

Article

Examining the Self-Reported Instructional Leadership Practices of Science Heads of Departments in Lesotho Secondary Schools

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Abstract

Instructional leadership is crucial for improving teaching quality and student academic performance, especially in secondary schools where Heads of Department (HoDs) play a vital role. Despite this, there is no empirical evidence on how Science HoDs provide instructional leadership in Lesotho. This study looked at the self-reported instructional leadership techniques of Science HoDs in Lesotho secondary schools and whether they vary based on specific demographic and workload criteria. Using a quantitative descriptive survey approach, data were obtained from 67 Science HoDs using a paper-based questionnaire adapted from the Principal Instructional Management Rating Scale (PIMRS). Descriptive statistics and inferential analysis were employed (t-tests and ANOVA). The data indicate that Science HoDs frequently used tactics such as goal planning and communication, curriculum coordination, learner progress monitoring, teaching time management, and instructional resource availability. However, high-impact pedagogical approaches, such as classroom observation, formal written feedback, and systematic evaluation of teacher learning, were less frequently implemented. Except for the number of courses taught, instructional leadership strategies showed no significant differences by age, gender, qualification, experience, teaching load, or school location. The study reveals a preference for administrative rather than pedagogical instructional leadership, highlighting the need for targeted professional development and policy support to improve HoDs' capacity for sustained instructional practices in science education.

Keywords: heads of department; instructional leadership practices; science; Principal Instructional Management Rating Scale (PIMRS); school leadership

1. Introduction

School leadership is widely regarded globally as a vital driver of teaching quality, student achievement, equity, and systemic transformation (Hallinger et al., 2015; Hallinger & Hosseingholizadeh, 2020; Leithwood et al., 2020). In this regard, it is acknowledged that developing effective leadership practices is critical for attaining regional (e.g., Agenda 2063) and international (e.g., Sustainable Development Goals) goals on education (Hallinger, 2018; O'shea & Zuckerman, 2022). However, research on how school leadership is implemented in African contexts is scarce, fragmented, and weakly linked to policy and practice (Hallinger, 2018). This fragmentation impedes the effective delivery of educational programs. Distributed instructional leadership can help resolve educational issues arising from inadequacies in school leadership (Bush, 2023; Spillane, 2005). It is an

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emerging leadership paradigm that transforms leadership from a principal-centered practice to one comprising deputy principals, heads of departments (HoDs), teacher leaders, and students (Spillane, 2005). Hence, there is a need to explore the distributed instructional practices in African contexts.

Within the broader international discourse of school leadership, instructional leadership has emerged as a central lever for improving teaching quality and learner achievement because it directly engages with classroom instruction—such as classroom observation, feedback, curriculum coordination, and monitoring of learner progress—have significant effects on student outcomes (Bush, 2015; Chabalala & Naidoo, 2021; Hallinger et al., 2015; Nguyen et al., 2022). Hallinger and Hosseingholizadeh (2020) assert that effective instructional leaders create clear goals, support teacher learning, use assessment data to guide improvement, and cultivate environments that prioritise teaching and learning. The role of middle leaders in the school leadership has garnered extensive attention in recent years (Bush, 2023; Chabalala & Naidoo, 2021; Shaked & Schechter, 2019). Within the framework of school leadership, HoDs are important middle leaders due to their proximity to the classroom (Bush, 2023; Malinga et al., 2021; Seobi & Wood, 2016). Particularly, HoDs play an important role in shaping the quality of instruction, especially in secondary schools where subject expertise and curriculum specialisation are essential (Bush, 2023; Shaked & Schechter, 2019). HoDs often serve as the primary instructional leaders because principals are heavily burdened with administrative responsibilities, and usually lack subject-specific expertise to perform instructional leadership functions related to classroom enactment effectively (Mestry, 2017). Alrayes (2025) adds that HoDs contribute to the academic success of institutions. Thus, the effectiveness of instructional leadership frequently depends on HoDs' ability to support teachers, monitor curriculum implementation, and engage directly with classroom practice.

Despite the recognised importance of instructional leadership, both regional and international research indicates a persistent gap between the ideal and actual enactment of instructional leadership practices. Globally, school leaders often prioritise managerial and administrative duties over pedagogical engagement due to time constraints, policy pressures, and role expectations (Chabalala & Naidoo, 2021; O'shea & Zuckerman, 2022; Spillane, 2005). For instance, regional studies (such as Chabalala & Naidoo, 2021; Malinga et al., 2021) indicate that HoDs tend to excel in administrative and coordination tasks, such as organising departmental meetings and ensuring curriculum coverage, but engage less frequently in high-impact practices like structured classroom observations, sustained feedback cycles, and systematic teacher development. This disconnect is under-examined in many national contexts, including Lesotho.

In Lesotho, HoDs are tasked with the responsibility of overseeing the running of subject-specific departments (e.g., Science department), wherein they perform several instructional leadership functions (Tlali & Matete, 2021). Although this role is central to successful teaching and learning, limited empirical evidence exists regarding how science HoDs enact instructional leadership practices in the Lesotho context. The lack of such evidence hinders efforts to strengthen school leadership practices, develop targeted capacity-building initiatives, and align school leadership roles with national and regional education priorities. Given the global and regional emphasis on improving instructional leadership as a strategy for raising learning outcomes, understanding the extent and nature of science HoDs' instructional leadership practices in the region is both timely and necessary. Therefore, this study contributes to filling the gap by examining the self-reported instructional leadership practices of Lesotho science HODs in selected secondary schools.

In response to this gap, the present study investigates the self-reported instructional leadership practices of science heads of departments in Lesotho secondary schools. Specifically, the study addresses the following research questions:

1. What instructional leadership practices do science heads of departments report enacting in Lesotho secondary schools?
2. Are there significant differences in heads of departments' self-reported instructional leadership practices based on age, gender, years of experience, qualification, workload, and school location?

The inferential analysis for research question 2 was guided by the null hypothesis: *There are no statistically significant differences in heads of departments' self-reported instructional leadership practices based on age, gender, years of experience, qualification, workload, and school location.* This hypothesis was tested using t-tests and ANOVA tests across the specific demographic and workload variables.

The findings of this study may not only inform decisions on school leadership in Lesotho context, but may also increase our global understanding of the state of school leadership. The study provides context-specific evidence that sheds light on how instructional leadership is enacted in everyday school practice in developing countries, informing meaningful educational reforms. Thus, the study addresses a critical knowledge gap by providing empirical insights into the instructional leadership practices of science HoDs in Lesotho—insights that could inform practices across the region. The rationale for focusing on science HoDs is threefold. First, science subjects are central to national and global development goals, and their effective teaching requires strong instructional guidance. Second, HoDs are uniquely positioned as subject experts capable of providing pedagogical support, yet their actual leadership practices remain understudied (Shaked & Schechter, 2019; Tlali & Matete, 2021). Third, understanding HoD's strengths and limitations enables policymakers, school leaders, and teacher education institutions to design targeted interventions that enhance instructional quality. By situating the findings within regional and international scholarship on instructional leadership, the study contributes to the broader discourse on how middle leaders can drive instructional improvement, particularly in resource-constrained environments.

1.1. Perspectives on Instructional Leadership

Globally, instructional leadership frameworks emphasise the importance of leaders directly shaping the teaching and learning environments. Hallinger et al.'s (2015) leadership-for-learning model identifies three core domains: defining the school mission, managing the instructional program, and fostering a positive learning climate. Leaders enact these through activities such as aligning curriculum, monitoring instruction, and supporting teacher development. One of the most influential international findings comes from Robinson et al. (2008), who demonstrated through meta-analysis that leadership practices involving direct engagement with teacher learning—such as coaching, feedback, and structured evaluation—have the most substantial effect on student achievement. Similarly, Hattie's (2015) global synthesis ranks instructional leadership among high-impact factors, as it influences teacher clarity, assessment practices, and collective teacher efficacy.

Scholars have expanded theoretical leadership constructs by examining how contextual realities shape leadership practice. For instance, studies in South Africa and Zimbabwe show that although HoDs and principals possess a conceptual understanding of instructional leadership, their practice often gravitates toward administrative and coordination tasks due to systemic constraints such as heavy teaching loads, compliance pressures, and limited training (Chabalala & Naidoo, 2021; Mestry, 2017). These regional insights suggest that the enactment of instructional leadership is uneven: curriculum coordination and resource management are highly implemented, whereas classroom observation, written feedback, and teacher mentoring are less common. The regional literature therefore supports an adapted conceptual understanding of instructional leadership in

African contexts—one that acknowledges the importance of traditional constructs (e.g., supervision, feedback, goal-setting) but also recognizes the structural constraints that shape how middle leaders interpret and prioritize these roles. This hybridised understanding forms the basis for the conceptual framework of this study.

In many African education systems, Heads of Department (HoDs) serve as the primary instructional leaders given principals' administrative loads (Chabalala & Naidoo, 2021; Malinga et al., 2021; Tlali & Matete, 2021). For instance, Malinga et al. (2021) found that South African Natural Sciences HoDs understood their instructional responsibilities but reported limited time and insufficient training for observation and feedback. Similarly, Sengai's (2021) Zimbabwean study demonstrated that while HoDs excelled in coordinating curriculum implementation and organizing departmental meetings, they struggled to sustain ongoing teacher supervision. Collectively, these regional studies reveal that HoDs function effectively as coordinators but less effectively as instructional coaches—a finding consistent with global research showing that middle leaders often require targeted support and training to act as effective pedagogical leaders (Spillane, 2005).

Demographic parameters, such as age, length of service (experience), certification level, and gender, can influence how school leaders practice instructional leadership; however, the findings are frequently mixed and contextual. For example, a recent large-scale study of secondary schools in Ethiopia discovered that age and length of service significantly impacted principals' pedagogical leadership practices. In contrast, gender had no significant effect on leadership style or teacher performance (Berhanu, 2025). Similarly, empirical research from South-Ethiopian secondary schools shows that good instructional leadership by principals, regardless of gender, improves student achievement, particularly when instructors have high self-efficacy (Gechere et al., 2025). However, some studies in various settings have found no strong predictive relationship between gender and leadership style or instructional outcomes, implying that professional competencies and contextual supports may outweigh demographic influence (Berhanu, 2025; Gechere et al., 2025). Taken together, these studies suggest that while demographic attributes, such as experience and age, can affect instructional leadership practices, their impact is mediated by training, contextual factors, and institutional conditions—highlighting the need to examine demographic effects in relation to professional development and school-context dynamics.

This examined corpus of literature reveals that, while instructional leadership is widely acknowledged as a potent mechanism for enhancing teaching and learning, its implementation remains uneven and contextually constrained, particularly among middle leaders. Across African education systems, HoDs are frequently positioned as instructional leaders, but they are frequently forced to prioritize coordination and compliance-oriented chores over sustained pedagogical involvement. This collection of data highlights the need for context-specific empirical investigations that go beyond normative assumptions to examine how instructional leadership is actually implemented in practice. The current study addresses this requirement by offering empirical insights into the instructional leadership methods of science HoDs in Lesotho, a relatively unexplored national context.

1.2. Theoretical Framework

Instructional leadership is widely regarded as one of the most influential approaches to school leadership for improving student learning outcomes (Hallinger et al., 2015). Foundational scholarship conceptualises instructional leadership as a set of practices through which leaders shape the conditions of teaching and learning (Hallinger et al., 2015; Hallinger et al., 2025c; Hallinger & Murphy, 1985). Hallinger et al.'s (2015) Principal

Instructional Management Rating Scale (PIMRS) leadership model identifies three key domains: (a) defining the school's mission, (b) managing the instructional program, and (c) promoting a positive school learning climate. It remains the dominant model for studying instructional leadership behaviours (Hallinger et al., 2025a, 2025b). Within these domains, school leaders perform several functions, including providing instructional materials, setting and communicating goals, supervising instruction, coordinating curriculum, monitoring learning progress, protecting teaching time, providing instructional feedback, and promoting professional growth.

While developed for principals, PIMRS has been increasingly used to analyse middle leadership, including departmental heads (HoD's), given their direct engagement with teachers and daily instructional issues (Seobi & Wood, 2016; Tlali & Matete, 2021). Furthermore, the PIMRS has been demonstrated to have a positive impact on leadership research and practice (Ng, 2019). Similarly, this study adopted the three domains to explore science HoD's self-reported instructional leadership practices in Lesotho secondary schools. For HoDs, establishing the purpose entails converting whole-school academic goals into explicit departmental expectations, as well as ensuring that teachers understand and commit to these objectives. HoDs can promote teacher efficacy and learner achievement by articulating common standards and exhibiting high expectations (Shaked & Schechter, 2019; Tlali & Matete, 2021). HoDs manage the instructional program by organising curriculum delivery, monitoring instructional quality, and using feedback to improve teachers' pedagogical competence (Hallinger et al., 2015; Tapala et al., 2020). Their proximity to classroom practice enables them to assist teachers with ongoing supervision, collaborative planning, and rapid intervention. Finally, by promoting a positive learning environment, HoDs help to create conditions that support professional development, protect instructional time, and retain high visibility within their departments. HoDs directly contribute to a departmental culture of continuous development by modeling professionalism, recognizing teacher efforts, and maintaining high expectations for teaching and learning (Hallinger et al., 2015).

HoDs' instructional leadership functions can be categorised as managerial and pedagogical. Managerial instructional leadership focuses on organizational and coordination functions that support teaching and learning indirectly, such as setting goals, coordinating curriculum, allocating resources, monitoring learner results, and protecting instructional time. On the other hand, pedagogical instructional leadership involves direct engagement with classroom practice and teacher development through observation, formative feedback, coaching, and modelling instruction. Within the PIMRS framework (Hallinger et al., 2025b), managerial functions align with defining the school mission and coordinating the instructional programme, while pedagogical leadership is enacted through supervising and evaluating instruction, providing instructional feedback, and promoting professional growth. High-impact pedagogical leadership is operationalized through systematic observation, evidence-based feedback, and instructional coaching cycles that drive continuous instructional improvement. Applying this model (PMIRS) in this study is based on its global applicability (Bada et al., 2020; Bush, 2015; Hallinger, 2018; Hallinger et al., 2015, 2025b; Ralebese et al., 2025), as well as its contribution to our global understanding of middle leadership practices in secondary school contexts.

The PIMRS provided both a conceptual lens and an analytical structure for examined science HoD's instructional leadership practices. Eight instructional leadership dimensions were assessed in this study, aligning with Hallinger and Murphy's (1985) three domains, allowing for systematic analysis of the extent to which HoDs report engaging in instructional leadership functions. The framework also informed the examination of the roles of demographic and workload variables in shaping the enactment of instructional leadership in science departments.

2. Materials and Methods

2.1. Research Approach, Design and Sampling Criteria

This quantitative research employed the descriptive survey design to examine the self-reported instructional leadership practices of science HODs in Lesotho secondary schools. The survey design enabled the collection of data from a relatively large sample within a shorter period of time (Fraenkel et al., 2018). Secondary schools from all ten districts of Lesotho were assigned numbers and fed into a random number generator to select 101 schools using simple random sampling. This ensured the schools had an equal chance of being included in the sample.

2.2. Data Collection Procedures

The first author delivered the paper-based questionnaire forms to all 101 schools (targeting HODs of science departments, who were purposively selected in line with the study's aim) and either collected them or requested that the HODs return them electronically upon completion. Only 67 questionnaires were completed and returned, representing a response rate of 66%, which is acceptable for survey-based educational research. The response rate was low, partly due to the lack of HODs at some schools, and some HODs opting not to participate in the study. However, the sample size was considered adequate for both descriptive and inferential statistical analysis, in line with similar instructional leadership studies that employed survey designs in secondary school contexts.

2.3. Instrument

The questionnaires consisted of 40 closed-ended questions on a 5-point Likert scale, adapted from the PIMRS, a widely validated instrument used internationally to assess instructional leadership practices (Hallinger et al., 2015). Aligning the adapted items with the original PIMRS domains and expert review, conducted by experts in school leadership and science education, ensured content validity. Consequently, minor wording adjustments were made to enhance contextual clarity. Internal consistency reliability was assessed with this study's sample using Cronbach's alpha, which yielded an overall reliability coefficient of $\alpha = 0.925$, indicating acceptable reliability for the scale (Taber, 2018). Sub-scale reliability coefficients ranged from 0.612 to 0.796 (see Table 1). Although several subscale alphas fall in the marginal-to-acceptable range, this is expected given the small sample size, limited number of items per subscale, and contextual adaptation of the items. Alpha values above 0.60 may be considered acceptable for exploratory and descriptive studies using short subscales in social sciences (Taber, 2018). Given that the PIMRS is an established and widely validated framework, and that the overall reliability was high, the subscale reliabilities were deemed acceptable for the purpose of this study.

Table 1. Reliability coefficients for the subscales.

Category	Number of Items	Cronbach's Alpha (α)
Provision of instructional materials	5	0.691
Setting and communication of goals	5	0.796
Supervision of instruction	5	0.628
Coordination of curriculum	5	0.671
Monitoring learning progress	5	0.699
Protection of teaching time	5	0.682
Provision of instructional feedback	5	0.729
Promotion of professional growth	5	0.612
Whole instrument	40	0.925

The responses included ‘almost never’, ‘seldom’, ‘sometimes’, ‘frequently’, and ‘almost always’. The questionnaire consisted of two sections: Section A requested participants to provide their demographic characteristics, while Section B requested them to indicate the frequency with which they conducted instructional leadership practices, organised into eight main scales of instructional leadership, each consisting of five sub-constructs (Akram et al., 2017; Hallinger & Murphy, 1985). The lead question was: “To what extent do you enact the following instructional leadership practices...”. The practices/statements are reported alongside the results in the results’ section.

2.4. Data Analysis

Prior to analysis, the dataset was screened for completeness patterns. Missing responses at item level were minimal and treated using pairwise deletion, such that available responses were included in item- and scale-level calculations. No data imputation procedures were applied. Variations in total N across items and scales therefore reflect non-responses rather than case exclusions from the dataset. The Statistical Package for the Social Sciences (SPSS) version 25 was used to perform the analysis. Firstly, the reliability of the instrument was assessed by computing the scale’s Cronbach’s alpha. Then, HOD’s self-reported instructional practices were determined by computing descriptive statistics [frequencies (N) and percentage (%)] of participants who selected each response. Furthermore, the modal responses per item were determined using the SPSS. To assess the influence of demographic characteristics on HOD’s self-reported instructional leadership practices, inferential statistics were computed. Likert-scale responses were coded numerically from 1 (almost never) to 5 (almost always). For each instructional leadership dimension, composite scores were calculating the mean of the relevant items, and an overall instructional leadership practice score was derived as the mean across all items. These mean scores were used in the inferential statistical analyses. It should be noted that inferential statistics were used to examine group differences as per the stated hypothesis. The use of Likert scale data for inferential statistics is supported by previous studies that assert that such analyses yield reliable insights (Norman, 2010). Firstly, data were checked for normality, and then independent samples’ t-tests and analysis of variance (ANOVA) were computed.

3. Results

The dataset reported in this study comprises 40 instructional leadership items, rated by 67 heads of science departments (HoDs) using a 5-point Likert scale. Firstly, the respondents’ demographic characteristics are described. Secondly, the section reports the frequency (N and %) and the most frequently chosen response category (modal response) for each instructional leadership practice (statement). Thirdly, the section reports results on the influence of demographic and workload variables on HoDs’ reported instructional practices.

(a) Demographic characteristics of the respondents

The demographic characteristics of the participants are shown in Table 2. The results show that the age range of the participants varied significantly, with the highest percentage falling between 40 and 49 years old (38.47%), followed by those over 50 years old (29.23%). Only 4.62% of participants were between the ages of 20 and 29, while 27.69% of participants were between the ages of 30 and 39. Males were more prevalent (56.72%) than females (43.28%) in the gender distribution. 52.38% of respondents had ten or more years of professional experience, while 47.62% had fewer than ten years.

In terms of qualification, the majority of HoDs (83.08%) have a bachelor’s degree. A smaller percentage reported having a diploma (1.54%), a master’s degree (9.23%), or an

honours degree (6.15%). The sample's teaching responsibilities varied. While some HoDs taught one subject (16.67%) or three subjects (13.63%), the majority (69.70%) taught two subjects. There was substantial variance in their weekly teaching periods, with about similar percentages teaching 20–25 sessions (45.39%) and 26–30 periods (43.75%). A tiny proportion taught up to 31–35 times per week (6.25%) or 19 periods or fewer (4.69%). Lastly, 74.63% of the participating schools were in urban areas, while 25.37% were in rural ones.

Table 2. Demographic characteristics of the sample.

Characteristic	Levels	N	%
Age (N = 65)	20–29	3	4.62
	30–39	18	27.69
	40–49	25	38.47
	≥50	19	29.23
Gender (N = 67)	Female	29	43.28
	Male	38	56.72
Years of experience (N = 63)	0–9	30	47.62
	≥10	33	52.38
Qualification (N = 65)	Diploma	1	1.54
	Bachelor's degree	54	83.08
	Honour's degree	4	6.15
	Master's degree	6	9.23
Number of HoDs' teaching subjects (N = 66)	1	11	16.67
	2	46	69.70
	3	9	13.63
Number of HoDs' teaching periods per week (N = 64)	≤19	3	4.69
	20–25	29	45.39
	26–30	28	43.75
	31–35	4	6.25
Location of school (N = 67)	Rural	17	25.37
	Urban	50	74.63

Note: Total N varies due to non-responses (NA).

(b) Self-reported instructional practices of science HODs

The next section describes teachers' reported instructional leadership practices across the eight domains of instructional leadership.

Category 1. Provision of instructional materials

The results in Table 3 relate to the provision of instructional materials. The results show that HoDs reported being actively involved in ensuring that instructional materials were accessible, available, and recommended appropriately. These activities were either regularly or nearly always carried out, according to the most frequent responses. However, instruction on the use of resources was implemented very occasionally, indicating that material support is more logistical than educational.

Table 3. Participants' self-reported instructional leadership practices related to providing instructional materials.

Statement/Item	Code	Response N (%)						Modal Response
		Almost Never	Seldom	Sometimes	Frequently	Almost Always	NA	
1. Ensure that teachers have the necessary teaching materials and laboratory equipment	A1	0 (0.0)	2 (3.0)	14 (20.9)	31 (46.3)	18 (26.9)	2 (3.0)	Frequently
2. Provide guidance to teachers on the use of teaching materials	A9	4 (6.0)	8 (11.9)	26 (38.8)	22 (32.8)	7 (10.4)	-	Sometimes
3. Provide feedback on availability and use of teaching materials	A18	1 (1.5)	2 (3.0)	17 (25.4)	27 (40.3)	19 (28.5)	1 (1.5)	Frequently
4. Ensure that the teaching materials are accessible to the teachers	A25	0 (0.0)	3 (4.5)	11 (16.4)	30 (34.3)	23 (34.3)	-	Frequently
5. Make recommendations of teaching materials according to teachers' requirements	A34	0 (0.0)	3 (4.5)	0 (0.0)	25 (37.3)	28 (41.8)	1 (1.5)	Almost always

Note: Total N varies due to non-responses (NA).

Category 2. Setting and communication of goals

Table 4 shows that setting and communicating goals were among the most reportedly enacted dimensions of HoD's instructional leadership practices. HoDs routinely set high standards for departmental success and nearly always worked with teachers to establish departmental goals. Additionally, they regularly prioritized, clarified, and encouraged the execution of goals. These results suggest a leadership culture that prioritizes accountability and shared direction.

Table 4. Instructional practices related to setting and communicating goals.

Statement/Item	Code	Response N (%)						Modal Response
		Almost Never	Seldom	Sometimes	Frequently	Almost Always	NA	
6. Set departmental goals together with the teachers	B2	1 (1.5)	0 (0.0)	12 (17.9)	19 (28.4)	34 (50.7)	1 (1.5)	Almost always
7. Clarify and explain the departmental goals for a common understanding	B13	3 (4.5)	6 (9.0)	13 (19.4)	31 (46.3)	14 (20.9)	-	Frequently
8. Have high expectations about performance of the department	B19	0 (0.0)	1 (1.5)	5 (7.5)	14 (20.9)	47 (70.1)	-	Almost always
9. Place the goals in order of their urgency	B32	9 (13.4)	6 (9.0)	19 (28.4)	20 (29.9)	10 (14.9)	3 (4.5)	Frequently
10. Monitor and support the implementation of the departmental goals	B36	2 (3.0)	6 (9.0)	9 (13.4)	30 (44.8)	19 (28.4)	1 (1.5)	Frequently

Note: Total N varies due to non-responses (NA).

Category 3. Supervision of instruction

In terms of instructional supervision, HoDs showed a modest level of strength (see Table 5). They discussed curriculum challenges, reviewed lesson plans, and assessed student performance on a regular basis. However, observations in the lab and classroom were conducted only occasionally. This suggests a preference for document-based or indirect supervision over ongoing in-class instructional supervision.

Table 5. Instructional practices related to supervising instruction.

Statement/Item	Code	Response N (%)						Modal Response
		Almost Never	Seldom	Sometimes	Frequently	Almost Always	NA	
11. Review student performance to assess and inform teaching and learning	C3	8 (11.9)	10 (14.9)	17 (25.4)	23 (34.4)	8 (11.9)	1 (1.5)	Frequently
12. Observe teachers in their classrooms/laboratory as they teach	C10	10 (14.9)	16 (23.9)	17 (25.4)	15 (22.4)	8 (11.9)	1 (1.5)	Sometimes
13. Model outstanding and modern science instruction	C17	4 (6.0)	8 (11.9)	22 (32.8)	25 (37.3)	7 (10.4)	1 (1.5)	Frequently
14. Review lesson plans, scheme and record books, as well as teaching aids	C24	3 (4.5)	1 (1.5)	18 (26.9)	22 (32.8)	22 (32.8)	1 (1.5)	Frequently
15. Discuss curriculum issues with teachers and/or students	C30	0 (0.0)	4 (6.0)	19 (28.4)	24 (35.8)	19 (28.4)	1 (1.5)	Frequently

Note: Total N varies due to non-responses (NA).

Category 4. Coordination of curriculum

Another aspect that was heavily used was curriculum coordination. Table 6 shows that HoDs frequently encouraged activity-based education, reviewed curriculum resources, planned strategies for improvement, and organized meetings pertaining to the curriculum. They also nearly always made sure that classroom instruction was in line with curriculum requirements. These exercises demonstrate a great dedication to curriculum coherence.

Table 6. Instructional practices related to coordinating curriculum.

Statement/Item	Code	Response N (%)						Modal Response
		Almost Never	Seldom	Sometimes	Frequently	Almost Always	NA	
16. Ensure that what is taught in the classroom coincides with the demands of the curriculum	D4	0 (0.0)	4 (6.0)	5 (7.5)	27 (40.3)	31 (46.3)	-	Almost always
17. Motivate teachers to practice activity-based instruction	D11	1 (1.5)	8 (11.9)	18 (26.9)	25 (37.3)	15 (22.4)	-	Frequently
18. Ensure your active involvement in the examination of curriculum resources	D16	2 (3.0)	6 (9.0)	17 (25.4)	25 (37.3)	17 (25.4)	-	Frequently

19. Plan strategies for improvement of the department	D26	0 (0.0)	4 (6.0)	13 (19.4)	32 (47.8)	15 (22.4)	3 (4.5)	Frequently
20. Set up departmental and subject meetings to discuss curriculum implementation	D37	1 (1.5)	2 (3.0)	12 (17.9)	28 (41.8)	24 (35.8)	-	Frequently

Note: Total N varies due to non-responses (NA).

Category 5. Monitoring learning progress

HODs' self-reports regarding monitoring of learning progress are presented in Table 7. Results revealed that the majority of the items in this dimension were scored as frequently, and HoDs regularly tracked learners' progress. They often promoted open communication with parents, reviewed progress reports, examined students' written work, held conversations with teachers about student learning, and used assessment data to inform instructional adjustments. This indicates a persistent emphasis on student results.

Table 7. Instructional practices related to monitoring learning progress.

Statement/Item	Code	Response N (%)						Modal Response
		Almost Never	Seldom	Sometimes	Frequently	Almost Always	NA	
21. Involve individual teachers in discussions about student learning	E5	2 (3.0)	2 (3.0)	23 (34.3)	29 (43.3)	11 (16.4)	-	Frequently
22. Review students' exercise books and test scripts	E12	2 (3.0)	8 (11.9)	21 (31.3)	24 (35.8)	10 (97.0)	2 (3.0)	Frequently
23. Monitor students' progress reports	E21	3 (4.5)	11 (16.4)	21 (31.3)	21 (31.3)	11 (16.4)	-	Sometimes
24. Encourage teachers to communicate student learning progress with their parents/guardians on regular basis	E27	2 (3.0)	11 (16.4)	19 (28.4)	22 (32.8)	11 (16.4)	2 (3.0)	Frequently
25. Use data from students' learning assessment to suggest improvements for classroom practice	E38	6 (9.0)	16 (23.9)	12 (17.9)	28 (41.8)	5 (7.5)		Frequently

Note: Total N varies due to non-responses (NA).

Category 6. Protection of teaching time

Strong measures were also taken to protect teaching time (Table 8). HoDs routinely reduced interruptions, promoted teacher readiness, guaranteed student attendance, planned practical laboratory work, and made plans to continue instruction even when teachers were not present. This demonstrates efficient administration of the learning environment.

Table 8. Instructional practices related to protecting teaching time.

Statement/Item	Code	Response N (%)						Modal Response
		Almost Never	Seldom	Sometimes	Frequently	Almost Always	NA	
26. Minimise the disruptions of instructional time (e.g., by announcements, sports, meetings, and other events)	F6	2 (3.0)	14 (20.9)	18 (26.9)	24 (35.8)	9 (13.4)	-	Frequently
27. Ensure that students do not miss classes	F14	4 (6.0)	5 (7.5)	13 (19.4)	24 (35.8)	20 (29.9)	1 (1.5)	Frequently
28. Inspire teachers to go to class with proper preparation and in time	F23	1 (1.5)	1 (1.5)	12 (17.9)	28 (41.8)	22 (32.8)	3 (4.5)	Frequently
29. Design the schedule for practical work in the laboratory	F31	6 (9.0)	3 (4.5)	10 (14.9)	25 (37.3)	20 (29.9)	3 (4.5)	Frequently
30. Ensure that students are always taught even when the teacher is absent	F40	1 (1.5)	8 (11.9)	20 (29.9)	22 (32.8)	16 (23.9)	-	Frequently

Note: Total N varies due to non-responses (NA).

Category 7. Provision of instructional feedback

This dimension produced conflicting results as shown in Table 9. The provision of written instructional feedback was assessed as infrequent—the lowest level of enactment in the whole dataset—while HoDs often highlighted excellent teacher performance and commended students. Teachers were likewise rarely praised in public. In general, informal and verbal feedback seems to be more common than formal, recorded feedback.

Table 9. Instructional practices related to providing instructional feedback.

Statement/Item	Code	Response N (%)						Modal Response
		Almost Never	Seldom	Sometimes	Frequently	Almost Always	NA	
31. Emphasize good teacher performance in departmental meetings and elsewhere	G7	1 (1.5)	2 (3.0)	12 (17.9)	27 (40.3)	25 (37.3)	-	Frequently
32. Publicly praise teachers for their achievements (e.g., in parades, newsletters or memos)	G15	11 (16.4)	12 (17.9)	18 (26.9)	15 (22.4)	11 (16.4)	-	Sometimes
33. Discuss student performance in parent-teacher meetings	G22	4 (6.0)	6 (9.0)	13 (19.4)	18 (26.9)	23 (34.3)	3 (4.5)	Almost always
34. Publicly praise students for their achievements (e.g., in parades, newsletters or memos)	G28	6 (9.0)	9 (13.4)	18 (26.9)	21 (31.3)	13 (19.4)	-	Frequently
35. Provide formal feedback on instruction in written form	G33	13 (19.4)	20 (29.9)	14 (20.9)	13 (19.4)	7 (10.4)	-	Seldom

Note: Total N varies due to non-responses (NA).

Category 8. Promotion of professional growth

HoDs showed a moderate level of involvement in advancing the professional development of teachers (see Table 10). They regularly held subject-matter meetings, suggested pertinent seminars, and encouraged teachers to enhance their practices, but they rarely participated in professional development or assessed teacher learning. These findings imply that HoDs typically support professional development but do not consistently track it.

Table 10. Instructional practices related to promoting professional growth.

Statement/Item	Code	Response N (%)						Modal Response
		Almost Never	Seldom	Sometimes	Frequently	Almost Always	NA	
36. Participate in professional development with the teachers	H8	1 (1.5)	8 (11.9)	26 (38.8)	19 (28.4)	12 (17.9)		Sometimes
37. Set up meetings for discussions about subject content matter and new curriculum	H20	1 (1.5)	3 (4.5)	16 (23.9)	22 (32.8)	24 (35.8)	1 (1.5)	Almost always
38. Develop strategies for evaluating teacher learning/training	H29	2 (3.0)	5 (7.5)	57 (85.1)	1 (1.5)	1 (1.5)	1 (1.5)	Sometimes
39. Suggest teacher training workshops to be attended by teachers according to their needs	H35	1 (1.5)	7 (10.4)	12 (17.9)	24 (35.8)	22 (32.8)	1 (1.5)	Frequently
40. Motivate teachers to overcome challenges and improve their teaching practice	H39	1 (1.5)	4 (6.0)	22 (32.8)	31 (46.3)	9 (13.4)	-	Frequently

Note: Total N varies due to non-responses (NA).

The data reveal clear trends in how frequently specific objects and dimensions are used. The most often enacted practices include A1, A18, A25, B13, B36, C24, C30, E5, E12, E21, E27, F6, F14, F23, F31, F40, H39, D37, G7, and G28. A9, C10, H8, and H29 are examples of items with moderate involvement, meaning they are used occasionally. Only one item, G33, fell into the least enacted category, with replies suggesting that it was rarely or practically never used. Looking at larger dimensions, the most enacted were C2, C4, C5, and C6, while the least enacted were C7 (because of the very low enactment of written feedback (G33) and moderate enactment of praise (G15), C8—due to “sometimes” responses for PD participation (H8) and teacher learning evaluation (H29), and C3—because classroom observations (C10) are only enacted “sometimes”).

Across the eight instructional leadership dimensions, a consistent pattern is evident: practices that are organisational and coordination-oriented are reportedly enacted more frequently than those requiring direct pedagogical engagement. High-frequency reported enactment clusters around goal setting, curriculum coordination, and resource provision, monitoring learner progress, and protecting instructional time. Lower-frequency reported enactment appears in pedagogically intensive practices, particularly classroom observation, formal written instructional feedback, and systematic evaluation of teacher learning. Supervision is more often conducted through indirect methods, such as reviewing plans and learners work, than through in-class observation, while feedback is more commonly

verbal than written. These patterns reflect a stronger management-supportive profile than developmental, classroom-focused instructional leadership profile.

Overall, the results show that Science HoDs in Lesotho are capable managerial instructional leaders who are adept at planning lessons, establishing precise objectives, and guaranteeing curriculum and resource congruence. They consistently show an interest in monitoring students' progress and ensuring class time is well-protected. However, the findings also highlight areas that require more in-depth educational engagement. HoDs may benefit from concentrated assistance in developing more long-term, pedagogically focused instructional leadership practices, as evidenced by the limited number of classroom visits, infrequent written comments, and inconsistent evaluation of teacher learning. By strengthening these areas, they may be better equipped to enhance the quality of instruction and ultimately promote improved learning outcomes for students.

(c) *Influence of demographics characteristics*

Both the Kolmogorov–Smirnov ($K-S = 0.071$, $p = 0.200$) and Shapiro–Wilk ($W = 0.992$, $p = 0.959$) tests show that the data were approximately normally distributed. Furthermore, visual inspection of Figure 1 (Histogram) shows that overall Score is roughly bell-shaped and centred near the mean suggesting an approximately normal distribution. Furthermore, Figure 2 normal Q-Q plot (B), also shows that the Q-Q plot points fall close to the reference/normal line, indicating the data are reasonably consistent with normality with only slight tail deviations. Therefore, appropriate parametric tests were computed using SPSS 25. According to Norman (2010), parametric statistics can be applied to Likert data, even with small sample sizes.

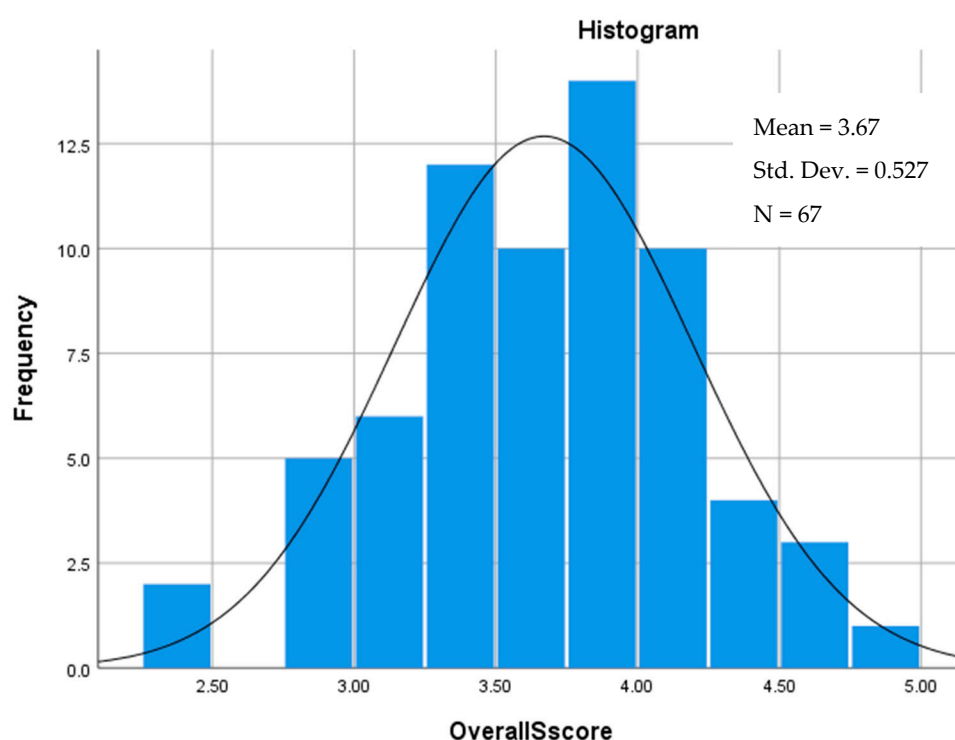


Figure 1. Histogram.

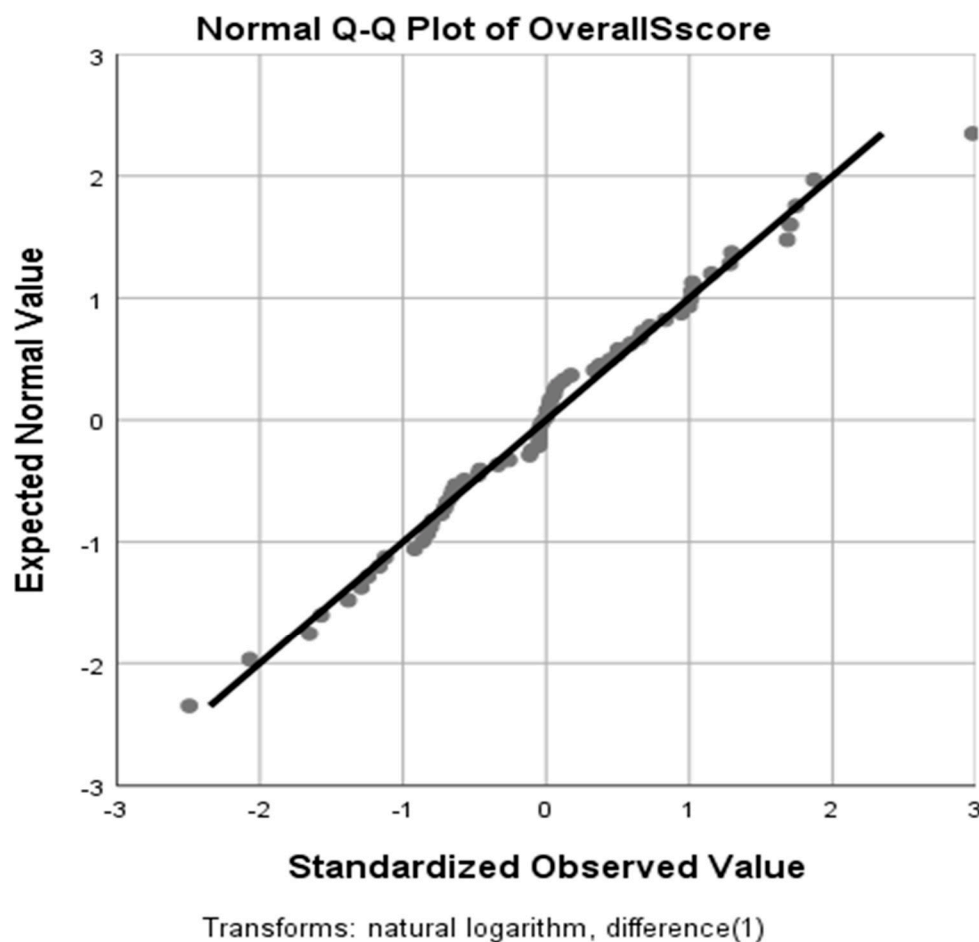


Figure 2. Normal Q-Q plot

(i) Influence of gender and school location

Regarding the influence of gender, Table 11 shows that female HoDs ($N = 29$, $M = 3.61$, $SD = 0.48$) and male HoDs ($N = 38$, $M = 3.71$, $SD = 0.56$) had comparable instructional practice scores, $t(65) = -0.754$, $p = 0.453$. This suggests that gender was not a significant factor in establishing instructional leadership methods. School Location: Similarly, HoDs in rural schools ($N = 17$, $M = 3.70$, $SD = 0.297$) and urban schools ($N = 50$, $M = 3.66$, $SD = 0.50$) showed no significant difference, $t(65) = 0.297$, $p = 0.768$. Thus, school location had no substantial impact on instructional leadership techniques. These results indicate that the null hypothesis of no difference in instructional leadership practices by gender and school location is not rejected.

Table 11. T-Test results on the influence of gender and school location on HOD's self-reported instructional practices.

Characteristic	Level	N	M	SD	t	df	p
Gender ($N = 67$)	Female	29	3.61	0.48	−0.754	65	0.453
	Male	38	3.71	0.56			
Location of school ($N = 67$)	Rural	17	3.70	0.297	0.297	65	0.768
	Urban	50	3.66	0.50			

Note: See Appendix A Tables A1 and A2 for full T-test results.

(ii) Influence of age, qualification, years of experience, and workload on HOD's self-reported instructional practices

The ANOVA test results in Table 12 determined whether many demographic and workload-related variables were associated with differences in HoD's self-reported instructional practices. Age-wise, results show no significant differences in instructional practices among all age groups [$F(3, 61) = 0.709, p = 0.550$]. Mean scores were quite similar among the groups (3.51–3.80). Additionally, academic qualification had no significant influence [$F(4, 62) = 0.963, p = 0.149$], all means ranged from $M = 3.52$ to $M = 3.79$. Years of experience also revealed no significant differences [$F(2, 60) = 0.356, p = 0.702$], although the means increased marginally among the groups (3.61 to 3.83). However, the differences were not statistically significant. The number of teaching times per week ($\leq 19, 20\text{--}25, 26\text{--}30, 31\text{--}35$) had no significant effect on instructional practices, $F(3, 60) = 0.246, p = 0.864$. The mean scores were constant across groups, ranging from 3.63 to 3.8.

However, there was a significant difference in the number of subjects taught by HoDs ($F(2, 63) = 3.138, p = 0.050$). HoDs teaching three subjects indicated higher self-reported instructional leadership practices ($M = 4.06$) than those teaching one or two topics ($M = 3.61$ and 3.59 , respectively). The analysis revealed a significant difference between groups 2 and 3 ($F(2, 63) = 3.14, p = 0.05$). The Tukey HSD test revealed that teachers who taught three subjects reported considerably higher self-reported instructional leadership practices than those who taught two subjects ($p = 0.041$). However, there were no significant differences between those teaching three subjects and those teaching one ($p = 0.138$) or one and two ($p = 0.994$).

Table 12. ANOVA test results on the influence of age, qualification, and workload on HoD's self-reported instructional practices.

Characteristic	Level	N	M	SD	F	df	p
Age (N = 65)	20–29	3	3.51	0.60	0.709	3, 61	0.550
	30–39	17	3.67	0.46			
	40–49	25	3.58	0.55			
	≥ 50	20	3.80	0.53			
Qualification (N = 65)	Diploma	1	3.79	-	0.149	4, 62	0.963
	Bachelor's degree	54	3.68	0.54			
	Honour's degree	4	3.71	0.54			
	Master's degree	6	3.52	0.40			
Years of experience (N = 63)	0–9	28	3.61	4.66	0.356	2, 60	0.702
	10–19	32	3.69	3.69			
	20–29	3	3.83	3.83			
Number of HoDs' teaching subjects (N = 66)	1	11	3.61	0.45	3.138	2, 63	0.050 *
	2	46	3.59	0.50			
	3	9	4.06	0.63			
Number of HoDs' teaching periods per week (N = 64)	≤ 19	3	3.75	0.23	0.246	3, 60	0.864
	20–25	28	3.65	0.51			
	26–30	29	3.63	0.54			
	31–35	4	3.86	0.84			

Note: Total N varies due to non-responses (NA). See Appendix A Tables A3–A7 for full ANOVA test results. * Significant at $p = 0.05$.

For most demographic and workload variables (age, qualification, years of experience, and teaching periods per week), the null hypothesis of no group differences is not rejected. However, for the number of subjects taught, the null hypotheses is rejected, as a statistically significant group difference was found. Overall, the hypothesis testing results

show that instructional leadership practices were largely consistent across demographic groups, except for differences associated with the number of subjects taught.

The cross-dimensional patterns suggest that science HoDs' reported instructional practices is characterised by consistent strength in managerial and coordination functions, alongside comparatively limited reported enactment of high-impact pedagogical practices. The distribution of responses indicates that leadership attention is concentrated on structures that support instruction rather than on practices that directly develop teaching quality. The following Discussion section interprets these patterns in relation to the instructional leadership literature and considers their implications for middle leadership capacity, role expectations, and professional development needs.

4. Discussion

The present study of Science Heads of Department (HoDs) in Lesotho found that HoDs most consistently enacted activities associated with setting and communicating goals, monitoring learning progress, coordinating the curriculum, protecting teaching time, and ensuring availability of materials. In contrast, practices that involve direct, sustained pedagogical engagement—notably classroom observation and formal written feedback to teachers—were less frequently enacted. These patterns align with broader findings in the instructional leadership literature: school leaders commonly focus on organizational and managerial routines (e.g., goal setting, resource allocation, timetable protection), while the highest-impact instructional activities—direct engagement with teachers' classroom practices—are often under-implemented (Robinson et al., 2008). Robinson et al.'s (2008) synthesis emphasised that leadership practices that directly support teaching and learning (e.g., evaluation and feedback of teaching, coaching, and monitoring instruction) have a larger effect on student outcomes than more distal managerial functions. The finding that written instructional feedback is seldom provided suggests a missed opportunity for an evidence-based lever of improvement: formal feedback and systematic observation are precisely the kinds of practices that the literature identifies as high-leverage for improving classroom instruction (Hallinger, 2011).

A closer analytical examination of the least reportedly enacted practices—particularly classroom observation, provision of formal written instructional feedback, and systematic evaluation of teacher learning—offers important insights into the nature and constraints of instructional leadership enactment among science HoDs. These practices are widely recognized as the most pedagogically demanding dimensions of instructional leadership because they require sustained engagement with classroom practice, professional judgment, and systematic follow-up (Hallinger, 2011; Robinson et al., 2008). Their limited reported enactment, therefore, suggests not a lack of awareness or commitment on the part of HoDs, but the influence of structural and contextual conditions that shape how instructional leadership is prioritised in everyday school practice.

Classroom observation, which is reported to occur only occasionally, is a foundational mechanism for instructional improvement, as it enables leaders to develop an informed understanding of teaching quality and learner engagement (Hallinger et al., 2015). However, empirical research consistently shows that observation is among the most difficult leadership practices to sustain, particularly for middle leaders who carry substantial teaching and administrative workloads (Mestry, 2017; Malinga et al., 2021). Consequently, instructional supervision often becomes indirect—relying on document review, assessment data, or informal conversations—rather than on systematic in-class engagement. This pattern is clearly evident in the study's findings.

The infrequent use of formal written instructional feedback and limited evaluation of teacher learning further point to a model of instructional leadership that is facilitative mainly rather than developmental. Written feedback plays a critical role in documenting

instructional expectations, supporting accountability, and sustaining professional learning over time; yet, it remains underutilised in many school contexts (Hallinger, 2011; Robinson et al., 2008). Viewed through a distributed leadership lens, these patterns suggest that instructional leadership practice is shaped more by organizational routines, role expectations, and system-level priorities that prioritise visible managerial tasks over sustained pedagogical engagement (Spillane, 2005).

The strong performance in goal-setting and curriculum coordination in our data corresponds to the “defining mission” and “managing the instructional program” components of Hallinger et al.’s (2015) leadership model. However, the relatively lower enactment of classroom observation and evaluation suggests a weaker implementation of ongoing pedagogical support and capacity-building, which Hallinger et al. (2015) identify as necessary to translate goals into improved teaching practices.

Regional studies in southern Africa further contextualize the under-enactment of classroom observation, written feedback, and evaluation of teacher learning observed in this study. Research on school middle-management (HODs) in South Africa and neighbouring contexts has similarly documented that HODs often concentrate on administrative, coordination and resource-related tasks while experiencing constraints in providing concentrated pedagogical leadership such as observation, coaching, and formal feedback—tasks that typically require time, training, and system supports (Chabalala & Naidoo, 2021; Malinga et al., 2021; Mestry, 2017). These findings suggest that the Lesotho pattern is not idiosyncratic but rather reflects wider systemic challenges in the region concerning the distribution of leadership functions, role clarity, and the professional capacity of middle managers.

The concentration of under-enacted practices within the pedagogically intensive dimensions of instructional leadership points to systemic rather than individual limitations. These syntheses reinforce the implication of this study’s findings, that strengthening the capacity of HoDs to conduct classroom observation and to provide regular, written, formative feedback should be a key policy priority. Several plausible structural explanations are suggested by both the literature and the results of the current study. First, role overload and role ambiguity are commonly reported among HODs: they are assigned both managerial responsibilities (scheduling, meetings, resource distribution) and instructional duties without commensurate time or training, which tends to privilege managerial tasks that are quicker to enact (e.g., scheduling, material provision) over time-intensive pedagogical tasks (classroom observation; coaching). Second, capacity constraints—including limited training in observation and feedback skills and a lack of systems for documented follow-up—reduce the likelihood that feedback will be systematic or written. Third, system incentives and accountabilities in many contexts emphasise compliance and paperwork rather than instructional improvement cycles, which skews leader activity toward visible managerial outputs rather than the often less visible but higher-impact practice of iterative teacher development (Bush & Glover, 2016). Together, these mechanisms help explain why HoDs in Lesotho frequently enact curriculum coordination and goal-setting, while providing little written instructional feedback.

Implications for policy and practice flow directly from these interpretations. At minimum, interventions should aim to (a) clarify the role of HODs so that instructional leadership is prioritised in job descriptions and performance appraisals; (b) provide structured professional development focused on observation, feedback and coaching techniques (including practice and follow-up); (c) create time and incentives for in-class engagement by protecting HODs’ time for observations and follow-up discussions; and (d) institutionalize simple, low-burden tools for written feedback and tracking teacher development (observation forms, short feedback templates, peer exchange forums). Evidence suggests that relatively modest, well-designed interventions in these areas can increase the frequency

and quality of instructional leadership practices, thereby contributing to improvements in teaching and, ultimately, student learning.

Limitations of the Study

When evaluating the results, several limitations should be considered. Firstly, the study relied solely on self-reported data, which may lead to an overestimation of the frequency of instructional leadership behaviors due to social desirability bias. The quality and depth of leadership practices as they take place in classrooms cannot be adequately captured by self-reports, even though the use of an established instrument (PIMRS) improves reliability. Second, it is difficult to determine causal relationships or track changes in instructional leadership practices over time due to the cross-sectional survey design. Longitudinal research would provide a deeper understanding of how HoDs' behaviours change in response to policy changes, professional development opportunities, or shifting school environments. Instructional leadership is a dynamic process. Third, although adequate for descriptive analysis, the comparatively small sample size and response rate may limit the applicability of the findings to institutions other than the participating ones.

Lastly, the study's exclusive emphasis on department heads of science limits the findings' generalisability. Due to variations in curriculum structure, assessment requirements, and pedagogical traditions, instructional leadership approaches may differ between disciplines. Future studies employing mixed-methods techniques—such as document analysis, interviews with teachers and principals, and classroom observations—would provide a more comprehensive understanding of the implementation and effects of instructional leadership practices.

5. Conclusions and Recommendations

5.1. Conclusions

This study examined the self-reported instructional leadership techniques of science department heads in secondary schools in Lesotho and investigated whether these strategies differed depending on certain workload and demographic factors. The results show that Science HoDs regularly implement instructional leadership techniques in the areas of goal setting and communication, curriculum coordination, learner progress tracking, safeguarding instructional time, and resource allocation. These behaviors demonstrate a strong commitment to the managerial aspects of instructional leadership and establish HoDs as successful organisational and curriculum administrators within their departments. The study also shows that high-impact pedagogical leadership practices—specifically, classroom observation, formal written feedback, and systematic evaluation of teacher learning—are consistently under-enacted. Despite being generally acknowledged in the literature on instructional leadership as essential tools for enhancing the quality of instruction, these practices continue to be peripheral in the leadership repertoires of HoDs. The pattern indicates that, rather than being primarily instructional and developmental, instructional leadership in this setting is mostly managerial and compliance-oriented.

The lack of significant differences in the majority of contextual and demographic variables suggests that structural and systemic factors, rather than individual leader traits, are more likely to be responsible for these patterns. HoDs' work priorities seem to be influenced by role overload, a lack of time for instructional engagement, and inadequate training for pedagogical leadership. In this sense, the results are consistent with regional and global data, which indicate that middle leaders in systems with limited resources frequently carry out coordinating tasks successfully but often struggle to maintain direct involvement in classroom instruction. This study expands on the literature on instructional

leadership by offering actual data from a context that has received little attention. It emphasises the necessity of going beyond role distribution to create conditions that facilitate long-term, classroom-focused leadership. If instructional leadership is to yield better science teaching and learning outcomes, the pedagogical aspect of HoDs' activities must be strengthened.

5.2. Recommendations

Based on the findings, four interrelated recommendations are advanced. First, instructional leadership should be given more explicit priority in Lesotho's education policy within the official function descriptions and performance frameworks of department heads. Formative feedback, teacher learning evaluation, and classroom observation should be prioritised as essential leadership duties rather than optional ones. Second, targeted and practice-oriented professional development programmes should be designed to strengthen HoDs' capacity for pedagogical leadership. Such programmes should focus on developing skills in instructional supervision, observation techniques, feedback conversations, and the use of evidence to support teacher growth. Importantly, professional development should include opportunities for practice, reflection, and follow-up, rather than relying solely on workshop-based models. Third, in order to facilitate the implementation of instructional leadership, school-level leadership structures should be modified. This entails minimizing administrative burden, preserving time for HoDs to participate in classroom-based leadership activities, and coordinating workload and scheduling with expectations for instructional leadership. By promoting collaborative cultures that prioritise teaching and learning, principals play a crucial role in validating and supporting HoDs' instructional leadership.

Lastly, mixed-methods and longitudinal designs that capture not just the frequency but also the quality and impact of instructional leadership techniques should be used in future research to expand on this work. Research that looks at the connection between improved pedagogical leadership by HoDs and modifications to classroom procedures or student outcomes would be very beneficial. Scalable leadership reforms in Lesotho and other contexts would be informed by intervention-based research assessing focused instructional leadership development programs.

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Informed Consent Statement: Written informed consent was provided by the participants. They were informed that participation in the study was voluntary.

Data Availability Statement: Data for this study are available upon reasonable request from the corresponding author.

Conflicts of Interest: The authors declare that they have no conflicts of interest.

Appendix A. T-Test and ANOVA Test Results

Table A1. T-Test results on the influence of gender on HOD's self-reported instructional practices.

	Levene's Test for Equality of Variances		t-Test for Equality of Means						
	F	Sig.	t	df	Sig. (2-Tailed)	Mean Difference	Std. Error Difference	95% Confidence Interval of the Difference	
Equal variances assumed	0.845	0.361	0.754	65	0.453	0.09839	0.13042	Lower	Upper
Equal variances not assumed			0.770	64.054	0.444	0.09839	0.12774	Lower	Upper

Table A2. T-test results on the influence of school location on HOD's self-reported instructional practices.

	Levene's Test for Equality of Variances		t-Test for Equality of Means						
	F	Sig.	t	df	Sig. (2-Tailed)	Mean Difference	Std. Error Difference	95% Confidence Interval of the Difference	
Equal variances assumed	2.473	0.121	−0.297	65	0.768	−0.04425	0.14905	Lower	Upper
Equal variances not assumed			−0.255	22.191	0.801	−0.04425	0.17319	Lower	Upper

Table A3. ANOVA test results on the influence of age on HOD's self-reported instructional practices.

	Sum of Squares	df	Mean Square	F	Sig.
Between Groups	1.632	2	0.816	3.138	0.050
Within Groups	16.385	63	0.260		
Total	18.017	65			

Table A4. ANOVA test results on the influence of qualification on HOD's self-reported instructional practices.

	Sum of Squares	df	Mean Square	F	Sig.
Between Groups	0.174	4	0.044	0.149	0.963
Within Groups	18.169	62	0.293		
Total	18.344	66			

Table A5. ANOVA test results on the influence of years of experience on HOD's self-reported instructional practices.

	Sum of Squares	df	Mean Square	F	Sig.
Between Groups	0.200	2	0.100	0.356	0.702
Within Groups	16.863	60	0.281		
Total	17.063	62			

Table A6. ANOVA test results on the influence of the number of teaching subjects on HOD's self-reported instructional practices.

	Sum of Squares	df	Mean Square	F	Sig.
Between Groups	1.632	2	0.816	3.138	0.050
Within Groups	16.385	63	0.260		
Total	18.017	65			

Table A7. ANOVA test results on the influence of teaching periods per week on HOD's self-reported instructional practices.

	Sum of Squares	df	Mean Square	F	Sig.
Between Groups	0.218	3	0.073	0.246	0.864
Within Groups	17.709	60	0.295		
Total	17.927	63			

References

- Akram, M., Kiran, S., & İlğan, A. 2017. Development and validation of instructional leadership questionnaire. *International Journal of Organisational Leadership*, 6(1), 73–88. <https://doi.org/10.33844/ijol.2017.60435>.
- Alrayes, N. S. (2025). A competency-based framework for departmental leadership: Insights from college deans in higher education. *Educational Process: International Journal*, 18, 1–20. <https://doi.org/10.22521/edupij.2025.18.495>.
- Bada, H. A., Ariffin, T. F. T., & Nordin, H. B. (2020). The effectiveness of teachers in Nigerian secondary schools: The role of instructional leadership of principals. *International Journal of Leadership in Education*, 27(1), 44–71. <https://doi.org/10.1080/13603124.2020.1811899>.
- Berhanu, K. Z. (2025). The relationship between principals' pedagogical leadership practices and teachers' job performance: The role of sociodemographic characteristics. *BMC Psychology*, 13, 89. <https://doi.org/10.1186/s40359-025-02415-7>.
- Bush, T. (2015). Understanding instructional leadership. *Educational Management Administration & Leadership*, 43(4), 487–489. <https://doi.org/10.1177/1741143215577035>.
- Bush, T. (2023). The importance of middle leadership for school improvement. *Educational Management Administration & Leadership*, 51(2), 267–269. <https://doi.org/10.1177/17411432221144628>.
- Bush, T., & Glover, D. (2016). School leadership and management in South Africa: Findings from a systematic literature review. *International Journal of Educational Management*, 30(2), 211–231. <https://doi.org/10.1108/IJEM-07-2014-0101>.
- Chabalala, G., & Naidoo, P. (2021). Teachers' and middle managers' experiences of principals' instructional leadership towards improving curriculum delivery in schools. *South African Journal of Childhood Education*, 11(1), 1–10. <https://doi.org/10.4102/sajce.v11i1.910>.
- Fraenkel, J., Wallen, N., & Hyun, H. (2018). *How to design and evaluate research in education* (10th ed.). McGraw-Hill.
- Gechere, T., Oumer, J., & Ouke, T. (2025). Influence of principals' instructional leadership and teachers' efficacy on students' performance in secondary schools in the Wolaita Zone, South Ethiopia. *Discover Sustainability*, 6, 967. <https://doi.org/10.1007/s43621-025-01797-3>.
- Hallinger, P. (2011). Leadership for learning: Lessons from 40 years of empirical research. *Journal of Educational Administration*, 49(2), 125–142. <https://doi.org/10.1108/09578231111116699>.
- Hallinger, P. (2018). Surfacing a hidden literature: A systematic review of research on educational leadership and management in Africa. *Educational Management Administration and Leadership*, 46(3), 362–384. <https://doi.org/10.1177/1741143217694895>.
- Hallinger, P., & Hosseingholizadeh, R. (2020). Exploring instructional leadership in Iran: A mixed methods study of high-and-low performing principals. *Educational Management Administration & Leadership*, 48(4), 595–616. <https://doi.org/10.1177/1741143219836684>.
- Hallinger, P., Liu, S., & Aung, P. N. (2025a). A systematic state-of-the-art review of Asian research on principal instructional leadership, 1987–2024. *Education Sciences*, 15(7), 817. <https://doi.org/10.3390/educsci15070817>.
- Hallinger, P., Liu, S., Aung, P. N., & Yan, M. (2025b). A systematic review of instructional leadership research conducted with the principal instructional management rating scale (PIMRS), 1983–2024. *Educational Management Administration & Leadership*. <https://doi.org/10.1177/17411432251358575>.
- Hallinger, P., Liu, S., & Chen, L. (2025c). Principal instructional leadership and teacher attitudes: A meta-analytic review, 1989–2024. *European Journal of Education*, 60(4), e70199. <https://doi.org/10.1111/ejed.70199>.
- Hallinger, P., & Murphy, J. (1985). Assessing the instructional management behavior of principals. *The Elementary School Journal*, 86(2), 217–247. <https://doi.org/10.1086/461445>.
- Hallinger, P., Wang, W.-C., Chen, C.-W., & Li, D. (2015). *Assessing instructional leadership with the principal instructional management rating scale*. Springer International Publishing.
- Hattie, J. (2015). The applicability of visible learning to higher education. *Scholarship of Teaching and Learning in Psychology*, 1(1), 79–91. <https://doi.org/10.1037/stl0000021>.

- Leithwood, K., Harris, A., & Hopkins, D. (2020). Seven strong claims about successful school leadership revisited. *School Leadership & Management*, 40(1), 5–22. <https://doi.org/10.1080/13632434.2019.1596077>
- Malinga, C. B., Jita, L. C., & Bada, A. A. (2021). Instructional leadership capacity of secondary school science heads of department in Gauteng, South Africa. *International Journal of Learning, Teaching and Educational Research*, 20(12), 267–293. <https://doi.org/10.26803/ijlter.20.12.16>.
- Mestry, R. (2017). Principals' perspectives and experiences of their instructional leadership functions to enhance learner achievement in public Schools. *Journal of Education*, 69, 258–280.
- Norman, G. (2010). Likert scales, levels of measurement and the "laws" of statistics. *Advances in Health Sciences Education*, 15, 625–632. <https://doi.org/10.1007/s10459-010-9222-y>.
- Ng, D. F. S. (2019). Instructional leadership. Instructional leadership and leadership for learning in schools. In T. Townsend (Ed.), *Understanding theories of leading* (pp. 15–48). Springer.
- Nguyen, D., Ng, D., Luo, W., & Mansor, S. (2022). Exploring the relationships between instructional leadership and teacher competences: Singapore primary school teachers' perceptions. *International journal of leadership in Education*, 25(6), 919–940. <https://doi.org/10.1080/13603124.2020.1731765>.
- O'shea, C. M., & Zuckerman, S. J. (2022). Comparing rural and non-rural principal's instructional leadership in the age of ESSA. *Rural Educator*, 43(3), 10–25. <https://doi.org/10.55533/2643-9662.1343>.
- Ralebese, M. D., Jita, L., & Badmus, O. T. (2025). Examining primary school principals' instructional leadership practices: A case study on curriculum reform and implementation. *Education Sciences*, 15(1), 70. <https://doi.org/10.3390/educsci15010070>.
- Robinson, V. M. J., Lloyd, C. A., & Rowe, K. J. (2008). The impact of leadership on student outcomes: An analysis of the differential effects of leadership types. *Educational Administration Quarterly*, 44(5), 635–674. <https://doi.org/10.1177/0013161X08321509>.
- Sengai, W. (2021). Heads of department's role in implementation of history syllabi at selected Zimbabwean secondary schools: an instructional leadership perspective. *Yesterday and Today*, 2021(25), 6. <https://doi.org/10.17159/2223-0386/2021/n25a6>.
- Seobi, B. A., & Wood, L. (2016). Improving the instructional leadership of heads of department in under-resourced schools: A collaborative action-learning approach. *South African Journal of Education*, 36(4), 1–14. <https://doi.org/10.15700/saje.v36n4a1326>.
- Shaked, H., & Schechter, C. (2019). School middle leaders' sense making of a generally outlined education reform. *Leadership and Policy in Schools*, 18(3), 412–432. <https://doi.org/10.1080/15700763.2018.1450513>.
- Spillane, J. P. (2005). Distributed leadership. *The Educational Forum*, 69(2), 143–150. <https://doi.org/10.1080/00131720508984678>.
- Taber, K. S. (2018). The use of Cronbach's alpha when developing and reporting research instruments in science education. *Research in Science Education*, 48, 1273–1296. <https://doi.org/10.1007/s11165-016-9602-2>.
- Tapala, T. T., Van Niekerk, M. P., & Mentz, K. (2020). Curriculum leadership barriers experienced by heads of department: A look at South African secondary schools. *International Journal of Leadership in Education*, 24, 771–788. <https://doi.org/10.1080/13603124.2020.1740796>.
- Tlali, T., & Matete, N. (2021). The challenges faced by heads of departments in selected Lesotho high schools. *School Leadership and Management*, 41(3), 194–210. <https://doi.org/10.1080/13632434.2020.1851672>.

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