

Leadership Styles of Principals and their Influence on Pupils' Academic Performance at the West African Senior School Certificate Examination in Selected Senior Secondary Schools in Sierra Leone

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Abstract This study investigated the influence of school leadership styles on pupils' academic performance at the West African Senior School Certificate Examination (WASSCE) from 2020 to 2024 in Kono District, Sierra Leone, a district that recorded the lowest WASSCE performance nationally, with only 4.51% of candidates meeting university entry requirements against a national average of 13.61%. Two research objectives guided the study: to identify the most prevalent leadership styles among school principals; and to examine the extent to which those leadership styles influence pupils' academic performance. A concurrent triangulation mixed-methods design was employed, with structured questionnaires administered to 17 principals and 151 pin coded teachers and semi-structured interviews conducted with 17 Community Teachers' Association (CTA) chairpersons, yielding a total sample of N = 185 across 17 purposively selected senior secondary schools. Quantitative data were analyzed using descriptive statistics, one-way Analysis of Variance (ANOVA), and chi-square, while qualitative data were thematically analyzed. The findings reveal that the democratic leadership style is the most prevalent, with 58.8% of principals self-reporting it as their dominant approach, while 35.3% reported a transformational style; no principal endorsed an autocratic or laissez-faire style. Teachers similarly identified the democratic style as most effective (55.6%). Although perceptions of leadership's influence were broadly positive with both principals and teachers endorsing instructional and democratic leadership as facilitators of academic performance inferential analysis found no statistically significant association between preferred leadership style and school performance ratings: ANOVA yielded $F(3, 147) = 1.37$, $p = 0.255$, and chi-square returned $\chi^2(6, N = 151) = 4.04$, $p = 0.671$ (Cramer's $V = 0.116$). The study concludes that while leadership style is a perceived and theoretically plausible contributor to academic performance, its measured association with WASSCE outcomes is weak when examined in isolation, owing to the mediating and moderating roles of poverty, teacher motivation, resource scarcity, parental engagement, and examination integrity. The study recommends targeted professional development for school principals, strengthening of instructional supervision, and a whole-system reform approach addressing the structural determinants of academic underperformance in Kono District.

Keywords: School Leadership Styles, Academic Performance, WASSCE, Instructional Leadership, Democratic Leadership, Kono District, Sierra Leone

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1. Introduction

School principals occupy a pivotal position within the architecture of secondary education, holding primary responsibility for the quality of teaching and learning, the

governance of institutional culture, and the mobilization of human and material resources toward the achievement of educational goals [1,2]. The principal's leadership does not merely administer an organization; it fundamentally shapes what teachers do, what students experience, and what examination outcomes a school achieves [3,4]. This insight that leadership constitutes one of the most potent

contextual determinants of educational outcomes, second only to classroom teaching, now commands broad empirical consensus in the global school effectiveness and improvement literature [3,5].

The study of leadership styles in schools has moved considerably beyond the early, behaviourally grounded typologies of democratic, autocratic, and laissez-faire leadership proposed by Lewin, Lippitt, and White [6]. Contemporary educational leadership scholarship identifies at least five theoretically distinct and empirically studied leadership frameworks as particularly salient for secondary school performance: transformational leadership [7,8], instructional leadership [1,9], distributed leadership [10,11], contingent/adaptive leadership [12], and democratic or participatory leadership [13,14]. Each framework carries distinctive propositions regarding the mechanisms through which leader behaviour influences teacher motivation, school culture, and ultimately student academic achievement.

Transformational Leadership Theory, first systematized by Burns [15] and extended to organizational and educational contexts by Bass [7] and Bass and Avolio [8], holds that leaders improve organizational performance by elevating followers' intrinsic motivation, fostering a shared vision, promoting intellectual stimulation, and attending to individual needs processes that enhance teachers' professional commitment and, through them, students' academic engagement and achievement [16,17]. Instructional Leadership Theory, developed by Hallinger and Murphy [1] and operationalized in the landmark synthesis by Robinson [2], frames the principal's core function as actively managing the school's curriculum and instructional programme, monitoring student progress, coordinating professional development, and maintaining high expectations for teaching quality. Robinson's [2] meta-analytic evidence demonstrated that instructional leadership has an effect on student outcomes three to four times larger than that of transformational leadership, though subsequent research has argued that integrated leadership combining transformational and instructional elements may be more effective than either style in isolation [4,18]. Path-Goal Theory [19] contributes a complementary perspective, proposing that effective leaders adapt their style directive, participatory, supportive, or achievement-oriented to match follower characteristics and task demands, a proposition with direct relevance to the democratic and contingent leadership styles examined in this study.

Distributed leadership views leadership as a collective practice rather than an activity exercised solely by the principal. It decongests school management by sharing leadership responsibilities, decision-making, problem-solving, and instructional improvement among teachers and other key stakeholders. This perspective recognises that the principal is not the only leader within the school and that involving teachers, pupils, parents, and community stakeholders can enhance participation, commitment, and the achievement of school goals, including improved academic performance [20]. However, distributed leadership may be less effective when teacher-leaders and other stakeholders lack the professional knowledge and training required to perform their leadership responsibilities effectively. Contingent or

adaptive leadership is based on the premise that no single leadership style is universally appropriate for all situations, tasks, or institutional environments [12]. Instead, effective leaders adapt their leadership behaviour according to the nature of the task, prevailing school conditions, staff capacity, and contextual demands. By recognising and responding to these contingent factors, school leaders may improve school effectiveness and academic performance [18,21]. However, contingent leadership can be criticised because decisions about which leadership approach is most appropriate may depend heavily on leaders' subjective judgements and their interpretation of specific situations. Democratic or participatory leadership emphasises consultation, teamwork, shared decision-making, communication, and consensus-building. It involves listening to teachers and other stakeholders and valuing their opinions, suggestions, and feedback [22]. This approach promotes collaboration, innovation, team spirit, and co-responsibility for achieving school goals. Evidence from Tanzania, for example, indicates that schools whose leaders adopted democratic leadership practices recorded better academic performance than schools where such practices were less evident [23,24]. However, democratic leadership may require considerable time to reconcile different views and reach consensus. It may also be most effective where team members possess sufficient experience, professional competence, and commitment to participate meaningfully in decision-making. In the context of this study, distributed leadership refers to the wider sharing of leadership functions and responsibilities across the school and its community, contingent leadership refers to the adaptation of leadership behaviour to particular situations and contextual demands, while democratic leadership focuses specifically on consultation, participation, and shared decision-making. These three perspectives complement transformational and instructional leadership by providing a broader framework for understanding how principals exercise leadership in senior secondary schools in Kono District.

The sub-Saharan African literature on school leadership and academic performance has grown substantially over the past decade, with studies from Nigeria, Kenya, Tanzania, Rwanda, and Ethiopia consistently reporting that principals' leadership practices particularly instructional oversight, teacher support, and participatory decision-making are significantly associated with students' national examination performance [23,25,26,27]. However, a recurring finding across this body of work is that the relationship between leadership style and measured student outcomes is rarely direct; rather, it is mediated by teacher motivation and commitment, moderated by contextual factors including resource availability and community engagement, and contingent on how leadership practices are received and enacted by teachers [4,28,29]. This mediated and contextually bounded relationship complicates the interpretation of any single district-level study and underscores the importance of examining leadership within its specific socioeconomic and institutional context.

Sierra Leone's senior secondary education sector presents a context of particular analytical interest. The WASSCE administered by the West African Examinations Council (WAEC) and taken at the

completion of the Senior Secondary School cycle, is the principal benchmark of secondary academic achievement across Sierra Leone, Ghana, Nigeria, The Gambia, and Liberia. Sierra Leone's national WASSCE results have historically reflected substantial inter-district variation, with some districts consistently underperforming relative to national benchmarks. Kono District a mineral-rich but infrastructurally marginalized district in the Eastern Province, recorded the lowest WASSCE university entry attainment rate nationally over the 2020–2024 period, at 4.51% of candidates meeting university entry thresholds against a national average of 13.61% [30]. This stark performance gap makes Kono District a compelling site for empirical investigation of the determinants of academic performance, including the role of school leadership.

1.1. Problem Statement

Despite the practical urgency of understanding what shapes academic outcomes in Kono District and the growing international literature on school leadership in African contexts, there remains limited empirical evidence on how principals' leadership styles are experienced and perceived in relation to WASSCE performance in the district. Kono presents a particularly important setting because its schools operate amid infrastructural constraints, teacher motivation challenges, limited learning resources, poverty, variable parental engagement, and other contextual factors that may condition the effects of school leadership. Existing studies often report positive relationships between leadership practices and student achievement, but the strength and direction of these relationships vary across contexts. The present study therefore addresses the need for district-specific evidence that combines respondents' experiences with available examination-performance information.

1.2. Research Objectives

1. To identify the most common leadership styles practiced by principals in selected senior secondary schools in Kono District.

2. To examine how principals, teachers, and community stakeholders perceive the influence of different leadership styles on pupils' academic performance at WASSCE.

Despite the practical urgency of understanding what shapes academic outcomes in Kono District, and the growing international literature on school leadership in African contexts, no systematic empirical study has previously examined the relationship between school leadership styles and WASSCE performance specifically in Kono District senior secondary schools. This study fills that gap by addressing two research objectives: first, to identify the most common leadership styles practiced by principals in Kono District senior secondary schools; and second, to examine the extent to which those leadership styles are associated with pupils' academic performance at WASSCE.

2. Research Methodology

2.1. Research Design

This study adopted a concurrent triangulation mixed-methods design, integrating a quantitative correlational strand with a qualitative interpretive strand [31]. Quantitative data were collected through structured questionnaires administered to principals and teachers and WASSCE performance master sheets extracted from participating schools and verified against district-level MBSSE data. Qualitative data were collected through semi-structured interviews with Community Teachers' Association (CTA) chairpersons. The two strands were analyzed independently and then integrated at the interpretation stage to generate a more complete understanding of the relationship between leadership styles and academic performance than either strand alone could provide [31]. The correlational approach within the quantitative strand allowed the study to assess the direction and strength of associations between leadership style variables and WASSCE performance without experimental manipulation [32].

2.2. Study Area

Kono District lies in the Eastern Province of Sierra Leone, sharing borders with Koinadugu District to the northeast, Kenema District to the southwest, Kailahun District to the southeast, and the Republic of Guinea to the east. Divided into fourteen chiefdoms, the district covers an area of approximately 5,641 km² and had an estimated population of 620,000 in 2025, located at approximately 8°45'N, 11°00'W [30]. Koidu City (Sefadu), the district capital, is situated approximately 344 km from Freetown and is the economic hub of Sierra Leone's diamond-mining industry. Despite its mineral wealth, the district experiences significant infrastructural deficits including poor road networks, limited electricity, and underfunded public services. The 44 senior secondary schools in Kono District constitute the study's accessible population.

2.3. Sampling and Sampling Techniques

Purposive sampling was used to select participating schools, principals, and CTA chairpersons on the basis of pre-specified eligibility criteria. For schools and principals to be included, the school must have operated continuously from 2020 to the time of data collection; the principal must have served in the current post for a minimum of five consecutive academic years (consistent with Robinson and Gray's [21] theoretical proposition that approximately five years of tenure are required for leadership style to manifest measurably in examination outcomes); the principal must have facilitated researcher access to WASSCE master sheets for 2020–2024; and the school must have had at least one pin coded (formally employed) teacher. Teachers were eligible if they held pin coded status, were engaged in

direct classroom instruction, and had at least one year of service in the school. CTA chairpersons were eligible if they served a school whose principal and at least one teacher fulfilled all applicable criteria.

Table 1 presents the resulting total population and actual sample by participant category. Practical field constraints including the unavailability of WASSCE master sheets in 10 schools, principal absences in 6 schools, absence of pin coded teachers beyond the principal in 7 schools, and road inaccessibility affecting 4 schools, resulted in a final sample of 17 schools from the base population of 44, representing 39% of all eligible institutions. The total sample of 185 respondents comprised 17 principals (39% of the population), 151 pin-coded teachers (45%), and 17 CTA chairpersons (39%).

Table 1. Total population and actual sample by participant category

Designation	Population (N)	Actual Sample	Proportion
Principals	44	17	39%
Pin coded Teachers	337	151	45%
CTA Chairpersons	44	17	39%
Total	425	185	44%

Note. Source: Developed by the researcher based on MBSSE Annual School Census (2022) and field data.

2.4. Data Collection Instruments and Procedure

Primary data were collected through three instruments. For principals, a self-administered structured questionnaire measured leadership style (self-reported dominant style and five behavioural items on a five-point Likert scale) and perceptions of the influence of each leadership style on academic performance. For teachers, a separate questionnaire assessed perceived principal leadership behaviours, the most effective leadership style, and views on the influence of each style on academic performance. CTA chairpersons participated in semi-structured interviews of approximately 45 minutes each, guided by twelve questions organized around the two research objectives; sessions were audio-recorded with consent. WASSCE master sheet data for 2020–2024 were obtained directly from principals and cross-referenced with district-level MBSSE records to compute school-level performance indices. Content validity was ensured through expert review by three educational researchers and two serving principals, and cross-referencing items with validated instruments used in comparable studies [24,29]. Internal consistency was assessed using Cronbach's alpha, with a minimum acceptable threshold of 0.70 [33]. Face validity of qualitative instruments was assessed through iterative pilot testing.

2.5. Data Analysis

Quantitative data were entered into SPSS Version 26 and Microsoft Excel for cleaning and analysis. Descriptive statistics (frequencies, percentages, means, and standard deviations) were computed for all questionnaire items and for the WASSCE performance data. One-way Analysis of Variance (ANOVA) examined differences in the performance index across preferred leadership style

groups. Chi-square analysis tested the association between teachers' preferred leadership style and their rating of school performance. Cramer's V quantified the strength of association. Binary logistic regression was run to predict performance category from leadership style variables. Statistical significance was set at $p < 0.05$ throughout. Qualitative data from CTA interview transcripts were thematically analyzed following the six-phase process described by Seidman [34], coding iteratively to identify recurring themes across the two objectives, with the number of chairpersons endorsing each theme reported to indicate its prominence.

2.6. Ethical Considerations

This study was conducted in full compliance with ethical principles governing educational research involving human participants. Institutional ethical approval was obtained prior to data collection. Written permission was sought from the MBSSE Deputy Director, Kono, and verbal authorization was granted. All participants provided voluntary informed consent after being informed of the study's purpose, their right to withdraw without consequence, and confidentiality protections. No individual or school is identified by name in the reporting of findings; codes and generic descriptors are used throughout. The principles of non-maleficence, data integrity, and honest reporting were upheld at all stages of the study.

3. Results and Discussion

3.1. Demographic Characteristics of Respondents

Table 2. Demographic characteristics of principals and teachers

Characteristic	Category	Principals (n=17)	Teachers (n=151)
Gender	Male	14 (82.4%)	120 (79.5%)
	Female	3 (17.6%)	31 (20.5%)
Qualification	HTC	0 (0.0%)	62 (41.1%)
	Bachelor's Degree	9 (52.9%)	52 (34.4%)
	Master's Degree	8 (47.1%)	23 (15.2%)
	PhD	0 (0.0%)	14 (9.3%)
Experience	Less than 5 years	0 (0.0%)	36 (23.8%)
	6–10 years	14 (82.4%)	41 (27.2%)
	More than 10 years	3 (17.6%)	74 (49.2%)
School Type	Government	1 (5.9%)	25 (16.6%)
	Government-Assisted	15 (88.2%)	115 (76.2%)
	Private	1 (5.9%)	11 (7.3%)
School Category	Co-educational	14 (82.4%)	120 (79.5%)
	Single-sex (male)	1 (5.9%)	19 (12.6%)
	Single-sex (female)	2 (11.8%)	12 (7.9%)

Note. Values are frequencies with column percentages in parentheses. Percentages may not total 100 owing to rounding.

Table 2 presents the demographic profiles of the 17 principal and 151 teacher respondents. Males dominated both groups: 82.4% of principals and 79.5% of teachers,

reflecting the broader gender composition of the senior secondary school leadership and teaching workforce in Sierra Leone. Principals were well-qualified: 52.9% held bachelor's degrees and 47.1% master's degrees, with none holding only a Higher Teacher's Certificate (HTC). In contrast, 41.1% of teachers held an HTC and only 34.4% a bachelor's degree, though 9.3% held PhDs suggesting that graduate-level scholars may be concentrated in teaching roles rather than administrative ones. The majority of principals (82.4%) had 6–10 years of experience, consistent with the purposive criterion requiring a minimum of five years in post, while 49.2% of teachers had more than ten years of experience, indicating a relatively experienced teaching force across the sampled schools. The predominance of Government-Assisted schools (88.2% of principals; 76.2% of teachers) reflects the governance structure of Kono District's secondary school landscape, in which government-assisted institutions represent the largest institutional category. Co-educational schools constituted 82.4% of the principal sample, consistent with the district's demographic reality.

The qualitative strand drew on semi-structured

interviews with 17 CTA chairpersons (13 men, 4 women), 9 of whom held HTCs, 5 bachelor's degrees, 2 doctorates, and 1 a master's degree. Most had been associated with their respective schools for six years or more. Responses were analyzed thematically; recurring themes are reported by objective, with the number of chairpersons endorsing each theme indicating its relative prominence.

3.2. Leadership Styles among Principals in Kono District Senior Secondary Schools

Table 3 presents principals' self-reported dominant leadership style and frequency distributions on four behavioural items. The findings confirm the democratic style as the most prevalent: 58.8% of principals identified it as their dominant approach, while 35.3% reported a transformational style and only one principal (5.9%) reported a combination of democratic and instructional leadership. Notably, no principal identified with an autocratic or laissez-faire style, which may reflect genuine practice but may also indicate social desirability a limitation acknowledged below.

Table 3. Principals' self-reported leadership styles and behaviours (N = 17)

Measure and Response Category	Frequency n (%)	Mean $\pm$ SD
Self-reported dominant leadership style		
Democratic	10 (58.8%)	—
Transformational	6 (35.3%)	—
Democratic and Instructional	1 (5.9%)	—
Involves teachers in decision-making		4.24 $\pm$ 0.66
Never	0 (0.0%)	
Rarely	0 (0.0%)	
Sometimes	2 (11.8%)	
Often	9 (52.9%)	
Always	6 (35.3%)	
Makes decisions alone without consultation		2.12 $\pm$ 0.86
Never	4 (23.5%)	
Rarely	8 (47.1%)	
Sometimes	4 (23.5%)	
Often	1 (5.9%)	
Always	0 (0.0%)	
Encourages innovation and new teaching methods		3.65 $\pm$ 1.11
Never	0 (0.0%)	
Rarely	3 (17.6%)	
Sometimes	5 (29.4%)	
Often	4 (23.5%)	
Always	5 (29.4%)	
Closely monitors teaching and learning		4.24 $\pm$ 0.56
Never	0 (0.0%)	
Rarely	0 (0.0%)	
Sometimes	1 (5.9%)	
Often	11 (64.7%)	
Always	5 (29.4%)	

Note. Mean (M) and standard deviation (SD) are computed on a 1–5 Likert scale. Percentages may not total 100 owing to rounding. " indicates items where M/SD are not applicable.

At the behavioural level, 'Involves teachers in decision-making' and 'Closely monitors teaching and learning' each recorded the highest mean score ($M = 4.24$), with 88.2% and 94.1% of principals respectively, reporting that they engage in these behaviours 'often' or 'always'. The low standard deviation for 'Closely monitors teaching and learning' ($SD = 0.56$) indicates the strongest consensus of

all measured behaviours, confirming instructional supervision as a near-universal practice among the principal sample. In contrast, 'Encourages innovation and new teaching methods' showed the greatest variability ($SD = 1.11$), suggesting that openness to pedagogical innovation varies more widely across principals. 'Makes decisions alone without consultation' recorded the lowest

mean ($M = 2.12$), with 70.6% of principals reporting they 'never' or 'rarely' make unilateral decisions consistent with the self-reported dominance of democratic leadership.

The behavioural indicators were based on principals' self-reports of specific practices rather than on a claim that the questionnaire independently verified actual leadership behaviour. For example, principals reported involving teachers through consultation and participation in school decisions and reported monitoring teaching and learning through classroom oversight, review of instructional activities, and attention to teaching progress. These reports were considered alongside teachers' responses and CTA chairpersons' interview accounts. Teachers independently rated principals' involvement in decisions and monitoring of teaching and learning, while CTA chairpersons described how principals consulted staff, supervised instructional work, and coordinated school activities. The convergence across these sources provides qualitative corroboration, although the study recognises that self-report and stakeholder perceptions cannot establish objective behavioural performance with certainty.

3.3. Teachers' Perceptions of Leadership Behaviours and Pupils' Academic Performance at WASSCE

Table 4 presents teachers' perceptions of principal leadership behaviours and the style they identified as most effective. 'Closely monitors teaching and learning (Instructional)' recorded the highest mean score among behavioural items ($M = 3.84$, $SD = 1.23$), with approximately 66.2% of teachers reporting that principals engage in this behaviour 'often' or 'always'. Closely following were 'Allows freedom to act independently (Laissez-faire)' and 'Inspires through vision and encouragement (Transformational)', both at $M = 3.79$, the former with $SD = 1.15$ and the latter with $SD = 1.13$. The relatively low standard deviation for 'Inspires through vision and encouragement' indicates broad agreement among teachers that principals engage in motivational and visionary behaviours. 'Decides without consulting teachers (Autocratic)' showed the greatest variability ($SD = 1.44$), suggesting considerably divergent experiences of autocratic decision-making across schools and respondents.

Regarding the most effective style, a majority of teachers (55.6%) identified the democratic style, followed by transformational (17.2%), instructional (15.2%), autocratic (6.0%), and laissez-faire (6.0%). The convergence between teachers' perceptions of what constitutes effective leadership and the self-reported practices of principals both centred on democratic and instructional approaches is an important substantive finding consistent with the broader literature on participatory and instructionally focused leadership in African secondary school contexts [24,23,29].

CTA chairpersons reinforced these findings in the qualitative strand. Of the 17 interviewed, 8 identified the democratic style as the most prevalent in their school, followed by transformational (4) and instructional (3); autocratic and laissez-faire styles were each mentioned only once. Chairpersons described principals as motivating teachers through consultation, recognition,

and encouragement. One chairperson's observation was emblematic of the broader qualitative consensus: 'Democratic leadership is the best for our schools because it easily promotes co-responsibility, a single person cannot effectively run a school.' This aligns closely with the distributed leadership perspective of Spillane et al. [10], which emphasizes that effective school leadership distributes influence across multiple organizational actors rather than concentrating authority in a single positional leader.

Table 4. Teachers' perceptions of leadership behaviours

Measure and Response Category	Frequency n (%)	Mean $\pm$ SD
Involves teachers in decisions (Democratic)		3.77 $\pm$ 1.22
Never	10 (6.6%)	
Rarely	14 (9.3%)	
Sometimes	30 (19.9%)	
Often	43 (28.5%)	
Always	54 (35.8%)	
Decides without consulting teachers (Autocratic)		3.05 $\pm$ 1.44
Never	31 (20.5%)	
Rarely	27 (17.9%)	
Sometimes	27 (17.9%)	
Often	35 (23.2%)	
Always	31 (20.5%)	
Allows freedom to act independently (Laissez-faire)		3.79 $\pm$ 1.15
Never	6 (4.0%)	
Rarely	16 (10.6%)	
Sometimes	34 (22.5%)	
Often	43 (28.5%)	
Always	52 (34.4%)	
Inspires through vision and encouragement (Transformational)		3.79 $\pm$ 1.13
Never	6 (4.0%)	
Rarely	16 (10.6%)	
Sometimes	31 (20.5%)	
Often	49 (32.5%)	
Always	49 (32.5%)	
Closely monitors teaching and learning (Instructional)		3.84 $\pm$ 1.23
Never	10 (6.6%)	
Rarely	13 (8.6%)	
Sometimes	28 (18.5%)	
Often	40 (26.5%)	
Always	60 (39.7%)	
Supports teachers' professional development		3.70 $\pm$ 1.13
Never	8 (5.3%)	
Rarely	14 (9.3%)	
Sometimes	35 (23.2%)	
Often	52 (34.4%)	
Always	42 (27.8%)	
Style identified as most effective		
Democratic	84 (55.6%)	
Transformational	26 (17.2%)	
Instructional	23 (15.2%)	
Autocratic	9 (6.0%)	
Laissez-faire	9 (6.0%)	

Note. Mean (M) and SD are computed on a 1–5 Likert scale. Percentages may not total 100 owing to rounding.

3.4. ANOVA Analysis on Teachers' Perceptions of Leadership Behaviours and Pupils' Academic Performance at WASSCE

Table 5 presents the one-way ANOVA results examining whether teachers' preferred leadership style was associated with differences in the mean performance index. The ANOVA found no statistically significant difference across the four preferred-style groups ($F(3, 147) = 1.37, p = 0.255; \eta^2 = 0.027$). The small effect size ($\eta^2 = 0.027$) further confirms that the proportion of variance in performance accounted for by preferred leadership style was negligible. Although the transformational-preference group recorded a marginally higher mean performance index ($M = 3.55$) than the democratic-preference group ($M = 3.35$) or the other-style group ($M = 3.20$), these differences were not statistically meaningful.

Table 5. One-way ANOVA: Academic performance index by teachers' preferred leadership style

Preferred Style Group	n	Mean (M)	SD
Democratic	84	3.35	0.65
Transformational	26	3.55	0.49
Instructional	23	3.41	0.40
Other (Autocratic / Laissez-faire)	18	3.20	0.61

Note. $n = 151$. M = mean of the performance index (1–5 scale). $F(3, 147) = 1.37, p = 0.255, \eta^2 = 0.027$. Performance index derived from WASSCE master sheets cross-referenced with MBSSE district data (2020–2024).

3.5. Principals' Views on the Influence of Leadership Styles on Academic Performance

Table 6 presents principals' perceptions of the influence of different leadership styles on academic performance. The strongest consensus was recorded for 'Poor leadership practices lead to low outcomes' ($M = 4.53, SD = 0.62$; 94.1% agreed or strongly agreed), indicating a near-universal recognition among principals that ineffective leadership harms academic performance. 'Instructional leadership improves results' exhibited the lowest variability of all items ($SD = 0.53$), with 94.1% of principals agreeing or strongly agreeing, a finding that reinforces the international evidence base on the efficacy of instructional leadership as a determinant of student examination outcomes [2,18,9].

In this study, instructional leadership does not imply that principals personally teach the majority of lessons. Rather, it refers to the principal's leadership of the instructional programme, including monitoring teaching and learning, supporting teachers, coordinating curriculum implementation, encouraging professional development, reviewing progress, and maintaining expectations for teaching quality. Thus, principals' endorsement of instructional leadership reflects their perceived responsibility for creating conditions for effective teaching rather than replacing classroom teachers.

'Autocratic leadership negatively affects performance' was similarly strongly endorsed ($M = 4.29$; 94.1% agreement), consistent with principals' self-reported aversion to unilateral decision-making and their

preference for collaborative approaches. 'Allows teachers freedom to work independently' recorded the widest spread of responses ($SD = 1.22$), suggesting that principals were more divided on the consequences of granting teachers substantial autonomy, a pattern that may reflect the structural demands of a resource-constrained context in which laissez-faire oversight can translate into disengagement rather than professional autonomy.

Table 6. Principals' views on the influence of leadership styles on academic performance

Measure and Response Category	Frequency n (%)	Mean $\pm$ SD
Democratic leadership positively influences performance		4.18 $\pm$ 0.73
Strongly disagree	0 (0.0%)	
Disagree	1 (5.9%)	
Neutral	0 (0.0%)	
Agree	11 (64.7%)	
Strongly agree	5 (29.4%)	
Autocratic leadership negatively affects performance		4.29 $\pm$ 0.77
Strongly disagree	0 (0.0%)	
Disagree	1 (5.9%)	
Neutral	0 (0.0%)	
Agree	9 (52.9%)	
Strongly agree	7 (41.2%)	
Instructional leadership improves results		4.18 $\pm$ 0.53
Strongly disagree	0 (0.0%)	
Disagree	0 (0.0%)	
Neutral	1 (5.9%)	
Agree	12 (70.6%)	
Strongly agree	4 (23.5%)	
Poor leadership practices lead to low outcomes		4.53 $\pm$ 0.62
Strongly disagree	0 (0.0%)	
Disagree	0 (0.0%)	
Neutral	1 (5.9%)	
Agree	6 (35.3%)	
Strongly agree	10 (58.8%)	
My leadership style positively contributed to results		3.94 $\pm$ 0.66
Strongly disagree	0 (0.0%)	
Disagree	0 (0.0%)	
Neutral	4 (23.5%)	
Agree	10 (58.8%)	
Strongly agree	3 (17.6%)	
Allows teachers freedom to work independently (Laissez-faire)		2.88 $\pm$ 1.22
Never	2 (11.8%)	
Rarely	5 (29.4%)	
Sometimes	5 (29.4%)	
Often	3 (17.6%)	
Always	2 (11.8%)	

Note. M and SD are computed on a 1–5 Likert scale (items 2–6) or 1–5 frequency scale (item 1). Percentages may not total 100 owing to rounding.

3.6. Teachers' Views on the Influence of Leadership Styles on Academic Performance

Table 7 presents teachers' perceptions of the influence of various leadership styles on academic outcomes.

'Effective leadership improves academic outcomes' was both the highest-rated item ($M = 4.19$, $SD = 0.91$) and the least variable, with 81.4% of teachers agreeing or strongly agreeing. This finding affirms a strong professional consensus that school leadership quality matters for students' examination performance. Among style-specific items, 'Instructional leadership improves performance' recorded the next highest mean ($M = 3.97$, $SD = 0.95$), followed by 'Democratic leadership positively influences outcomes' ($M = 3.92$), 'Autocratic leadership negatively influences outcomes' ($M = 3.91$), 'Transformational leadership improves performance' ($M = 3.90$), and 'Laissez-faire leadership leads to poor supervision' ($M = 3.87$).

'Transformational leadership improves performance' exhibited the widest spread ($SD = 1.14$), suggesting greater divergence in teachers' direct experiences of transformational leadership's impact. Despite these broadly positive perceptions, the chi-square analysis (Table 8) found no statistically significant association between teachers' preferred leadership style and their categorical rating of school performance ($\chi^2(6, N = 151) = 4.04$, $p = 0.671$; Cramer's $V = 0.116$). The negligible Cramer's V value confirms that the relationship between preferred leadership style and perceived performance level was effectively zero, echoing the ANOVA result reported above.

Table 7. Teachers' views on the influence of leadership styles on academic performance (N = 151).

Measure and Response Category	Frequency n (%)	Mean $\pm$ SD
Democratic leadership positively influences outcomes		3.92 $\pm$ 1.04
Strongly disagree	4 (2.6%)	
Disagree	17 (11.3%)	
Neutral	13 (8.6%)	
Agree	70 (46.4%)	
Strongly agree	47 (31.1%)	
Autocratic leadership negatively influences outcomes		3.91 $\pm$ 1.12
Strongly disagree	9 (6.0%)	
Disagree	9 (6.0%)	
Neutral	20 (13.2%)	
Agree	61 (40.4%)	
Strongly agree	52 (34.4%)	
Transformational leadership improves performance		3.90 $\pm$ 1.14
Strongly disagree	8 (5.3%)	
Disagree	14 (9.3%)	
Neutral	15 (9.9%)	
Agree	62 (41.1%)	
Strongly agree	52 (34.4%)	
Instructional leadership improves performance		3.97 $\pm$ 0.95
Strongly disagree	2 (1.3%)	
Disagree	14 (9.3%)	
Neutral	16 (10.6%)	
Agree	74 (49.0%)	
Strongly agree	45 (29.8%)	
Laissez-faire leadership leads to poor supervision		3.87 $\pm$ 1.03
Strongly disagree	6 (4.0%)	
Disagree	11 (7.3%)	
Neutral	22 (14.6%)	
Agree	69 (45.7%)	
Strongly agree	43 (28.5%)	
Effective leadership improves academic outcomes		4.19 $\pm$ 0.91
Strongly disagree	1 (0.7%)	
Disagree	9 (6.0%)	
Neutral	18 (11.9%)	
Agree	55 (36.4%)	
Strongly agree	68 (45.0%)	

Note. M and SD are computed on a 1–5 Likert scale. Percentages may not total 100 owing to rounding.

3.7. Chi-Square Analysis: Preferred Leadership Style and Performance Category

Table 8 presents the cross-tabulation of teachers' preferred leadership style against their categorical rating of school performance (low, moderate, high). The distribution of performance ratings was broadly similar across all style-preference groups, with the majority of

respondents in each group rating their school's performance as moderate or high. No meaningful pattern of association is evident from the cell frequencies. As reported above, the chi-square test confirmed no significant association ($\chi^2(6, N = 151) = 4.04$, $p = 0.671$).

The qualitative findings from CTA interviews added important texture to these quantitative results. When asked which styles most improved academic results, 16 of 17 chairpersons identified the democratic style, and 15 of 17

also endorsed transformational leadership. Ten chairpersons indicated that autocratic leadership harms outcomes, and laissez-faire approaches were viewed negatively. One chairperson summarised the dominant view compellingly: 'Democratic leadership can easily help to bring about academic excellence because it carries everybody along, including the pupils.' Their recommendations centred on strengthening school leadership (8 of 17) and increasing parental involvement (5 of 17), signaling awareness that academic improvement requires action beyond leadership style alone.

Table 8. Cross-tabulation of preferred leadership style and performance category (N = 151)

Preferred Style	Low n (%)	Moderate n (%)	High n (%)	Total
Democratic	19 (22.6)	28 (33.3)	37 (44.0)	84
Transformational	3 (11.5)	10 (38.5)	13 (50.0)	26
Instructional	6 (26.1)	7 (30.4)	10 (43.5)	23
Other (Autocratic/Laissez-faire)	5 (27.8)	3 (16.7)	10 (55.6)	18
Total	33	48	70	151

Note. Values are frequencies with row percentages in parentheses. $\chi^2(6, N = 151) = 4.04$, $p = 0.671$, Cramer's $V = 0.116$.

The overarching finding that leadership style is perceived positively and theoretically linked to performance, but that its measured statistical association with examination outcomes is weak when examined independently, requires cautious interpretation. The ANOVA and chi-square analyses were included to examine whether the observed patterns in respondents' preferred leadership styles corresponded with measurable differences in performance; they were not intended to establish causality. The qualitative strand was essential because leadership is a context-dependent and relational phenomenon that may not be adequately captured by statistical comparisons alone. The interviews revealed how consultation, supervision, motivation, autonomy, and accountability were perceived to influence school performance and also highlighted the roles of parental involvement and structural constraints. Thus, the mixed-methods design provides value beyond the statistical tests by combining measurable patterns with contextual explanations. The mediated effects model of school leadership proposed by Leithwood et al. [4,35] argues that leadership does not directly cause improved student outcomes; rather, it influences classroom instruction and student learning indirectly through motivational, relational, and professional pathways. In Kono District, where poverty, inadequate teaching materials, weak parental involvement, examination malpractice, and teacher absenteeism are documented structural constraints on educational outcomes [36,30], the contribution of any single leadership style may be attenuated by these systemic barriers. The instructional leadership approach, identified as consistently influential in respondent perceptions, has a strong empirical basis internationally [2,18], but its realization depends on curriculum materials, teacher professional development, and institutional stability. Consequently, the quantitative findings should be interpreted as evidence of limited observed association rather than evidence that leadership is

unimportant. The qualitative findings indicate that leadership remains potentially consequential, but its effects are likely mediated by the wider educational environment in which principals, teachers, pupils, families, and communities operate.

4. Conclusion

The study concluded that democratic leadership is the dominant leadership style among principals in senior secondary schools in Kono District, complemented by transformational and instructional leadership, while autocratic and laissez-faire styles are least practiced. Although these participatory leadership styles were widely perceived by principals, teachers, and CTA chairpersons to positively influence pupils' academic performance, statistical analysis found a weak and non-significant relationship between leadership style and WASSCE performance, suggesting that academic achievement is influenced more by broader structural and contextual factors than by leadership style alone.

5. Recommendations

The study recommends strengthening principals' capacity through professional development in democratic, transformational, and instructional leadership, establishing mentoring and professional learning networks, and improving principal recruitment and supervision. It also calls for broader educational reforms addressing poverty, teaching resources, teacher motivation, parental involvement, and examination integrity, while recommending further longitudinal research to better understand how leadership influences academic performance over time.

6. Limitations of the Study

This study's findings carry important caveats. The field environment in Kono District imposed significant sampling constraints: poor road infrastructure, absent principals, missing WASSCE master sheets, and the absence of pin coded teachers in several schools reduced the final sample to 17 of 44 eligible schools. These constraints mean that the findings reflect the schools best positioned to participate and may not fully represent the most marginalized and resource-poor institutions in the district. Self-report data on leadership style introduce the possibility of social desirability bias, particularly given the near-total absence of self-reported autocratic or laissez-faire styles. WASSCE master sheets were not available for all schools across all five years of the study period, and the 2025 cohort could not be included as WAEC had not released results at the time of data collection. Finally, the cross-sectional design precludes causal inference, and the sample size while purposively adequate limits the power of inferential tests to detect modest effect sizes.

Conflicts of Interest: the authors declare no conflicts of interest

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