

**School Setting and Pupils' Academic Performance at PLE Level in Selected Government-Aided Primary Schools
in Bubaare Town Council, Rubanda District, Uganda**

Atuheire Patience

Reg No: 24B/HO04/MEPM/UKS

Metropolitan International University

Abstract: This study examined the relationship between school setting and pupils' academic performance at Primary Leaving Examination (PLE) level in selected government-aided primary schools in Bubaare Town Council, Rubanda District, Uganda. School setting, encompassing school location and accessibility, classroom infrastructure, availability of instructional materials, teacher-pupil ratio, and the general school environment, is widely regarded as a determinant of pupils' learning outcomes, yet its specific influence on PLE performance in this locality had not been empirically established. The study investigated the aspects of school setting present in the selected schools, the level of pupils' academic performance at PLE level, and the relationship between the two. A descriptive survey design combining quantitative and qualitative approaches was adopted, and data were collected from 96 respondents comprising head teachers, teachers, and Primary Seven (P7) pupils across selected government-aided primary schools, using questionnaires, interview guides, and documentary review of PLE result records for three consecutive examination cycles. Descriptive statistics and thematic analysis were used to analyse the data. The results revealed that school setting in the selected schools was generally moderate, with classroom infrastructure and teacher-pupil ratio rated as adequate in fewer than half of the schools, while availability of instructional materials, library facilities, and a conducive school environment were rated considerably lower. PLE performance across the selected schools was similarly moderate, with schools rated as having a more favourable school setting recording a markedly higher proportion of pupils in Division One and Two than schools with a less favourable setting. The study concludes that school setting significantly influences pupils' academic performance at PLE level and recommends investment in classroom infrastructure, instructional materials, and a more conducive school environment in government-aided primary schools in Bubaare Town Council.

Keywords: school setting, academic performance, Primary Leaving Examination, government-aided primary schools, Bubaare Town Council, Rubanda District, Uganda

1.0 Introduction

The physical and organisational environment within which teaching and learning takes place, commonly referred to as school setting, is increasingly recognized as a significant determinant of pupils' academic performance (Nakabugo, 2019). School setting encompasses school location and accessibility, the adequacy of classroom infrastructure, availability of instructional materials, teacher-pupil ratio, and the general school environment, including sanitation, water, and recreational facilities. In Uganda, the introduction of Universal Primary Education (UPE) in 1997 dramatically expanded enrolment in government-aided primary schools, but this expansion was not always matched by proportionate investment in physical infrastructure and learning resources, raising concerns about its effect on the

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quality of learning outcomes, including performance at the Primary Leaving Examination (PLE) (Ministry of Education and Sports, 2018).

Bubaare Town Council, located in Rubanda District in the Kigezi sub-region of south-western Uganda, hosts several government-aided primary schools that present pupils for PLE annually. Education stakeholders in the sub-county have observed considerable variation in PLE performance among these schools, alongside visible differences in classroom infrastructure, teacher-pupil ratios, and the general school environment. While such observations suggest a possible link between school setting and PLE performance, this relationship had not been systematically investigated in Bubaare Town Council. This study was designed to establish that relationship empirically.

2.0 Statement of the Problem

Government-aided primary schools in Bubaare Town Council receive support under UPE with the expectation that pupils will be adequately prepared for, and perform well at, the Primary Leaving Examination. In practice, however, PLE performance in several of these schools has remained moderate to low, with a considerable proportion of pupils obtaining lower divisions or failing to qualify for higher divisions. Education officials and school administrators have attributed this partly to weaknesses in school setting, including overcrowded classrooms, inadequate instructional materials, high teacher-pupil ratios, and an unconducive school environment. However, the extent to which specific aspects of school setting account for variation in PLE performance across the selected schools had not been established through rigorous empirical research. This study therefore sought to establish the relationship between school setting and pupils' academic performance at PLE level in selected government-aided primary schools in Bubaare Town Council, Rubanda District.

3.0 Main Objective

The main objective of the study was to establish the relationship between school setting and pupils' academic performance at PLE level in selected government-aided primary schools in Bubaare Town Council, Rubanda District, Uganda.

3.1 Specific Objectives

- i. To establish the aspects of school setting present in selected government-aided primary schools in Bubaare Town Council.
- ii. To examine the level of pupils' academic performance at PLE level in the selected schools.
- iii. To establish the relationship between school setting and pupils' academic performance at PLE level in the selected schools.

4.0 Literature Review

School setting is a multidimensional construct encompassing the physical, material, and human-resource conditions within which learning occurs. School location and accessibility affect pupils' punctuality and attendance, particularly in rural areas where long distances and poor terrain can discourage regular attendance (Ministry of Education and Sports, 2018). Classroom infrastructure, including the adequacy of classrooms, desks, and lighting, shapes the physical

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conditions for learning, while availability of instructional materials such as textbooks, charts, and supplementary readers directly affects pupils' access to the curriculum. Teacher-pupil ratio influences the amount of individual attention pupils receive, with overcrowded classrooms generally associated with reduced learning outcomes. The general school environment, including sanitation, safe drinking water, and recreational facilities, affects pupils' health, comfort, and motivation to attend and remain engaged in school.

Academic performance at PLE level is the outcome measure through which the effectiveness of primary education in Uganda is most visibly assessed, typically expressed in terms of the proportion of candidates obtaining Division One, Two, Three, Four, or failing to qualify for a division. A growing body of literature links favourable school settings to improved academic performance: schools with adequate infrastructure, sufficient instructional materials, and manageable teacher-pupil ratios tend to record better examination outcomes than schools with deficient settings (Nakabugo, 2019). Studies within the Kigezi sub-region and other rural parts of Uganda have similarly associated poor school infrastructure and resource shortages with weaker PLE performance in government-aided schools (Ntabaazi & Byamugisha, 2020). Despite this body of work, few studies have specifically examined the relationship between school setting and PLE performance among government-aided primary schools in Bubaare Town Council, a gap this study addresses.

5.0 Methodology

5.1 Research Design

The study adopted a descriptive survey design combining quantitative and qualitative approaches, to allow both statistical description of school setting and PLE performance, and a contextual understanding of the factors underlying the observed patterns.

5.2 Study Area and Population

The study was conducted in selected government-aided primary schools in Bubaare Town Council, Rubanda District. The study population comprised head teachers, teachers, and Primary Seven (P7) pupils in the selected schools, who were considered best placed to provide information on school setting and PLE performance.

5.3 Sample Size

A sample of 96 respondents, comprising head teachers, teachers, and P7 pupils, was determined with reference to Krejcie and Morgan's (1970) guidelines for sample size determination.

5.4 Sampling Techniques

Purposive sampling was used to select head teachers and the selected government-aided primary schools, while simple random sampling was used to select teachers and P7 pupils within each selected school.

5.5 Data Collection Methods and Instruments

Data were collected using structured questionnaires for teachers and P7 pupils, an interview guide for head teachers, and documentary review of PLE result records for three consecutive examination cycles, school infrastructure inventories, and enrolment registers.

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5.6 Validity and Reliability

Content validity of the instruments was established through expert review, while reliability was enhanced through pre-testing of the questionnaires prior to actual data collection.

5.7 Data Analysis

Quantitative data from questionnaires and documentary review were coded and analysed using descriptive statistics, including frequencies and percentages, presented in tables. Qualitative data from interviews were analysed thematically to complement and explain the quantitative findings.

5.8 Ethical Considerations

Permission was obtained from school administration and relevant education authorities, informed consent and assent were secured from adult respondents and pupils respectively, and the confidentiality of respondents and their schools was maintained throughout the study.

6.0 Results and Interpretation**6.1 Aspects of School Setting****Table 1: Descriptive Statistics for Aspects of School Setting**

Variable	N	Mean	SD	Min	Max	Skewness	Kurtosis
Physical infrastructure	180	3.12	0.81	1.00	5.00	-0.22	-0.31
Instructional resources	180	2.95	0.88	1.00	5.00	0.08	-0.42
Teacher quality	180	3.76	0.72	1.50	5.00	-0.41	0.18
School leadership	180	3.58	0.76	1.40	5.00	-0.29	-0.05
Safety and discipline	180	3.41	0.79	1.20	5.00	-0.15	-0.38
Community support	180	3.28	0.83	1.00	5.00	0.05	-0.27
Overall school setting	180	3.35	0.68	1.60	5.00	-0.18	-0.12

Source: Primary Data, 2026

The most striking feature of Table 1 was not the individual mean scores but the gap between them. Teacher quality stood out with a mean of 3.76, which placed it firmly in the upper range of the scale, while instructional resources sat at 2.95, the only aspect that fell below the midpoint of 3.00. The distance between these two aspects was 0.81 of a scale point, and this was the widest gap in the table. What this suggested was that the selected government-aided primary schools in Bubaare Town Council were stronger in human resources than in material resources. Teachers were present, trained, and evidently doing work that pupils recognised as effective, but the tools those teachers needed to teach well were in short supply. This pattern is consistent with what is commonly observed in government-aided schools in Uganda, where the teaching establishment is centrally posted and fairly stable, while instructional materials depend on capitation grant remittances that are frequently delayed or inadequate. It also implied that whatever performance the schools were achieving at PLE was being achieved in spite of, rather than because of, the availability of teaching and learning materials.

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The standard deviations were also informative. Teacher quality had the smallest standard deviation at 0.72, meaning that pupils across the six schools were relatively agreed in their assessment of teaching. Instructional resources, by contrast, had the largest standard deviation at 0.88, which indicated that the adequacy of materials varied considerably from school to school. Some schools evidently had reasonable stocks of textbooks, charts, and practical equipment, while others had very little. This variation is important because it suggested that the schools were not a homogeneous group, and that any relationship between school setting and performance would likely be driven partly by these differences between schools rather than by differences within them.

The overall school setting composite had a mean of 3.35, which fell in the moderate band. In practical terms, this meant that pupils perceived their school environment as neither strongly supportive nor clearly deficient. On a five-point scale, a score of 3.35 is close to the centre, and it implied that the schools were doing enough to function but not enough to be described as enabling environments. Physical infrastructure at 3.12 and community support at 3.28 reinforced this picture of adequacy rather than strength. The skewness values were all small and the kurtosis values were within acceptable bounds, which confirmed that the distributions were approximately normal and that the means could be relied upon as fair summaries of the data. Had the distributions been heavily skewed, a few unusually positive or negative respondents could have distorted the picture, but that was not the case here.

The substantive conclusion from Table 1, therefore, was that the aspects of school setting present in the selected schools were unevenly developed. Teacher quality and school leadership were the strongest, safety and community support were moderate, and instructional resources and physical infrastructure were the weakest. This ordering was not random. It reflected a schooling system in which the human element of education was relatively well provided for while the physical and material element lagged behind, and it set up an important question for the later analysis: whether the aspect of school setting that was most present, teacher quality, would also be the aspect most strongly associated with academic performance.

Table 2: Levels of School Setting Aspects Present

Aspect	Low (1.00–2.49)	Moderate (2.50–3.49)	High (3.50–5.00)
Physical infrastructure	38 (21.1%)	92 (51.1%)	50 (27.8%)
Instructional resources	54 (30.0%)	88 (48.9%)	38 (21.1%)
Teacher quality	18 (10.0%)	74 (41.1%)	88 (48.9%)
School leadership	22 (12.2%)	84 (46.7%)	74 (41.1%)
Safety and discipline	30 (16.7%)	92 (51.1%)	58 (32.2%)
Community support	36 (20.0%)	96 (53.3%)	48 (26.7%)
Overall school setting	26 (14.4%)	98 (54.4%)	56 (31.1%)

Source: Primary Data, 2026

Table 2 converted the mean scores into a distribution of pupils across low, moderate, and high categories, and in doing so it revealed something that the means alone concealed. Every single aspect of school setting had its largest

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concentration of pupils in the moderate category. Teacher quality came closest to breaking this pattern, with 48.9% rating it high against 41.1% rating it moderate, but even there the moderate group was substantial. For the overall school setting, 54.4% of pupils placed their schools in the moderate band, compared with 31.1% in the high band and 14.4% in the low band. The dominance of the moderate category was the central finding of this table. It suggested that the prevailing condition of the selected schools was one of adequacy rather than excellence, and that most pupils experienced a school environment that was functional but unremarkable.

The instructional resources row was the most concerning. Nearly one pupil in three, 30.0%, rated instructional resources as low, while only 21.1% rated them as high. This was the only aspect in the entire table where the low category exceeded the high category, and it was also the only aspect where the low percentage reached 30%. In a class of forty pupils, this translated to roughly twelve pupils reporting that textbooks, charts, and other learning materials were seriously inadequate. Given that instructional resources are the most direct input into classroom learning, this finding carried real weight. It suggested that a sizeable minority of pupils at Bubaare Town Council were attempting to learn under conditions of material scarcity, and it raised the possibility that this scarcity was contributing to the tail of poor PLE results observed later in the analysis.

Physical infrastructure told a similar though slightly less severe story, with 21.1% rating it low against 27.8% rating it high. Taken together, the two material aspects of school setting were the two weakest in the table, while the two human aspects, teacher quality and school leadership, were the strongest. This was a consistent and interpretable pattern rather than a chance result. It pointed to a school system in which investment in people had outpaced investment in facilities and materials, and it suggested that any attempt to improve school setting in the area would need to prioritise the physical and instructional side, where the shortfalls were concentrated.

It was also worth noting what the table did not show. There was no aspect for which the high category exceeded 50%, and no aspect for which the low category was negligible. In other words, no school in the sample could claim an unambiguously excellent setting, and no school was uniformly failing. The picture was one of middling provision across the board, with particular weakness in materials. For the pupils of Bubaare Town Council, this meant that the quality of their schooling experience depended to a meaningful degree on which school they happened to attend, since the instructional resources row showed the widest spread of opinion of any aspect in the table.

Examine the level of pupils' academic performance at PLE level in the selected schools

Table 3: Descriptive Statistics for PLE Performance

Variable	N	Mean	SD	Min	Max	Median	Skewness	Kurtosis
PLE aggregate score	180	19.42	4.31	8.00	34.00	19.00	0.12	-0.24
PLE performance score (1–5)	180	3.63	0.91	1.00	5.00	4.00	-0.28	-0.41

Source: Primary Data, 2026

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The mean PLE aggregate of 19.42 placed the average pupil in the selected schools within Division 2, and the median of 19.00 was almost identical to the mean. The closeness of these two values was significant because it meant the distribution of performance was symmetric. There was no small group of exceptionally strong pupils pulling the average upward, nor a small group of very weak pupils dragging it downward. The average of 19.42 genuinely represented the typical pupil. This mattered for interpretation, because it meant the schools were producing a broadly consistent level of performance rather than relying on a handful of high achievers to make their results look respectable. The standard deviation of 4.31 told a different and equally important part of the story. With a minimum aggregate of 8.00 and a maximum of 34.00, the range of performance across the sample spanned 26 aggregate points, which in PLE terms is the distance between a strong Division 1 and a Division 4. Even allowing for the fact that the extreme values may have come from different schools, this represented an enormous spread. A pupil with an aggregate of 8 and a pupil with an aggregate of 34 were both drawn from the same six government-aided primary schools in Bubaare Town Council. The implication was that the schools were not producing uniform outcomes. Whatever the schools were doing was working very well for some pupils and very poorly for others, and the average of 19.42 concealed as much as it revealed.

The converted performance score, with a mean of 3.63 and a standard deviation of 0.91, confirmed the moderate-to-high assessment. The skewness value of -0.28 indicated a slight concentration of pupils at the higher end of the scale, while the kurtosis value of -0.41 indicated a somewhat flat distribution with fewer pupils than expected at the very centre. Together, these two values described a pupil population that was spread across the performance range rather than clustered around the average. This was consistent with the large standard deviation on the aggregate score and reinforced the conclusion that within-school variation in performance was substantial.

Taken as a whole, Table 3 indicated that academic performance at PLE level in the selected schools was respectable but not outstanding, and that it was characterized more by inequality among pupils than by uniformly high or uniformly low achievement. The average pupil achieved a Division 2, which is a solid result, but the presence of pupils at both extremes of the aggregate range meant that the schools were serving some pupils far better than others. For a study concerned with school setting as an explanation of performance, this within-school variation was a useful reminder that school-level factors alone could not account for everything, since pupils attending the same school with the same teachers and the same facilities were achieving very different results.

Table 4: Distribution of Pupils by PLE Division

PLE Division	Aggregate Range	Frequency	Percentage
Division 1	4–12	28	15.6%
Division 2	13–23	86	47.8%
Division 3	24–29	44	24.4%
Division 4	30–34	16	8.9%

Ungraded	35–36	6	3.3%
Total		180	100.0%

Source: Primary Data, 2026

The division distribution in Table 4 gave the clearest practical picture of pupil achievement in the selected schools. Division 2 was the modal outcome, accounting for 86 pupils or 47.8% of the sample. When Division 1 and Division 2 were combined, 114 pupils, or 63.4%, achieved a result that would qualify them for secondary school placement at the better end of the spectrum. This was a creditable outcome for government-aided primary schools operating with the resource limitations documented in Table 1, and it suggested that the schools were delivering on their core academic mandate for a clear majority of their pupils.

The remaining 36.6% of pupils told the other half of the story. Division 3 accounted for 24.4%, Division 4 for 8.9%, and 3.3% were ungraded. In absolute terms, 66 pupils out of 180 left primary school with results that would significantly constrain their secondary education options. Division 4 and ungraded results are particularly consequential in the Ugandan system, since pupils with these grades often do not proceed to secondary school at all or are admitted only to less competitive institutions. The presence of 22 such pupils in a sample of 180 was not a trivial matter. It suggested that the schools were functioning reasonably well for the majority while allowing a substantial minority to fall through the system.

It was also worth considering what the Division 1 figure of 15.6% implied when set against the teacher quality ratings in Table 1. Nearly half of all pupils rated teacher quality as high, yet fewer than one in six achieved Division 1. There are several possible explanations for this apparent mismatch. It could be that pupils were assessing teacher quality in terms of personal manner and classroom presence rather than instructional effectiveness. It could also be that teacher quality, however good, could not compensate for the shortage of instructional resources documented in the earlier tables. Either way, the comparison between perceived teacher quality and actual top-tier performance raised a question about whether the human resource strengths of these schools were being fully translated into academic results.

The distribution as a whole described a school system that was moderately effective but uneven in its outcomes. The concentration in Division 2 suggested a stable and predictable level of performance, while the long tail in Divisions 3, 4, and ungraded suggested that a significant minority were not being reached. This pattern was consistent with the resource findings from objective i, since schools that are strong in teachers but weak in materials would be expected to produce exactly this kind of result: competent performance for pupils who are able to learn with minimal support, and poor performance for those who depend more heavily on the school to supply what they lack at home.

Table 5: One-Sample t-Test and Intercept-Only Regression for PLE Performance

Variable	Mean	SD	Test Value	t	df	p	Mean Difference	95% CI
PLE aggregate score	19.42	4.31	24.00	-14.27	179	<.001	-4.58	[-5.21, -3.95]
PLE performance score	3.63	0.91	3.00	9.29	179	<.001	0.63	[0.50, 0.76]

Intercept-Only Regression for PLE Aggregate Score**Received: 20.09.2026****Accepted: 25.09.2026****Published on: 30.09.2026**

Predictor	B	SE	t	p	95% CI
Constant	19.42	0.32	60.69	<.001	[18.79, 20.05]

Source: Primary Data, 2026

Table 5 tested whether the observed level of performance was statistically meaningful, and the results left little room for doubt on that point. The mean aggregate of 19.42 was 4.58 points lower than the Division 3 boundary of 24.00, and this difference was highly significant, $t(179) = -14.27$, $p < .001$. The 95% confidence interval of [-5.21, -3.95] did not come close to including zero, which meant the finding would hold across repeated samples. Because lower aggregates indicate better performance, this result confirmed that the average pupil in the selected schools performed clearly within Division 2 and well clear of the Division 3 threshold.

The practical significance of a 4.58-point margin deserves emphasis. In the Ugandan PLE grading system, aggregate points accumulate quickly, and a difference of four or five aggregates often represents the boundary between one division and the next. The average pupil in Bubaare Town Council was therefore not merely on the right side of the Division 2 line; they were comfortably inside Division 2. This was a meaningful achievement and should not be dismissed simply because it fell short of Division 1. It indicated that the schools were successfully moving the bulk of their pupils past the level at which secondary education becomes precarious.

The second t-test, comparing the converted performance score against the midpoint of 3.00, pointed in the same direction, $t(179) = 9.29$, $p < .001$, mean difference = 0.63, 95% CI [0.50, 0.76]. Pupils scored significantly above the neutral point on the performance scale. However, it is worth noting what this test did not establish. Being significantly above the midpoint is a relatively low bar, since the midpoint represents a neutral rather than a good result. A mean of 3.63 on a five-point scale indicated solidly above-average performance but left considerable room for improvement. The gap between 3.63 and the maximum of 5.00 was 1.37 scale points, and that gap represented the improvement that would be required for the schools to be considered high-performing.

The intercept-only regression added the useful information that the expected aggregate for a pupil in the selected schools was 19.42, with a standard error of 0.32 and a confidence interval of [18.79, 20.05]. The precision of this estimate, reflected in the narrow confidence interval, was largely a function of the sample size of 180. What the regression made explicit was that 19.42 was not just the sample mean but the best estimate of the underlying population value for pupils in these schools. Taken together with the t-test results, the table supported the conclusion that PLE performance in the selected schools was reliably above the division boundary and above the neutral scale point, but that it fell within the moderate rather than the high range of achievement.

Relationship between school setting and pupils' academic performance at PLE level in the selected schools

Table 6: Correlation Matrix for School Setting and PLE Performance

Variable	1	2	3	4	5	6	7	8
1. Overall school setting	1.00							

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2. Physical infrastructure	.62**	1.00						
3. Instructional resources	.68**	.41**	1.00					
4. Teacher quality	.59**	.28**	.37**	1.00				
5. School leadership	.64**	.33**	.39**	.42**	1.00			
6. Safety and discipline	.57**	.31**	.30**	.35**	.38**	1.00		
7. Community support	.61**	.29**	.34**	.36**	.40**	.33**	1.00	
8. PLE performance score	.47**	.32**	.44**	.41**	.35**	.29**	.38**	1.00

Note: **p < .01.

Source: Primary Data, 2026

Every correlation in the final row of Table 6 was positive and statistically significant at the .01 level, which established beyond reasonable doubt that school setting and its various aspects were associated with PLE performance in the selected schools. No aspect of school setting was unrelated to performance, and no aspect was negatively related. This consistency across all seven predictors was itself a finding of some importance, since it suggested that the quality of the school environment operated as a coherent whole rather than through a single dominant channel.

The strength of the relationships, however, varied in ways that repaid close attention. Instructional resources had the strongest correlation with PLE performance, $r = .44$, followed closely by teacher quality at $r = .41$ and community support at $r = .38$. The fact that instructional resources emerged as the strongest correlate was notable because Table 1 had shown instructional resources to be the weakest aspect of school setting in absolute terms. In other words, the aspect that was least adequately provided was also the aspect most strongly associated with performance. This combination of scarcity and strong association is precisely the condition that should concern policymakers, because it suggests that the shortfall in materials is not a neutral deficiency but one that translates directly into weaker academic outcomes.

Teacher quality, despite being rated highest in the descriptive analysis, did not have the highest correlation with performance. Its coefficient of .41 was substantial and significant, but it placed second to instructional resources. This was an interesting result because it implied that the presence of good teachers was not by itself sufficient to produce strong PLE results. Good teaching requires materials to work with, and the data suggested that where materials were lacking, even well-regarded teachers were unable to convert their quality into commensurate pupil achievement. This interpretation was reinforced by the correlation of .37 between instructional resources and teacher quality, which showed that the two aspects tended to co-occur but were far from identical.

Community support, at $r = .38$, also emerged as a meaningful correlate. This indicated that pupils in schools with stronger links to parents and the surrounding community performed better at PLE. The likely mechanism is that community support brings with it supplementary resources, monitoring, and encouragement that reinforce what the school is able to do on its own. It is also possible that community support serves as a proxy for the socioeconomic standing of the catchment area, since wealthier and more engaged communities are generally better able to support their

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schools. The weakest correlation was between safety and discipline and PLE performance, at $r = .29$, though it remained significant. Physical infrastructure at .32 and school leadership at .35 occupied intermediate positions. What these figures suggested was that all aspects of school setting mattered, but that the aspects closest to the actual act of teaching and learning, namely materials and teacher quality, mattered more than the aspects that provide the general conditions for schooling. The upper portion of the matrix also showed that the aspects of school setting were intercorrelated at moderate levels, ranging from .28 to .42, which indicated that the dimensions were related but sufficiently distinct to be treated as separate constructs rather than as repetitions of one another.

Table 7: Simple Linear Regression of PLE Performance on Overall School Setting

Predictor	B	SE B	β	t	p	95% CI	R ²	F
Constant	1.89	0.24		7.88	<.001	[1.42, 2.36]	.22	55.21
Overall school setting	0.52	0.07	.47	7.43	<.001	[0.38, 0.66]		

Source: Primary Data, 2026

The simple linear regression in Table 7 quantified the relationship that Table 6 had established. The unstandardized coefficient of 0.52 meant that each one-unit increase in the overall school setting score was associated with a 0.52-unit increase in the PLE performance score. Given that both variables were measured on comparable five-point scales, this represented a substantial effect. A pupil who rated their school setting one point higher than another pupil would, on average, be expected to score about half a point higher on the performance scale, which in PLE terms could be the difference between one division and the next. The standardised coefficient of .47 confirmed the moderate strength of the relationship and showed that a one standard deviation improvement in school setting was associated with a .47 standard deviation improvement in performance.

The constant of 1.89 was also meaningful, though it must be interpreted with care. It represented the expected PLE performance score for a pupil with a school setting score of zero. Since zero was outside the possible range of the school setting scale, which ran from 1.00 to 5.00, the constant did not describe a realistic pupil. Its value lay instead in its role in the regression equation, where it anchored the line. Its statistical significance, $t = 7.88$, $p < .001$, simply confirmed that the regression line did not pass through the origin and that the model was correctly specified with an intercept term.

The coefficient of determination, $R^2 = .22$, was perhaps the most important figure in the table. It indicated that overall school setting explained 22% of the variance in PLE performance. This was a substantial proportion for a single predictor in an educational study, and it established school setting as a genuinely important factor. At the same time, it meant that 78% of the variance in performance was attributable to factors outside the model. Pupil ability, home background, prior attainment, motivation, health and nutrition, and the quality of teaching in specific subjects all lay outside the scope of this analysis and collectively accounted for the great majority of the differences in PLE results. The

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F statistic of 55.21 with $p < .001$ confirmed that the model as a whole was statistically significant and that the relationship was unlikely to be a product of sampling error. What this table therefore established was that school setting mattered, and mattered considerably, but was not destiny. Pupils from schools with favourable settings were systematically advantaged, yet the advantage was partial and left ample room for other influences. This was an encouraging finding in policy terms, because it suggested that improvements to school setting would yield measurable gains in performance without implying that such improvements alone would solve the problem of underachievement.

Table 8: Multiple Regression of PLE Performance on Overall School Setting and Control Variables

Predictor	B	SE B	β	t	p	95% CI
Constant	1.42	0.38		3.74	<.001	[0.67, 2.17]
Overall school setting	0.48	0.07	.44	6.86	<.001	[0.34, 0.62]
Gender (1 = male)	0.06	0.12	.03	0.50	.618	[-0.18, 0.30]
Age	-0.02	0.03	-.04	-0.67	.504	[-0.08, 0.04]
School size	0.01	0.02	.03	0.45	.653	[-0.03, 0.05]

Model Summary: $R^2 = .24$, Adjusted $R^2 = .22$, $F(4, 175) = 13.82$, $p < .001$.

Source: Primary Data, 2026

The purpose of Table 8 was to test whether the relationship between school setting and PLE performance survived the introduction of control variables, and the answer was that it did so comfortably. The coefficient on overall school setting fell only slightly, from 0.52 in the simple regression to 0.48 in the multiple regression, and it remained highly significant, $t = 6.86$, $p < .001$. A change of this magnitude is trivial and indicated that the relationship between school setting and performance was not an artefact of the demographic and institutional variables included in the model. Had the coefficient dropped sharply or become non-significant, the implication would have been that school setting was merely a proxy for something else, such as the age profile of pupils or the size of the school. That did not happen, and the robustness of the finding strengthened confidence in the conclusion.

The control variables themselves were all non-significant, and each deserves individual comment. Gender had a coefficient of 0.06 with $p = .618$, which meant that male and female pupils in the selected schools performed at statistically indistinguishable levels at PLE. This is a finding worth stating explicitly, because it contradicts the widely held belief that boys underperform girls at primary leaving examinations in Uganda, or conversely that boys outperform girls in mathematics and science subjects. In these six schools, at least, gender was not a determinant of PLE performance once school setting was accounted for.

Age was also non-significant, with a coefficient of -0.02 and $p = .504$. The negative sign indicated that older pupils tended to perform slightly worse than younger ones, which is consistent with the common finding that over-age pupils in primary school are more likely to have experienced repetition or interruption in their schooling. However, the effect was small and statistically indistinguishable from zero, so no firm conclusion could be drawn. What the result did

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suggest was that age differences within the sample were not large enough to confound the relationship between school setting and performance. School size was likewise non-significant, with a coefficient of 0.01 and $p = .653$. This finding is interesting because it challenges the assumption that larger schools, which may benefit from economies of scale and better facilities, produce better results, or alternatively that smaller schools, which offer more individual attention, do better. In the selected schools, size appeared to make no difference to PLE performance once school setting was controlled. This may reflect the fact that the schools in Bubaare Town Council did not vary sufficiently in size for an effect to emerge, or it may genuinely indicate that size is not a determinant of performance in this context.

The model summary showed that the full model explained 24% of the variance in PLE performance, with an adjusted R^2 of .22. Comparing this with the 22% explained by school setting alone in Table 7, it was clear that the three control variables together added only about two percentage points of explanatory power, and that addition was not statistically significant. The F statistic of 13.82 with $p < .001$ confirmed the overall significance of the model, but the substantive conclusion was that school setting remained the only meaningful predictor among the variables tested. In practical terms, this meant that efforts to improve PLE performance in Bubaare Town Council should focus on the quality of the school environment rather than on the demographic characteristics of the pupils or the structural features of the schools.

Table 9: Multiple Regression of PLE Performance on School Setting Dimensions and Control Variables

Predictor	B	SE B	β	t	p
Constant	0.85	0.42		2.02	.045
Physical infrastructure	0.09	0.06	.10	1.50	.135
Instructional resources	0.21	0.07	.23	3.00	.003
Teacher quality	0.18	0.07	.19	2.57	.011
School leadership	0.08	0.06	.09	1.33	.185
Safety and discipline	0.06	0.06	.07	1.00	.319
Community support	0.15	0.06	.16	2.50	.013
Gender (1 = male)	0.05	0.12	.03	0.42	.675
Age	-0.02	0.03	-.04	-0.67	.504

Model Summary: $R^2 = .34$, Adjusted $R^2 = .30$, $F(8, 171) = 11.03$, $p < .001$.

Source: Primary Data, 2026

Table 9 was the most analytically demanding of the tables, because it placed all six dimensions of school setting into competition with one another to determine which of them retained an independent relationship with PLE performance once the shared variance among the dimensions was removed. The results were revealing. Three dimensions survived the test: instructional resources, with $B = 0.21$ and $p = .003$; teacher quality, with $B = 0.18$ and $p = .011$; and community support, with $B = 0.15$ and $p = .013$. Three dimensions did not: physical infrastructure, with $B = 0.09$ and $p = .135$; school leadership, with $B = 0.08$ and $p = .185$; and safety and discipline, with $B = 0.06$ and $p = .319$.

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The prominence of instructional resources was the headline finding of the table. It had the largest coefficient of any dimension, and the strongest level of significance. Every additional unit of instructional resource provision was associated with a 0.21-unit gain in PLE performance, holding all other dimensions constant. When this is considered alongside the finding from Table 1 that instructional resources had the lowest mean score of any aspect of school setting, the implication is significant. The schools in Bubaare Town Council were weakest in precisely the area that mattered most for PLE performance, and strengthening this area offered the clearest route to improvement. This is a finding with direct practical implications, since instructional resources are also among the more tractable aspects of school setting to improve through targeted investment.

Teacher quality retained its significance with a coefficient of 0.18 and $p = .011$, confirming that the quality of teaching had an independent effect on performance even after controlling for the availability of materials. This was an important result because it showed that materials and teachers were not substitutes for one another. A school with excellent teachers but no textbooks would not perform as well as a school with excellent teachers and adequate textbooks, but neither would a school with plenty of textbooks and poor teachers. Both inputs mattered, and both needed attention. The persistence of teacher quality as a significant predictor also justified the high ratings that pupils had given it in the descriptive analysis, since those ratings were evidently tracking something real about instructional effectiveness.

Community support was the third dimension to remain significant, with a coefficient of 0.15 and $p = .013$. The survival of community support in a model that controlled for the other five dimensions was notable, because it suggested that the effect of community engagement on PLE performance was not simply a reflection of the material resources that communities provide to schools. Even after accounting for instructional resources, community support had an independent association with performance. The likely explanation is that communities contribute not only money and materials but also monitoring, expectations, and encouragement, all of which shape pupil effort and aspirations in ways that are not captured by resource measures.

The three dimensions that lost significance in the multiple regression had all been significantly correlated with PLE performance in Table 6, and the contrast between the two sets of results requires careful interpretation. Physical infrastructure had shown a zero-order correlation of .32 with performance, but its coefficient fell to 0.09 and became non-significant once the other dimensions were controlled. The most plausible explanation is that the apparent effect of infrastructure was largely mediated through instructional resources. Schools with better buildings also tended to have better materials, and it was the materials rather than the buildings that were doing the work. Once materials were accounted for, buildings added little. The same reasoning applies to school leadership, which had a zero-order correlation of .35 but a non-significant coefficient of 0.08 in the full model. Effective head teachers are likely to secure better resources and support better teaching, but their influence on performance appears to operate through those

channels rather than directly. Safety and discipline followed the same pattern, with a zero-order correlation of .29 but a non-significant coefficient of 0.06.

It is important to note that the non-significance of these three dimensions did not mean they were unimportant. It meant only that they did not have effects on PLE performance that were independent of the other aspects of school setting. Physical infrastructure, school leadership, and safety and discipline may still be essential conditions for a functioning school, and they may still influence other outcomes such as attendance, retention, and pupil wellbeing. Their role in this analysis was simply to explain less of the unique variance in PLE performance than instructional resources, teacher quality, and community support.

The control variables remained non-significant in this model as well, with gender at $B = 0.05$, $p = .675$, and age at $B = -0.02$, $p = .504$. This consistency across Tables 8 and 9 strengthened the conclusion that pupil characteristics were not driving the observed differences in performance, and that the school-level factors were doing the explanatory work.

The explanatory power of the full model was the highest of any model tested, with $R^2 = .34$ and adjusted $R^2 = .30$. This meant that the six dimensions of school setting, together with gender and age, accounted for 34% of the variance in PLE performance. The adjusted R^2 of .30 indicated that even after penalising the model for the number of predictors, it still explained 30% of the variance, which is a substantial figure in educational research. The F statistic of 11.03 with $p < .001$ confirmed that the model as a whole was highly significant. The improvement over the simple model in Table 7, which explained 22%, showed that disaggregating school setting into its constituent dimensions added genuine explanatory value. It was not enough to know that school setting mattered in general; it mattered to know which aspects of school setting mattered most, and Table 9 provided that answer.

7.0 Discussion of Results

The findings of this study confirm that school setting is meaningfully related to pupils' academic performance at PLE level in the selected government-aided primary schools in Bubaare Town Council. The comparatively low ratings for instructional materials and library facilities, coupled with the moderate PLE outcomes observed, are consistent with literature associating resource shortages in UPE schools with weaker learning outcomes (Ministry of Education and Sports, 2018; Nakabugo, 2019). The finding that classroom infrastructure and teacher-pupil ratio were the aspects most closely associated with better-performing schools aligns with the general understanding that physical learning conditions and the level of individual attention pupils receive are foundational to effective teaching and learning.

The relatively higher proportion of candidates in Division Three and Four, and the sizeable proportion ungraded, mirror patterns reported in other rural districts within the Kigezi sub-region, where infrastructural and resource constraints in government-aided schools have similarly been linked to moderate PLE outcomes (Ntabaazi & Byamugisha, 2020). Taken together, the results suggest that targeted investment in classroom infrastructure, instructional materials, and school environment improvements is likely to yield the greatest gains in PLE performance among the selected schools, complementing efforts to improve teacher-pupil ratios.

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8.0 Conclusion and Recommendations

The study concludes that school setting in the selected government-aided primary schools in Bubaare Town Council is generally moderate to weak, particularly with regard to instructional materials, library facilities, and the general school environment, and that a positive relationship exists between school setting and pupils' academic performance at PLE level, such that schools with more favourable settings recorded better PLE outcomes.

It is recommended that school administrations and the Ministry of Education and Sports prioritize investment in classroom infrastructure and the reduction of teacher-pupil ratios in the affected schools; that government-aided schools in Bubaare Town Council be supported to acquire adequate instructional materials and establish functional library facilities; that School Management Committees mobilize community and district support to improve sanitation, water, and recreational facilities; and that Rubanda District Local Government monitor and prioritize resource allocation to schools with the weakest school setting indicators. Further research could employ inferential statistical techniques to quantify the strength of the relationship between individual aspects of school setting and PLE performance, and extend the study to a larger sample of schools across Rubanda District.

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