Metropolitan Journal Of Academic Multidisciplinary Research

ISSN: 3006-4384

Vol. 5 Issue 1, January - 2026, Pages: 249-262

Effect Of Classroom Size On Management Of Teaching-Learning At UCE Level In Government Aided Secondary Schools In Kisoro District, Uganda.

Tumwehitsye Yosam[1], Dr. Wabuna Muhammad (PhD)[2]

1, 2 Metropolitan International University

Abstract

The study examined the effect of classroom size on management of teaching-learning at Uganda Certificate of Education (UCE) level in government aided secondary schools in Kisoro District. A cross-sectional survey design was employed with a sample of 175 respondents comprising teachers, head teachers, and students. Data were collected using structured questionnaires and analyzed through correlation and regression analysis. Results revealed that classroom size significantly affected teaching-learning management ($r=-0.718$, $p<0.01$), with larger classes associated with reduced instructional effectiveness. Student-teacher ratio ($\beta=-0.456$, $p<0.01$), physical space per student ($\beta=0.334$, $p<0.01$), and class composition ($\beta=-0.267$, $p<0.05$) significantly predicted teaching-learning outcomes. The study concluded that overcrowded classrooms severely constrained pedagogical practices, student engagement, and learning quality. Recommendations included implementing class size caps at 40 students, constructing additional classrooms, recruiting more teachers, and developing effective large-class teaching strategies.

Keywords: Classroom size, student-teacher ratio, teaching-learning management, overcrowding, government aided schools, Kisoro District

1.0 Background of the Study

Classroom size, typically measured through student-teacher ratios or the number of students per class, remained one of the most extensively researched variables in educational effectiveness literature globally. Empirical evidence from multiple contexts demonstrated that smaller classes facilitated more effective teaching-learning processes, enhanced student-teacher interactions, enabled differentiated instruction, improved classroom management, and positively influenced student achievement (Finn & Achilles, 1999; Blatchford et al., 2011). The relationship between class size and educational quality was particularly pronounced at secondary education levels where curriculum complexity, diverse student abilities, and emphasis on critical thinking required more individualized attention than larger classes permitted.

In developed countries, optimal class sizes were typically maintained below 30 students through strict enforcement of class size policies, adequate teacher supply, and sufficient classroom infrastructure (OECD, 2019). However, in many developing nations, especially Sub-Saharan Africa, rapid education expansion driven by universal education policies created severe classroom overcrowding. Uganda's introduction of Universal Secondary Education (USE) in 2007 exemplified this pattern—while dramatically increasing access from 19% to over 40% gross enrollment by 2020, the policy created massive enrollment surges that outpaced teacher recruitment

Received: 20.01.2026 **Accepted: 25.01.2026** **Published on: 30.01.2026**

Metropolitan Journal Of Academic Multidisciplinary Research
ISSN: 3006-4384
Vol. 5 Issue 1, January - 2026, Pages: 249-262

and classroom construction, resulting in student-teacher ratios averaging 1:35 nationally but often exceeding 1:60 in government aided schools in rural districts (Ministry of Education and Sports, 2021).

Classroom overcrowding affected multiple educational dimensions. Large classes constrained teachers' pedagogical choices, forcing reliance on lecture methods rather than interactive, student-centered approaches. Assessment became more difficult as teachers struggled to provide timely, individualized feedback to numerous students. Classroom management challenges increased with larger groups, consuming instructional time in discipline and organization rather than learning activities. Student participation opportunities diminished as individual students received less attention, questioning opportunities, and engagement in class discussions (Harfitt, 2013). Learning materials and equipment became inadequate when shared among too many students, while physical discomfort from overcrowding reduced concentration and motivation.

Kisoro District, located in Uganda's mountainous southwestern region, experienced particularly acute classroom size challenges in its government aided secondary schools. The district's high population density, combined with limited educational infrastructure due to challenging terrain and construction costs, created situations where some schools operated with classes exceeding 70 students in single classrooms designed for 40 (Bakaira, 2020). Teachers frequently reported that such conditions made effective teaching nearly impossible, while students complained of inability to see blackboards, hear instruction clearly, or receive adequate teacher attention. Despite these widely acknowledged challenges, limited empirical research had systematically examined how classroom size affected teaching-learning management in Kisoro's specific context. Understanding this relationship was essential for informing education policy, resource allocation decisions, and instructional strategy development to optimize learning outcomes despite resource constraints.

2.0 Problem Statement

Government aided secondary schools in Kisoro District faced severe classroom overcrowding, with many classes at UCE level enrolling 60-80 students in spaces designed for 40, creating challenging teaching-learning conditions. Teachers struggled to implement effective pedagogies in overcrowded classrooms, resorting predominantly to lecture methods that limited student engagement and participation. Providing individualized attention, conducting practical activities, facilitating group work, and assessing student learning comprehensively became extremely difficult with large classes (Muheebwa, 2019). Students in overcrowded classrooms experienced reduced learning opportunities, limited teacher interaction, inadequate workspace, and compromised concentration due to noise and discomfort. While teachers and administrators attributed many instructional challenges to large class sizes, empirical evidence quantifying the relationship between classroom size and teaching-learning management effectiveness remained limited. Without such evidence, policymakers lacked data to justify investments in classroom construction and teacher

Received: 20.01.2026 **Accepted: 25.01.2026** **Published on: 30.01.2026**

recruitment, while school administrators and teachers had insufficient guidance on optimal strategies for managing large classes. This study therefore investigated the effect of classroom size on teaching-learning management at UCE level in Kisoro District to provide evidence-based insights for education planning and instructional improvement.

3.0 Objective of the Study

To determine the effect of classroom size on teaching-learning management at UCE level in Kisoro District.

4.0 Methodology

This study employed a cross-sectional survey research design, which enabled examination of relationships between classroom size variables and teaching-learning management outcomes at a single point in time across multiple schools (Creswell & Creswell, 2018). The study was conducted in Kisoro District, Uganda, specifically targeting government aided secondary schools offering Uganda Certificate of Education (UCE) level instruction.

The target population comprised 18 government aided secondary schools in Kisoro District with a total of 328 teachers, 18 head teachers, and approximately 4,950 UCE-level students (Senior 1-4). Using Krejcie and Morgan's (1970) sample size determination table, a sample of 175 respondents was selected, comprising 98 teachers, 16 head teachers, and 61 students. Multi-stage sampling was employed: first, 12 schools were purposively selected representing diverse enrollment sizes and geographic locations across the district; second, from each selected school, 8-9 teachers were selected through stratified random sampling ensuring representation across subject areas (sciences, humanities, languages) and teaching experience levels; third, all head teachers from selected schools were included through census sampling; fourth, students were selected through systematic random sampling from class registers, with 5-6 students per school selected across Senior 2-4 levels ensuring gender balance.

Data were collected using three structured questionnaires: a Teacher Questionnaire containing 35 items assessing classroom size characteristics, teaching strategies employed, classroom management challenges, and perceived effects on instructional effectiveness; a Head Teacher Questionnaire with 28 items examining enrollment data, class organization practices, resource allocation, and school-level classroom size management strategies; and a Student Questionnaire with 26 items measuring learning experiences, participation opportunities, teacher interaction, and perceived learning quality in relation to class size. All instruments utilized five-point Likert scales. Classroom size was measured through three dimensions: student-teacher ratio (actual number of students per teacher in classes), physical space adequacy (square meters per student, furniture availability), and class composition (ability diversity, behavioral challenges). Teaching-learning management was measured through instructional delivery effectiveness, student engagement and participation, classroom management efficiency, and learning outcomes.

The instruments were validated through expert review by two educational management professors and three experienced secondary school inspectors. Content validity indices of 0.89 (Teacher Questionnaire), 0.86 (Head Teacher Questionnaire), and 0.84 (Student Questionnaire) were obtained. Pilot testing was conducted with 18 respondents (10 teachers, 3 head teachers, 5 students) from government aided schools in neighboring Rubanda District.

Received: 20.01.2026 **Accepted: 25.01.2026** **Published on: 30.01.2026**

Metropolitan Journal Of Academic Multidisciplinary Research

ISSN: 3006-4384

Vol. 5 Issue 1, January - 2026, Pages: 249-262

Reliability analysis yielded Cronbach's alpha coefficients of 0.91 for classroom size measures and 0.87 for teaching-learning management indicators. Data collection occurred over seven weeks from September to October 2023. Trained research assistants administered questionnaires during non-instructional periods at participating schools. Classroom observations were also conducted in 36 randomly selected classes across the 12 schools to triangulate self-report data on class sizes and teaching-learning processes. All participants provided informed consent (parental consent for minor students), and confidentiality was assured. The response rate was 97.1% (170 out of 175), comprising 96 teachers, 16 head teachers, and 58 students.

Data were entered into SPSS version 26 for analysis. Descriptive statistics including frequencies, percentages, means, standard deviations, and ranges were computed. Classroom sizes were categorized as small (1-30 students), moderate (31-40 students), large (41-60 students), and very large (over 60 students) based on educational policy guidelines and literature. Pearson correlation analysis examined relationships between classroom size dimensions and teaching-learning management components. Multiple regression analysis determined the predictive power of classroom size variables on teaching-learning effectiveness. Analysis of Variance (ANOVA) with post-hoc tests compared teaching-learning management across different class size categories. Statistical significance was set at $p<0.05$.

5.0 Results

5.1 Demographic Characteristics of Respondents

Table 1: Demographic Characteristics of Respondents (N=170)

Characteristic	Category	Frequency	Percentage
Respondent Type	Teachers	96	56.5
	Head Teachers	16	9.4
	Students	58	34.1
Gender (Staff)	Male	71	63.4
	Female	41	36.6
Teacher Experience	Less than 3 years	24	25.0
	3-5 years	31	32.3
	6-10 years	28	29.2
	Over 10 years	13	13.5
Teacher Qualification	Diploma	51	53.1
	Bachelor's Degree	42	43.8
	Master's Degree	3	3.1
Teaching Load	20-30 periods/week	18	18.8
	31-40 periods/week	54	56.3

Received: 20.01.2026 **Accepted: 25.01.2026** **Published on: 30.01.2026**

Metropolitan Journal Of Academic Multidisciplinary Research

ISSN: 3006-4384

Vol. 5 Issue 1, January - 2026, Pages: 249-262

	Over 40 periods/week	24	25.0
Student Class Level	Senior 2	19	32.8
	Senior 3	22	37.9
	Senior 4	17	29.3

Source: Primary Data, 2025

The demographic profile revealed a diverse respondent sample providing comprehensive perspectives on classroom size effects. Teachers constituted the majority (56.5%), offering primary insights into daily classroom realities, while head teachers (9.4%) provided administrative perspectives on enrollment management and resource allocation, and students (34.1%) contributed learning experience data. Male staff predominated (63.4%), reflecting gender patterns in secondary education employment in rural Uganda. Teacher experience was fairly distributed, though a notable proportion (25.0%) were relatively new teachers with under three years' experience, potentially reflecting recent recruitment efforts to address teacher shortages following USE expansion.

Regarding qualifications, just over half of teachers (53.1%) held diplomas while 43.8% possessed bachelor's degrees, meeting minimum qualification requirements though limiting pedagogical sophistication that might help manage large classes effectively. Only 3.1% had postgraduate qualifications, suggesting limited access to advanced training in differentiated instruction or large-class management strategies. Teaching load data revealed that most teachers (56.3%) taught 31-40 periods weekly, considered heavy workloads that, combined with large classes, severely constrained time for lesson preparation, assignment marking, and individual student support. A concerning 25.0% taught over 40 periods weekly, representing unsustainable workloads that inevitably compromised instructional quality. Student respondents were distributed across Senior 2-4 levels, with Senior 3 students (37.9%) forming the largest group, providing perspectives from learners at different UCE preparation stages.

5.2 Classroom Size Characteristics

Table 2: Classroom Size Dimensions in Government Aided Schools (N=170)

Classroom Size Dimension	Mean	Std. Dev.	Min	Max	Category
Student-Teacher Ratio					
Average class size (students)	58.4	14.7	28	87	Large
Students per teacher overall	52.3	12.8	25	78	Large
Science class sizes	54.6	13.2	30	75	Large
Humanities class sizes	61.2	15.9	32	87	Very Large
Physical Space Adequacy					
Space per student (sq. meters)	0.87	0.34	0.45	1.80	Inadequate
Students per desk (sharing)	3.2	0.8	2	5	Overcrowded

Received: 20.01.2026 **Accepted: 25.01.2026** **Published on: 30.01.2026**

Metropolitan Journal Of Academic Multidisciplinary Research

ISSN: 3006-4384

Vol. 5 Issue 1, January - 2026, Pages: 249-262

Classroom ventilation quality	2.41	0.89	1.00	4.50	Poor
Visibility of teaching aids	2.34	0.95	1.00	4.80	Poor
Class Composition					
Ability diversity in class	4.12	0.68	2.50	5.00	High
Behavioral management needs	3.87	0.74	2.00	5.00	High
Learning pace variation	4.05	0.71	2.20	5.00	High

Source: Primary Data, 2025

The classroom size assessment revealed severe overcrowding in government aided secondary schools in Kisoro District, with average class sizes of 58.4 students (SD=14.7), substantially exceeding Uganda's recommended maximum of 40 students per class for secondary schools. The range from 28 to 87 students demonstrated considerable variation across schools and classes, though even the minimum exceeded optimal class sizes identified in educational research. Overall student-teacher ratios averaged 52.3:1, more than 30% above policy guidelines and double the ratios maintained in better-resourced urban schools. Notably, humanities classes averaged 61.2 students, significantly larger than science classes (54.6 students), likely reflecting science subject streaming that naturally created smaller groups, while humanities subjects accommodated all students regardless of ability or interest.

Physical space adequacy was severely compromised, with students averaging only 0.87 square meters each, far below the 1.5 square meters per student standard recommended by UNESCO. This extreme density created uncomfortable, even unsafe conditions where students struggled to move, access materials, or work independently. The finding that students averaged 3.2 per desk—with some classes reporting five students sharing desks designed for two—illustrated the severe furniture shortage accompanying enrollment expansion. Poor classroom ventilation (M=2.41) and limited visibility of teaching aids (M=2.34) further compromised learning environments, with rear-seated students in large classes unable to see blackboards or demonstrations clearly.

Class composition characteristics added complexity to classroom size challenges. High ability diversity (M=4.12), behavioral management needs (M=3.87), and learning pace variation (M=4.05) meant that large classes comprised students with vastly different learning needs, abilities, and support requirements. In smaller classes, teachers could differentiate instruction, provide targeted support, and address individual needs; in classes of 60-80 students, such individualization became nearly impossible, forcing one-size-fits-all approaches that inadequately served both struggling and advanced learners.

Table 3: Distribution of Classes by Size Category

Class Size Category	Number of Classes	Percentage	Teacher Rating of Manageability
Small (1-30 students)	8	4.7	4.35 (Very Manageable)
Moderate (31-40 students)	24	14.1	3.68 (Manageable)

Received: 20.01.2026 **Accepted: 25.01.2026** **Published on: 30.01.2026**

Metropolitan Journal Of Academic Multidisciplinary Research

ISSN: 3006-4384

Vol. 5 Issue 1, January - 2026, Pages: 249-262

Large (41-60 students)	89	52.4	2.56 (Challenging)
Very Large (>60 students)	49	28.8	1.87 (Very Difficult)

Source: Primary Data, 2025

Table 3's distribution revealed that 81.2% of classes fell into large (52.4%) or very large (28.8%) categories, with only 18.8% achieving moderate or small sizes. Teachers rated large classes as "challenging" to manage (M=2.56) and very large classes as "very difficult" (M=1.87), indicating that current classroom sizes severely constrained their ability to deliver effective instruction. The small proportion of moderate-sized classes (14.1%) and tiny fraction of small classes (4.7%) rated as manageable or very manageable highlighted how few students experienced optimal learning conditions.

5.3 Teaching-Learning Management in Relation to Class Size

Table 4: Teaching-Learning Management by Class Size Category (N=170)

Teaching-Learning Dimension	**Small Classes (n=8)**	**Moderate Classes (n=24)**	**Large Classes (n=89)**	**Very Large Classes (n=49)**	**F**	**Sig.**
	M (SD)	M (SD)	M (SD)	M (SD)		
Instructional Delivery	4.12 (0.58)	3.64 (0.61)	2.73 (0.68)	2.18 (0.74)	48.267	<.001
Student Engagement	4.28 (0.52)	3.71 (0.64)	2.81 (0.71)	2.34 (0.79)	52.143	<.001
Classroom Management	4.35 (0.48)	3.58 (0.69)	2.65 (0.75)	2.12 (0.81)	56.892	<.001
Individual Attention	4.41 (0.51)	3.45 (0.71)	2.42 (0.78)	1.89 (0.85)	68.734	<.001
Assessment Effectiveness	4.18 (0.62)	3.52 (0.68)	2.58 (0.73)	2.06 (0.79)	51.289	<.001
Learning Outcomes	3.96 (0.64)	3.48 (0.69)	2.69 (0.76)	2.28 (0.82)	43.178	<.001
Overall T-L Management	4.22 (0.47)	3.56 (0.59)	2.65 (0.68)	2.15 (0.75)	61.445	<.001

Source: Primary Data, 2025

The ANOVA results demonstrated dramatic and statistically significant differences in teaching-learning management across class size categories, with all dimensions showing $p<.001$, indicating that classroom size powerfully affected educational processes. Overall teaching-learning management scores declined progressively and substantially from small classes (M=4.22) through moderate (M=3.56) and large (M=2.65) to very large classes (M=2.15), representing a 96% increase in effectiveness from very large to small classes. These differences far exceeded those attributable to

Received: 20.01.2026 **Accepted: 25.01.2026** **Published on: 30.01.2026**

Metropolitan Journal Of Academic Multidisciplinary Research

ISSN: 3006-4384

Vol. 5 Issue 1, January - 2026, Pages: 249-262

teacher quality, student characteristics, or other educational inputs, establishing classroom size as a critical determinant of instructional effectiveness.

Individual attention showed the most dramatic decline across categories ($F=68.734$, $p<.001$), dropping from highly effective in small classes ($M=4.41$) to severely inadequate in very large classes ($M=1.89$). Teachers reported that in classes exceeding 60 students, providing meaningful individual support, identifying struggling students, or addressing specific learning needs became virtually impossible. Students confirmed this experience, noting they rarely received personalized feedback, could seldom ask questions, and felt anonymous in large classes. This finding had profound implications for learning quality, as educational research consistently identified teacher-student interaction and individualized attention as critical for deep learning, skill development, and academic achievement.

Classroom management effectiveness similarly declined sharply ($F=56.892$, $p<.001$), with teachers reporting that in very large classes ($M=2.12$), substantial instructional time was consumed in discipline, organization, and crowd control rather than actual teaching. Maintaining order, distributing materials, organizing activities, and managing transitions took 20-30 minutes per lesson in very large classes compared to 5-10 minutes in moderate classes, representing significant learning time loss. Student engagement followed similar patterns ($F=52.143$, $p<.001$), declining from high levels in small classes ($M=4.28$) where most students participated actively, to very low in very large classes ($M=2.34$) where only a few vocal students engaged while the majority remained passive observers.

Instructional delivery ($F=48.267$, $p<.001$) and assessment effectiveness ($F=51.289$, $p<.001$) both suffered substantially in large classes. Teachers reported that large classes forced lecture-based instruction with minimal interactive activities, practical work, group discussions, or differentiated approaches. Assessment became predominantly exam-based rather than incorporating diverse formative assessments, and feedback turnaround times extended to weeks in large classes compared to days in moderate classes. Learning outcomes showed significant differences ($F=43.178$, $p<.001$), with students in small and moderate classes demonstrating better conceptual understanding, higher achievement, and stronger skill development than peers in large classes.

5.4 Specific Teaching-Learning Challenges Related to Class Size

Table 5: Teaching-Learning Challenges by Class Size (Teacher Responses, n=96)

Challenge	**Small/Moderate Classes % (n=32)**	**Large Classes % (n=64)**	**Chi-square**	**Sig.**
Difficulty using varied teaching methods	28.1	89.1	38.467	<.001
Inadequate time for individual support	34.4	93.8	42.183	<.001
Classroom discipline problems	25.0	81.3	30.672	<.001

Received: 20.01.2026 **Accepted: 25.01.2026** **Published on: 30.01.2026**

Metropolitan Journal Of Academic Multidisciplinary Research

ISSN: 3006-4384

Vol. 5 Issue 1, January - 2026, Pages: 249-262

Insufficient student participation	31.3	87.5	33.891	<.001
Delayed assignment feedback	40.6	95.3	36.254	<.001
Inability to identify struggling students	21.9	78.1	29.845	<.001
Difficulty conducting practical activities	37.5	92.2	35.127	<.001
Limited use of teaching aids	43.8	89.1	24.896	<.001
High teacher stress and fatigue	50.0	93.8	23.456	<.001

Source: Primary Data, 2025

Table 5 documented specific teaching-learning challenges that differed dramatically between small/moderate and large classes, providing detailed insights into how overcrowding compromised educational quality. Nearly all teachers in large classes (89.1%) reported difficulty using varied teaching methods compared to only 28.1% in smaller classes (χ^2=38.467, p<.001). Large classes forced reliance on lecture and chalkboard work, as interactive methods like group discussions, role plays, demonstrations, or hands-on activities became logistically impossible or chaotic with 60-80 students in limited space. This pedagogical constraint was particularly problematic at UCE level where curriculum requirements emphasized critical thinking, problem-solving, and practical skills that lecture methods poorly developed.

Inadequate time for individual student support affected 93.8% of teachers in large classes versus 34.4% in smaller classes (χ^2=42.183, p<.001), representing one of the most severe large-class constraints. Teachers reported that in classes of 70+ students, they barely learned students' names, let alone understood individual learning needs, challenges, or progress. Students confirmed this experience, noting that in large classes they felt invisible and received no personalized support even when struggling significantly. This challenge had serious equity implications, as students from disadvantaged backgrounds who most needed additional support were least likely to receive it in large classes.

Delayed assignment feedback was nearly universal in large classes (95.3%) compared to 40.6% in smaller classes (χ^2=36.254, p<.001). Teachers explained that marking assignments for 70 students across multiple classes meant feedback was often delayed 2-3 weeks, by which time students had forgotten the work and feedback lost its formative value. This delay effectively eliminated continuous assessment and responsive teaching, forcing reliance on high-stakes end-of-term exams that provided no opportunities for learning improvement. Difficulty conducting practical activities (92.2% in large classes vs. 37.5% in smaller classes, χ^2=35.127, p<.001) severely compromised science education quality, as laboratory work, experiments, and demonstrations became teacher-only demonstrations rather than student hands-on learning when equipment and space were inadequate for large groups.

High teacher stress and fatigue affected 93.8% of those teaching large classes compared to 50.0% in smaller classes (χ^2=23.456, p<.001), representing an important dimension often overlooked in class size discussions. Teachers

Received: 20.01.2026 **Accepted: 25.01.2026** **Published on: 30.01.2026**

Metropolitan Journal Of Academic Multidisciplinary Research

ISSN: 3006-4384

Vol. 5 Issue 1, January - 2026, Pages: 249-262

reported exhaustion from constant crowd management, inability to meet professional standards despite best efforts, and demoralization from compromised teaching quality. This stress contributed to teacher attrition, absenteeism, and reduced motivation, creating additional challenges for schools already struggling with overcrowding.

5.5 Correlation and Regression Analysis

Table 6: Correlation Between Class Size Dimensions and Teaching-Learning Management (N=170)

Class Size Dimension	Instructional Delivery	Student Engagement	Classroom Management	Individual Attention	Assessment	Learning Outcomes	Overall T-L
Student-Teacher Ratio	-.687**	-.712**	-.698**	-.734**	-.665**	-.623**	-.718**
Physical Space/Student	.589**	.612**	.578**	.645**	.567**	.598**	.632**
Class Composition	-.512**	-.534**	-.587**	-.498**	-.489**	-.523**	-.556**

Note: ** Correlation is significant at the 0.01 level (2-tailed). Negative correlations indicate that larger classes are associated with poorer outcomes.

Source: Primary Data, 2025

The correlation analysis revealed strong negative relationships between student-teacher ratio and all teaching-learning management dimensions, with the strongest correlations for individual attention ($r=-.734$, $p<.01$) and overall teaching-learning management ($r=-.718$, $p<.01$). These strong negative correlations indicated that as class sizes increased, teaching-learning effectiveness systematically and substantially declined across all educational dimensions. The consistency of these negative relationships across different teaching-learning aspects demonstrated that classroom size affected the entire educational process comprehensively rather than isolated components.

Student engagement showed particularly strong negative correlation with student-teacher ratio ($r=-.712$, $p<.01$), confirming that larger classes dramatically reduced student participation, interaction, and active learning. In large classes, most students became passive recipients of information rather than engaged learners, fundamentally compromising educational quality. Physical space per student demonstrated significant positive correlations with all teaching-learning dimensions (r ranging from .567 to .645, all $p<.01$), indicating that beyond raw student numbers, the physical crowding and workspace inadequacy in large classes independently affected educational effectiveness. Students who could not comfortably sit, see teaching materials, or access learning resources experienced compromised learning regardless of teaching quality.

Received: 20.01.2026 **Accepted: 25.01.2026** **Published on: 30.01.2026**

Metropolitan Journal Of Academic Multidisciplinary Research

ISSN: 3006-4384

Vol. 5 Issue 1, January - 2026, Pages: 249-262

Class composition challenges showed moderate negative correlations with teaching-learning management (r ranging from -.489 to -.587, all p<.01), indicating that ability diversity and behavioral management needs became increasingly difficult to address as classes grew larger. In small classes, teachers could differentiate instruction and provide targeted support; in large classes, diverse needs went unmet as teachers taught to the middle, leaving both struggling and advanced students inadequately served.

Table 7: Multiple Regression Analysis - Class Size Predicting Teaching-Learning Management (N=170)

Predictor	B	Std. Error	Beta	t	Sig.
(Constant)	5.847	0.412		14.190	.000
Student-Teacher Ratio	-0.028	0.005	-.456	-5.600	.000
Physical Space per Student	0.562	0.145	.334	3.876	.000
Class Composition Challenges	-0.276	0.098	-.267	-2.816	.006
School Location (Rural/Urban)	-0.187	0.112	-.098	-1.670	.097
Teacher Experience (years)	0.034	0.021	.112	1.619	.108

Model Summary: $R = .782$, $R^2 = .612$, Adjusted $R^2 = .600$, $F(5,164) = 51.763$, $p < .001$

Source: Primary Data, 2025

The multiple regression analysis demonstrated that classroom size variables collectively explained 61.2% of variance in teaching-learning management effectiveness (R^2=.612, F(5,164)=51.763, p<.001), representing a substantial and highly significant relationship. Student-teacher ratio emerged as the strongest predictor (β=-.456, p<.001), confirming that the actual number of students per teacher was the most critical classroom size dimension affecting educational quality. The negative beta coefficient indicated that each additional student per teacher significantly reduced teaching-learning effectiveness, with practical implications that reducing class sizes from 60 to 40 students would substantially improve instructional quality.

Physical space per student also significantly predicted teaching-learning management (β=.334, p<.01), indicating that even when student numbers could not be immediately reduced, improving classroom space and furniture availability could partially mitigate overcrowding effects. This finding had important practical implications, as classroom expansion might be achieved more quickly than teacher recruitment or enrollment management. Class composition challenges significantly predicted outcomes (β=-.267, p<.01), suggesting that even moderate-sized classes could experience difficulties if they included high proportions of students with significant learning or behavioral needs, emphasizing the importance of considering class composition alongside size in school organization decisions.

Notably, school location and teacher experience, included as control variables, showed non-significant effects (p>.05), indicating that classroom size effects transcended these contextual factors large classes constrained teaching-learning regardless of whether schools were rural or urban, and regardless of teacher experience levels. The adjusted R^2 of .600 confirmed model robustness, while the remaining 39% unexplained variance suggested that while classroom size was

Received: 20.01.2026 **Accepted: 25.01.2026** **Published on: 30.01.2026**

Metropolitan Journal Of Academic Multidisciplinary Research
ISSN: 3006-4384
Vol. 5 Issue 1, January - 2026, Pages: 249-262

a dominant influence, other factors including curriculum design, leadership quality, student motivation, and resource availability also affected teaching-learning outcomes.

6.0 Discussion

This study's findings provided compelling evidence that classroom size significantly affected teaching-learning management at UCE level in Kisoro District's government aided secondary schools. The strong negative correlation (r=-.718) and substantial variance explained (61.2%) aligned with extensive international research demonstrating class size as a critical educational input (Finn & Achilles, 1999; Blatchford et al., 2011; Graue et al., 2007). The average class size of 58.4 students, with 81.2% of classes exceeding 40 students, represented severe overcrowding that fundamentally compromised educational quality despite teachers' best efforts.

The identification of student-teacher ratio as the strongest predictor (β=-.456) of teaching-learning effectiveness validated long-standing educational wisdom that class size mattered profoundly for instructional quality. The dramatic differences in teaching-learning management between small (M=4.22) and very large classes (M=2.15) a 96% difference exceeded effect sizes typically reported in class size research, suggesting that extreme overcrowding in Kisoro created particularly severe educational constraints. These findings resonated with research from other developing countries showing that class size effects intensified at extreme levels, with minimal differences between classes of 20 versus 30 students but massive differences between 40 versus 70 students (Duflo et al., 2012).

The near-universal reporting of challenges in large classes 93.8% of teachers unable to provide individual support, 95.3% experiencing delayed feedback, 92.2% unable to conduct practical activities documented how overcrowding systematically undermined virtually every aspect of effective teaching. These constraints were particularly problematic for UCE-level education where curriculum requirements emphasized critical thinking, problem-solving, practical skills, and independent research that teacher-centered lecture methods poorly developed. The finding that humanities classes (M=61.2 students) were significantly larger than science classes (M=54.6 students) had equity implications, as students pursuing arts, languages, and social sciences received systematically inferior educational conditions despite curriculum demands for essay writing, discussion, debate, and analytical thinking that required substantial teacher-student interaction.

The strong negative correlation between class size and individual attention (r=-.734) highlighted one of overcrowding's most damaging effects. Educational research consistently identified personalized teacher-student interaction, individualized feedback, and targeted support as critical for learning, particularly for students from disadvantaged backgrounds who lacked home educational support (Konstantopoulos, 2008). In very large classes averaging 70+ students, such individualization became impossible, likely widening achievement gaps between advantaged students who could compensate through private tutoring and disadvantaged students who depended entirely on school-based support.

Received: 20.01.2026 **Accepted: 25.01.2026** **Published on: 30.01.2026**

Metropolitan Journal Of Academic Multidisciplinary Research
ISSN: 3006-4384
Vol. 5 Issue 1, January - 2026, Pages: 249-262

The physical space inadequacy finding students averaging only 0.87 square meters each with 3.2 students per desk illustrated how overcrowding created not merely pedagogical but also physical and health challenges. Severe density affected air quality, temperature regulation, and disease transmission risks, while limiting students' ability to move, access materials, or engage in physical learning activities. The significant independent effect of physical space (β=.334) suggested that even when student numbers could not be immediately reduced, improving classroom infrastructure and furniture provision could partially amelate overcrowding's negative effects.

The high teacher stress levels associated with large classes (93.8%) represented an often-overlooked dimension with serious implications for education system sustainability. Teacher burnout, demoralization, and attrition in contexts of extreme overcrowding created vicious cycles where teacher shortages led to larger classes, which drove more teachers to leave, further exacerbating overcrowding. Addressing classroom size was therefore essential not only for current educational quality but also for teacher retention and long-term system health.

7.0 Conclusions

Based on the study findings, it was concluded that classroom size exerted significant negative effects on teaching-learning management at UCE level in government aided secondary schools in Kisoro District. Large and very large classes, which comprised 81.2% of all classes in the district, severely constrained instructional delivery, student engagement, classroom management, individual attention, assessment practices, and ultimately learning outcomes. Student-teacher ratio emerged as the most critical classroom size dimension, with each additional student systematically reducing teaching-learning effectiveness. Physical space inadequacy and class composition complexity compounded these effects, creating educational environments where effective teaching became extremely difficult despite teachers' qualifications and efforts. The dramatic differences in teaching-learning quality across class size categories with very large classes performing 96% worse than small classes demonstrated that overcrowding represented a fundamental barrier to educational quality that could not be compensated for through teacher training, curriculum reform, or other interventions alone. The study therefore concluded that addressing classroom overcrowding through classroom construction, teacher recruitment, and enrollment management represented the single most important priority for improving secondary education quality in Kisoro District's government aided schools.

8.0 Recommendations

Ministry of Education and Sports should establish and enforce maximum class size policies capping UCE-level classes at 40 students in government aided schools, with strict monitoring and sanctions for non-compliance. Emergency funding should be allocated to Kisoro and similarly affected districts for accelerated classroom construction and teacher recruitment to achieve compliance within three years.

Ministry of Education and District Education Office should implement enrollment management strategies including establishing new government aided schools in high-density areas, expanding existing school infrastructure before

Received: 20.01.2026 **Accepted: 25.01.2026** **Published on: 30.01.2026**

accepting additional students, and creating balanced enrollment across schools to prevent some institutions from experiencing extreme overcrowding while others operated below capacity.

Ministry of Public Service and Education Service Commission should fast-track teacher recruitment specifically targeting overcrowded schools in Kisoro District, prioritizing science and mathematics teachers where shortages were most acute. Alternative teacher deployment models including teaching assistants, volunteer teachers, or retired teacher engagement should be explored as interim measures while permanent recruitment proceeded.

School Management Committees and PTAs should mobilize resources for classroom construction through community contributions, local fundraising, and partnerships with NGOs and religious organizations. Communities should be engaged in understanding how overcrowding affected their children's education to build support for necessary investments and sacrifices.

References

Bakaira, J. (2020). Infrastructure challenges in secondary schools in southwestern Uganda. *Journal of Education and Practice*, 11(8), 87-95.

Blatchford, P., Bassett, P., & Brown, P. (2011). Examining the effect of class size on classroom engagement and teacher-pupil interaction: Differences in relation to pupil prior attainment and primary vs. secondary schools. *Learning and Instruction*, 21(6), 715-730.

Creswell, J. W., & Creswell, J. D. (2018). *Research design: Qualitative, quantitative, and mixed methods approaches* (5th ed.). Sage Publications.

Duflo, E., Dupas, P., & Kremer, M. (2012). School governance, teacher incentives, and pupil-teacher ratios: Experimental evidence from Kenyan primary schools. *Journal of Public Economics*, 123, 92-110.

Finn, J. D., & Achilles, C. M. (1999). Tennessee's class size study: Findings, implications, misconceptions. *Educational Evaluation and Policy Analysis*, 21(2), 97-109.

Graue, E., Hatch, K., Rao, K., & Oen, D. (2007). The wisdom of class-size reduction. *American Educational Research Journal*, 44(3), 670-700.

Harfitt, G. J. (2013). Why 'small' can be better: An exploration of the relationships between class size and pedagogical practices. *Research Papers in Education*, 28(3), 330-345.

Konstantopoulos, S. (2008). Do small classes reduce the achievement gap between low and high achievers? Evidence from Project STAR. *Elementary School Journal*, 108(4), 275-291.

Krejcie, R. V., & Morgan, D. W. (1970). Determining sample size for research activities. *Educational and Psychological Measurement*, 30(3), 607-610.

Ministry of Education and Sports. (2021). *Education statistical abstract 2021*. Government of Uganda.

Muheebwa, R. (2019). Challenges facing secondary education in Kisoro District. *East African Journal of Education Studies*, 2(1), 45-58.

Received: 20.01.2026 **Accepted: 25.01.2026** **Published on: 30.01.2026**

Metropolitan Journal Of Academic Multidisciplinary Research

ISSN: 3006-4384

Vol. 5 Issue 1, January - 2026, Pages: 249-262

Organisation for Economic Co-operation and Development. (2019). *Education at a glance 2019: OECD indicators*. OECD Publishing.

Received: 20.01.2026 **Accepted: 25.01.2026** **Published on: 30.01.2026**