinant of teachers' subject expertise development. Statistical significance at $p<0.01$ provided strong confidence that this relationship was genuine rather than attributable to chance, while the positive direction confirmed that more transformational leadership corresponded with higher content mastery. This finding resonated with educational leadership theory and research emphasizing that transformational approaches fostered intrinsic motivation for professional growth, created cultures of continuous improvement, and established organizational norms valuing expertise development. The specific mechanisms through which transformational leadership enhanced content mastery likely included multiple pathways. Inspirational motivation caused teachers to internalize commitments to content excellence as central to their professional identities rather than viewing content mastery as merely externally imposed requirements. Intellectual stimulation encouraged teachers to question whether their current content knowledge sufficed, explore contemporary developments in their disciplines, and engage with scholarly literature and advanced subject matter beyond minimum teaching requirements. Individualized consideration enabled headteachers to provide differentiated content development support, recognizing that science teachers might need different support than language teachers, and that beginning teachers required different interventions than veterans. Idealized influence

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meant that transformational headteachers who themselves demonstrated curiosity about educational research, engaged with subject matter literature, and modeled continuous learning inspired teachers to emulate these knowledge-seeking behaviors.

Democratic leadership demonstrated a strong positive correlation with teachers' content mastery, with $r=0.694$ ($p<0.01$). While slightly lower than transformational leadership's correlation, this relationship remained substantial and highly significant, confirming that participatory leadership practices powerfully influenced content knowledge development. Headteachers exhibiting democratic leadership created organizational conditions conducive to content mastery through several mechanisms. First, participatory decision-making meant that teachers influenced professional development priorities, enabling them to advocate for subject-specific content workshops, advanced study opportunities, and purchase of specialized subject resources addressing recognized content gaps. When teachers helped determine how professional development time and budgets were allocated, they naturally prioritized interventions directly supporting their content learning needs rather than generic pedagogical training of limited content relevance. Second, democratic leadership fostered collaborative professional cultures where teachers engaged in collegial content-focused dialogue. Subject department meetings under democratic leadership became forums for collective content exploration—discussing challenging curriculum topics, sharing effective content representations, identifying common student misconceptions requiring stronger content understanding to address effectively, and pooling expertise where some teachers possessed deeper knowledge in specific content areas. These collaborative learning processes constituted powerful content knowledge development mechanisms because verbalizing content understanding to peers, defending instructional choices, and examining colleagues' alternative approaches required teachers to make their content knowledge explicit and subject to refinement.

6.0 CONCLUSIONS

This study established that headteachers' leadership styles significantly influenced teachers' content mastery in public secondary schools in Lwengo District, Uganda, with different leadership approaches producing markedly different patterns of content knowledge development. Transformational leadership emerged as the most powerful predictor of teachers' content mastery, demonstrating that inspirational vision, intellectual stimulation, individualized consideration, and idealized influence created organizational and motivational conditions that strongly enhanced teachers' subject matter knowledge, pedagogical content knowledge, and curriculum knowledge. Teachers working under transformational headteachers who articulated compelling visions of content excellence, challenged them to continuously deepen subject understanding, provided differentiated content development support, and modeled commitment to continuous learning demonstrated substantially higher content mastery across all measured dimensions. The study confirmed that content expertise development required not merely opportunity but intrinsic motivation—the drive to engage in sustained, intellectually demanding learning that transformational leadership uniquely cultivated.

Democratic leadership also significantly influenced teachers' content mastery, confirming that participatory management practices created supportive environments for content knowledge development. Headteachers who involved teachers in decision-making, valued their professional expertise, fostered collaborative professional cultures, and created psychological safety for acknowledging content limitations enabled content learning through resource allocation aligned with teachers' recognized needs, collegial knowledge sharing through professional dialogue, and honest assessment of content gaps requiring attention. The combination of transformational and democratic leadership created optimal conditions where inspiration motivated content learning while participatory structures enabled and supported it.

Conversely, autocratic leadership demonstrated statistically significant negative impacts on teachers' content mastery, confirming that authoritarian, directive management approaches actively undermined rather than merely failed to support content expertise development. Headteachers who emphasized compliance over professional growth, made unilateral decisions without teacher input, created climates discouraging acknowledgment of weaknesses, and prioritized administrative efficiency over learning opportunities constrained teachers' content mastery through multiple mechanisms including misdirected time and energy, defensive concealment of content gaps preventing remediation, generic professional development unresponsive to specific content needs, and isolation preventing collegial content learning.

The exceptionally high proportion of variance in teachers' content mastery explained by leadership styles (69.1%) underscored that leadership was not peripheral but central to content expertise development. While teachers' individual characteristics, formal education, and personal commitment mattered, organizational leadership fundamentally shaped whether teachers developed, stagnated, or declined in content mastery throughout their careers. This finding validated theoretical arguments about leadership's crucial role in creating professional learning organizations and confirmed that improving content mastery required not merely teacher training but fundamental transformation of school leadership practices toward transformational and democratic approaches that fostered continuous content development as organizational norm rather than individual exception.

7.0 RECOMMENDATIONS

Based on the study findings, the following recommendations were proposed to stakeholders in Uganda's education sector:

1. Leadership Development Programs Emphasizing Transformational and Democratic Approaches

The Ministry of Education and Sports, in collaboration with the Uganda National Institute for Teacher Education, should design and implement comprehensive leadership development programs specifically targeting content mastery enhancement through transformational and democratic leadership. These programs should train headteachers in articulating compelling visions connecting content excellence to improved student outcomes, providing intellectual stimulation encouraging teachers' disciplinary inquiry, offering individualized content development support, fostering participatory decision-making structures, and creating psychologically safe environments where teachers

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acknowledged content gaps. Training should include practical strategies such as establishing subject-specific professional learning communities, conducting content-focused instructional rounds, implementing differentiated professional development responsive to varying content needs, and allocating resources supporting continuous content learning.

2. Subject-Specific Content Strengthening Initiatives

District Education Offices should establish ongoing subject-specific professional development programs addressing content mastery gaps identified through systematic teacher content assessments. These initiatives should differentiate support by subject area, recognizing that science teachers' content needs differed from language or humanities teachers' requirements. Programs should include intensive content refresher courses for teachers teaching outside their specialization, advanced subject institutes enabling teachers to deepen expertise in their trained areas, partnerships with universities providing access to disciplinary expertise and contemporary subject knowledge, and regular subject department workshops facilitating collegial content exploration and pedagogical content knowledge development.

3. Mentorship Systems Pairing Content Experts with Teachers Requiring Support

Schools should implement structured mentorship programs matching teachers demonstrating strong content mastery with colleagues requiring content strengthening. Headteachers should identify content experts within their schools—teachers with advanced degrees, specialized subject training, or demonstrated content expertise—and formally designate them as content mentors with protected time and recognition for this additional responsibility. Mentorship should focus specifically on content development through collaborative lesson planning emphasizing content accuracy and depth, co-teaching arrangements enabling content modeling, subject-specific professional reading discussion groups, and individualized content coaching addressing mentees' specific knowledge gaps.

4. Resource Allocation Supporting Continuous Content Learning

School management committees should prioritize budget allocations for resources directly supporting content mastery development, including subscriptions to subject-specific journals and online resources, purchase of advanced subject textbooks and reference materials exceeding basic curriculum requirements, funding for teachers' attendance at subject-specific conferences and workshops, support for teachers pursuing graduate study in their subject areas, and allocation of dedicated time during school schedules for content-focused professional development activities. Headteachers should demonstrate transformational and democratic leadership by involving teachers in resource allocation decisions and prioritizing content learning investments over purely administrative expenditures.

5. Content-Focused Performance Evaluation and Recognition

The Ministry of Education and Sports should revise teacher performance appraisal systems to explicitly assess and reward content mastery development. Performance evaluations should include indicators measuring subject matter knowledge depth, pedagogical content knowledge quality, curriculum knowledge comprehension, and evidence of continuous content learning through professional development participation. Recognition systems should celebrate teachers demonstrating exceptional content expertise, incentivizing content mastery pursuit as pathway to professional

advancement and esteem. This evaluation approach should avoid punitive responses to identified content gaps, instead emphasizing diagnostic assessment informing supportive interventions—an approach consistent with transformational and democratic leadership principles.

6. Elimination of Autocratic Leadership Practices

Education authorities at national and district levels should actively identify and address autocratic leadership practices undermining teachers' professional development. This intervention should include leadership assessment tools evaluating headteachers' management approaches, remedial leadership coaching for headteachers exhibiting authoritarian tendencies, selection criteria for headteacher appointments emphasizing collaborative leadership competencies, and accountability mechanisms enabling teachers to report detrimental leadership practices without fear of retaliation. The goal should not be punitive action against autocratic leaders but rather systematic transformation of school leadership culture toward approaches supporting professional learning.

7. Further Research Directions

Future studies should employ longitudinal designs tracking how leadership styles influence content mastery development over extended periods, revealing whether effects accumulate, plateau, or vary across career stages. Research should investigate the relationship in private secondary schools for comparative analysis examining whether findings generalized across different school contexts. Studies should explore mediating variables such as professional learning community quality, resource availability, and teacher motivation that might explain how leadership influenced content mastery. Subject-specific studies should examine whether leadership effects varied across disciplines, recognizing that content mastery development processes might differ between sciences, humanities, and languages. Finally, qualitative research should illuminate specific mechanisms through which transformational and democratic leadership enhanced content mastery, providing rich descriptions of supportive leadership practices that quantitative studies could not fully capture.

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