

Classroom Management and Students' Science Learning at the Secondary Level in Public Schools

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Abstract

The purpose of this study was to assess the status of classroom management practices by science teachers in community schools of Bhaktapur and examined its impact on learning science. The research used a convergent parallel mixed-methods design, which involved six science teachers from six government secondary schools, selected based on purposive sampling. To collect the data, Structured observation Checklist, Semi-structured interview guide line, Open-ended questionnaires and Field notes were used. The researchers used descriptive statistics to analyze quantitative data while thematic analysis served as the method for qualitative data analysis. The research found that 60% of classrooms lacking sufficient teaching materials and many laboratories were inadequately equipped. The teacher behavior assessment showed satisfactory results because teachers scored between 3.58 and 3.78 on the 5-point scale, but the knowledge-practice gap showed that teachers knew the effective strategies for instruction yet they did not apply these methods. Instructional management emerged as the weakest dimension, which showed below-average results in indicators that included classroom interaction ($M = 2.84$), disciplinary problem solving ($M = 2.90$), and encouraging shy students ($M = 2.66$). The students showed high interest ($M = 4.00$), but they only participated at moderate levels ($M = 3.30$). The integrated analysis established that poor classroom management practices together with physical resource shortages and contextual barriers from overcrowding and syllabus pressure create negative impacts on science learning outcomes. The study found that community secondary schools can enhance classroom management through three essential improvements, which involve physical resource investments and practice-oriented teacher professional development with continuous coaching and system-level reforms that include class-size reduction and curriculum realignment.

Keywords: *convergent parallel mixed-method, instructional management, knowledge-practice gap physical management, student behavior, teacher behavior*

Introduction

The secondary school curriculum contains distinctive and unique position of science education globally, because it provides students with opportunities to practice observation and experimentation along with systematic reasoning skills that students need for their personal development which enables them to participate in society and national development activities (Hofstein & Lunetta, 2004; National Research Council, 2012). The educational goals of science teaching depend on two critical factors which include the quality of the

classroom environment and the science teaching methods which teachers use during their teaching activities. Classroom management, which defines student achievement through the combination of physical space organization and student behavior control and instructional delivery and academic learning time optimization, functions as the main element that determines student achievement (Evertson and Weinstein, 2006; Hattie, 2023; Marzano et al., 2003).

Secondary schools operated by the government in Nepal face major problems with their infrastructure and teaching methods because their classrooms become overcrowded and their laboratory spaces remain in poor condition and they experience ongoing shortages of educational resources and their teachers lack proper training [Ministry of Education (MoE), 2022; World Bank, 2022]. The national curriculum documents promote student-centered and inquiry-based teaching methods according to National Curriculum Framework (2019), but most government schools still use teacher-centered and lecture-based teaching methods in their classrooms (Bashyal, 2010; Giri, 2012). The science educational system suffers the most from this gap between educational goals set by policies and actual classroom practices because science education needs laboratory work and hands-on experimentation and group inquiry work as its core teaching methods (Yadav, 2014).

The current research base on classroom management in Nepal remains inadequate because it focused on primary level English classrooms (Bashyal, 2010; Giri, 2012; Shrestha, 2016). Secondary science classrooms which require specific management solutions for laboratory safety and equipment oversight and group inquiry operations had not received sufficient research attention. The majority of Nepalese studies conducted before this research used single-method designs, which limited their ability to assess management practices and their effects on student learning (Fetters et al., 2013).

The existing evidence base shows that no Nepalese study has used mixed-methods research to examine secondary science classroom management, while no research has developed theoretical frameworks for understanding the knowledge-practice gap, or established connections between management factors and science learning outcomes. The study addresses these theoretical gaps through its research. This study addresses these research gap gaps by employing a convergent parallel mixed-methods design (Creswell & Clark, 2017) to investigate classroom management practices and their impact on science learning in community secondary schools of Nepal. The study was guided by four research questions:

1. What is the current status of classroom management (Physical, Instructional and Behavioural management) in secondary-level science classrooms?
2. What challenges do teachers face in managing science classrooms?
3. How does classroom management affect student learning outcomes in science?
4. What strategies can improve classroom management in resource-constrained settings?

The findings are situated within multiple theoretical frameworks including behaviorist reinforcement theory (Skinner, 1953), Kounin's (1970) concept of withitness, and

constructivist pedagogy (Bond & Bedenlier, 2021) to generate both empirical evidence and theoretical bases.

The study has several limitations which need to be recognized by the researcher. The first limitation, the researcher used a study sample which included six teachers from one district to establish statistical generalizability. The findings required contextual applications because they should not be used to represent all Nepalese community schools. The second Limitation, the researchers used a cross-sectional study design which prevents them from establishing causal relationships; they discovered links between management behaviors and educational outcomes. The third factor which affects observed management performance results from the Hawthorne effect, which makes observers believe they experience better management performance. The researcher conducted five lesson observation visits to each teacher because they wanted to help teachers become used to the observation process while reducing their response behavior. The absence of standardized student achievement data has established a measurement barrier which needs resolution through pre/post assessment designs. The study captured only teacher and researcher perspectives; student voices are an important missing element.

Literature Review

Current academic research studies classroom management as a multi-dimensional construct which includes more elements than just discipline reactions (Emmer & Sabornie, 2015; Evertson & Weinstein, 2006). Marzano et al. (2003) identify four core dimensions which include (a) physical management- organization of space, furniture, and other instructional materials; (b) behavioral management- establishment of rules, routines, and positive reinforcement; (c) instructional management- lesson planning, pacing, and technique selection; and (d) time management- efficient allocation and use of instructional time. The science education system employs this multi-dimensional framework because laboratory work and collaborative inquiry create special management needs which require specific solutions (Yadav, 2014). Hattie's (2023) updated visible learning meta-analysis identifies classroom management as among the top 20 influences on student achievement, with an effect size of 0.52 which exceeds the typical effect size of 0.40. Putra and Yanto (2025) conducted a meta-analysis of 45 studies from 2015 to 2024 which showed that effective management positively impacted academic results with a correlation coefficient of $r = 0.61$ while science and mathematics classrooms demonstrated stronger results than humanities classes. The study results demonstrate that management functions as a vital element which helps students achieve their maximum academic potential (Kyriacou, 2009).

Theoretical traditions provide multiple perspectives that explain how to handle classroom discipline. Skinner's (1953) operant conditioning creates the base for behavioral management techniques which use positive reinforcement to promote targeted behaviors and existing rules to minimize disruptive actions. Kohn (1996) and Oliver et al. (2020) establish that unfettered application of external reward systems for motivation will damage students' natural desire to learn. Kounin (1970) developed withitness as a method for teachers to manage their classrooms because it requires them to maintain constant supervision of all classroom activities. Dreikurs' (1998) democratic classroom model and Ginott's (1972)

congruent communication represent from a humanistic view the fundamental basis which enables students to work together through their right to learn and their value as human beings. From the constructivist theory by Piaget and Vygotsky (Bond & Bedenlier, 2021;) requires teachers to shift from controlling their students through their authority to teaching as facilitators because this pedagogy requires teachers to lead students in working together for their research-based learning projects which become especially hard to manage in classrooms that lack sufficient resources and large student bodies.

Research Method

The research used a convergent parallel mixed-methods design (Creswell and Clark, 2017). The researchers collected both quantitative and qualitative data at the same time which they analyzed separately before integrating results through joint display during the interpretation process (Fetters et al., 2013). The chosen design enables researchers to observe all classroom management practices through multiple observations while also studying the complete teacher experience together with their encountered obstacles because these two dimensions support each other instead of duplicating information according to (Guetterman et al., 2015).

Study Setting and Participants

The research was carried out in Bhaktapur district, Bagmati Province of Nepal which serves as a typical example of urban and rural public secondary education system in Nepal (MoE, 2022). The researchers applied purposive sampling (Patton, 2015) to choose six government secondary schools which included three schools from core city area and three schools from rural area as they operated within a 10 km distance from the district center. The eligibility requirements stated that every school needed to function as a community secondary school which employed at least one science teacher who possessed three years of teaching experience and would let others use their classroom space. The research included six science teachers who taught at the secondary level, consisting of four male and two female teachers, who had teaching experience between five to twenty years with an average of 11.2 years.

The researchers established anonymity for teachers by assigning them identification codes which range from T1 to T6. The researcher used thematic saturation to determine sample size which requires six to ten participants for mixed-methods studies that have a primary focus on qualitative research (Guest et al., 2006; Hennink and Kaiser, 2022).

Data Collection Instruments

Researchers created and verified four different research instruments- The Structured Observation Checklist, Open-ended questionnaire, Semi-structured interview guidelines, and Field notes. The Structured Observation Checklist included 34 assessment items which distributed into four assessment areas: Physical Management (10 items), Teacher Behavior (10 items), Student Behavior (8 items) and Instructional Management (6 items) which assess performance through a 5-point Likert scale that ranges from 1 for Poor to 5 for Excellent. The content of the items stems from established assessment tools (Shrestha, 2016; Thani, 2008) which three expert judges examined to determine content validity by applying Lawshe's (1975) standard. The research team established inter-rater reliability through co-observation

of 20% of lessons which produced a Cohen's kappa coefficient result of $\kappa = 0.79$ that demonstrated substantial agreement (McHugh, 2012). The qualitative research instruments consisted of an open-ended nine-item questionnaire and an eight-question semi-structured interview guideline. The research team conducted expert review of all qualitative instruments. Before that, pilot testing with two non-participant teachers was conducted to test the research instruments. The research team conducted the interviews in Nepali and recorded them with audio equipment after obtaining permission and transcribed the recordings into English for analysis. The researchers documented descriptive field notes and reflective field notes throughout their entire observation period.

Procedure

The period of data collection lasted for two months. The researchers obtained written informed consent from all study participants after they received administrative approvals from the District Education Coordination Unit Office and the school principal (American Educational Research Association, 2011). The researchers conducted 30 observations by observing each teacher for five consecutive lessons. The research team conducted open-ended questionnaires right after the fifth observation and they completed semi-structured interviews within two weeks which lasted 30 to 45 minutes each.

Data Analysis

The researchers used IBM SPSS version 26 to analyze quantitative data which involved calculating frequencies, percentage, means and standard deviations for all 34 checklist items across 30 observations. The researchers used Six-phase thematic analysis framework to analyze the qualitative data through six steps which included familiarization, initial coding, theme searching, theme reviewing, theme defining and naming and writing up results (Braun and Clarke's, 2006). The primary researcher and an independent coder achieved 84% agreement in their intercoder evaluation results (Miles et al., 2020). The researchers used a joint display weaving approach to achieve integration of quantitative and qualitative findings (Fetters et al., 2013) which involved combining quantitative results with qualitative themes to create meta-inferences (Tashakkori & Teddlie, 2010). The research increased its credibility through member checking and prolonged engagement and triangulation while thick description provided transferability and the audit trail established dependability and the reflexive journaling method verified confirmability (Lincoln & Guba, 1985).

Results

The results section is basically focused on main three dimensions of classroom management including physical management, behavioral management (teacher behavior and student behavior) and instructional management. This multi-dimensional framework is employs in science education system.

Physical Management

Table 1:

Physical Management Indicators (N = 30 observations)

Indicator	Excellent (%)	Good (%)	Average (%)	Below Avg (%)	Poor (%)	Mean (SD)
Arrangement of desks and benches	0.0	30.0	50.0	20.0	0.0	3.10 (0.71)
Availability of science teaching materials	0.0	26.0	44.0	24.0	6.0	2.90 (0.85)
Shape of classroom	6.0	20.0	70.0	4.0	0.0	3.28 (0.64)
Condition of windows, doors, blackboard	10.0	20.0	50.0	10.0	10.0	3.10 (1.02)
Condition of science laboratory	30.0	20.0	40.0	10.0	10.0	3.40 (1.20)

The physical management indicators showed that classrooms were operating at their average level between two different performance levels (see Table 1). The science teaching materials showed the lowest physical indicator rating which received an average score of 2.90 with a standard deviation of 0.85 because 30 percent of observations received ratings that fell below the average performance level. The classroom space received an average rating for its desk and bench layout which scored 3.10 with a standard deviation of 0.71 and for its window and door and blackboard condition which also scored 3.10 with a standard deviation of 1.02. The laboratory conditions had the widest range of results which received a mean score of 3.40 and a standard deviation of 1.20 because 50 percent of observations received ratings of good or excellent while 20 percent of observations received ratings of below average or poor which showed a substantial difference in performance among different schools.

The qualitative data supported the research results which identified three main themes about laboratory problems and teaching resource shortages and classroom space limitations. T2 described: "We have a science lab, but most equipment is broken or outdated. Students

only memorize content from textbooks because I cannot demonstrate experiments to them. T4 noted: "Fifty-five students in one room. The students occupy three spaces at a bench built for two people. The space prevents any kind of movement. The findings from these accounts match national statistics which show that only 35% of community secondary schools operate functional science laboratories according to (MoE, 2022) and that average classroom sizes normally exceed 52 students.

Teacher Behavior

Table 2:

Teacher Behavior Indicators (N = 30 observations)

Indicator	Excellent (%)	Good (%)	Average (%)	Below Avg (%)	Poor (%)	Mean (SD)
Personality	16.0	30.0	50.0	4.0	0.0	3.58 (0.81)
Self-confidence	14.0	36.0	44.0	6.0	0.0	3.58 (0.81)
Attitude	20.0	38.0	42.0	0.0	0.0	3.78 (0.76)
Competence of subject matter	16.0	44.0	40.0	0.0	0.0	3.76 (0.72)
Performance capacity	10.0	40.0	50.0	0.0	0.0	3.60 (0.67)

Among the four management dimensions, teacher behavior was the first and strong dimension as results shown in Table 2. The two elements of subject matter competence and attitude toward teaching received ratings that fell within the range between average and good with both elements receiving mean scores of 3.76 and 3.78 respectively and standard deviations of 0.72 and 0.76. All six teachers maintained above-average ratings in attitude and competence and performance capacity assessments. The two traits of self-confidence and personality received identical ratings of mean and standard deviation ($M = 3.58$, $SD = 0.81$ for both). The study unveiled two distinct ways of thinking about the gap which exists between theoretical knowledge and practical skills. T3 acknowledged: "I know I should use

group work and positive reinforcement. The classroom becomes noisy, so I use shouting because it provides immediate results. T5 reflected: "In training, we learned many techniques. The absence of instructional materials forces me to teach through lecturing when I have to manage a large number of students. The pattern of high declarative knowledge together with limited procedural knowledge application serves as a vital link between teacher competence and student performance (Ahmed & Din, 2024; Dhakal, 2012).

Student Behavior

Table 3:

Student Behavior Indicators (N = 30 observations)

Indicator	Excellent (%)	Good (%)	Average (%)	Below Avg (%)	Poor (%)	Mean (SD)
Interest	30.0	40.0	30.0	0.0	0.0	4.00 (0.78)
Attention	20.0	24.0	40.0	16.0	0.0	3.48 (0.98)
Asking relative questions	10.0	30.0	50.0	10.0	0.0	3.40 (0.81)
Response to teacher questions	20.0	30.0	40.0	10.0	0.0	3.60 (0.93)
Participation in activities	10.0	30.0	40.0	20.0	0.0	3.30 (0.91)
Following directions	12.0	60.0	28.0	0.0	0.0	3.84 (0.62)

The highest rated indicator among the list of observation checklist was student interest which received a perfect score ($M = 4.00$, $SD = 0.78$), while 70 % of observations achieved good or excellent ratings according to Table 3. The strong point of teacher directions had an average score of 3.84 and standard deviation of 0.62 while 72 percent of observations achieved good or excellent ratings. The study showed that active participation had a score of

3.30 and standard deviation of 0.91 while students showed only moderate engagement in asking relevant questions which received a score of 3.40 and standard deviation of 0.81. The research showed that students' interest in learning activities affects their successful participation in learning activities. T1 reported: "When I ask a question, only two or three hands go up." T6 observed: "Shy students never speak. They are afraid of making mistakes." The teacher observed that students become drowsy after lunch and he needs to shout to wake them up. The study showed that teacher-centered pedagogy creates a learning environment where students passively engage with classroom content because they need to follow their teachers.

Instructional Management

Table 4:

Instructional Management Indicators (N = 30 observations)

Indicator	Excellent (%)	Good (%)	Average (%)	Below Avg (%)	Poor (%)	Mean (SD)
Warming up	6.0	30.0	40.0	20.0	4.0	3.14 (0.94)
Presentation	16.0	40.0	36.0	8.0	0.0	3.64 (0.85)
Use of appropriate techniques	12.0	36.0	40.0	6.0	6.0	3.42 (1.00)
Classroom practice	10.0	30.0	40.0	20.0	0.0	3.30 (0.91)
Teacher command over subject	20.0	30.0	40.0	10.0	0.0	3.60 (0.93)
Teacher control over classroom	18.0	30.0	42.0	10.0	0.0	3.56 (0.91)

Indicator	Excellent (%)	Good (%)	Average (%)	Below Avg (%)	Poor (%)	Mean (SD)
Solving disciplinary problems	10.0	20.0	30.0	30.0	10.0	2.90 (1.12)
Interaction in classroom	4.0	16.0	40.0	20.0	20.0	2.84 (1.06)
Feedback	6.0	34.0	50.0	10.0	0.0	3.36 (0.74)
Achievement of objectives	4.0	30.0	46.0	20.0	0.0	3.18 (0.81)
Clear instruction	6.0	20.0	38.0	20.0	10.0	2.98 (1.07)
Encouraging shy students	0.0	20.0	40.0	26.0	14.0	2.66 (0.94)
Eye contact	0.0	26.0	42.0	20.0	12.0	2.82 (0.95)

The instructional management dimension showed the lowest performance results according to the findings presented in Table 4. The five indicators that received scores below the 3.00 threshold were encouraging shy students ($M = 2.66$, $SD = 0.94$), classroom interaction ($M = 2.84$, $SD = 1.06$), eye contact ($M = 2.82$, $SD = 0.95$), clear instruction ($M = 2.98$, $SD = 1.07$), and disciplinary problem solving ($M = 2.90$, $SD = 1.12$). The observations showed that more than 40% of the cases assessed disciplinary problem solving and classroom interaction and encouraging shy students as below average or poor. The lesson objectives received an average achievement score of ($M = 3.18$, $SD = 0.81$) while teachers used warm-up activities at an inconsistent rate ($M = 3.14$, $SD = 0.94$).

The research identified two main themes which confirmed that schools use a disciplinary system that mainly responds to student misconduct. T2 stated: "I don't have time

to handle each student because they misbehave. I just send them outside or shout." T4 acknowledged: "I try to make eye contact, but the class is so big I can't see the back rows." T1 explained the instructional constraint: "Interactive methods take more time. The syllabus must be completed before the exam period." The accounts show how systemic pressures together with syllabus overload and large class sizes create additional challenges for individual management deficiencies.

Integrated Analysis

Table 5:

Joint Display - Integration of Quantitative and Qualitative Findings

Quantitative Finding	Qualitative Theme	Integrated Interpretation
60% of classrooms lacked sufficient teaching materials (Table 1)	Physical Resource Deficits	Poor physical resources directly limit hands-on science learning, forcing teachers to rely on rote methods.
Teacher competence mean = 3.76 (good) but use of techniques mean = 3.42 (average) (Tables 2, 4)	Knowledge -Practice Gap	Teachers know what to do but cannot implement due to large classes, time constraints, and lack of materials.
Student attention mean = 3.48 (average); participation mean = 3.30 (average) (Table 3)	Student Behavioral Challenges	Low engagement is both a cause and consequence of poor classroom management.
Encouraging shy students mean = 2.66 (poor); solving disciplinary problems mean = 2.90 (below average) (Table 4)	Need for Practical Strategies	Teachers require concrete, context-specific training on proactive management techniques.

According to Table 5, joint display analysis presented quantitative and qualitative outcomes which resulted in new meta-inferences. The finding that 60% of classrooms lacked sufficient teaching materials (quantitative) showed that teachers needed to explain their material shortages through their qualitative descriptions. Teachers have to use rote learning methods because their physical resources are not enough for effective teaching which results in science education loss of essential inquiry and experimentation activities (Yadav, 2014).

The combination of teacher competence scores ($M = 3.76$, good) and teachers' qualitative expressions of frustration at implementation constraints showed that teachers possess adequate knowledge but lack the physical resources class-size conditions and ongoing coaching which they need to apply their knowledge. The research showed that below-average participation ($M = 3.30$) and attention ($M = 3.48$) created a situation where teachers observed students who showed passive behavior and refused to answer questions. The research showed that teachers who fail at instructional management create a situation where students continue to learn at a shallow level while showing little interest in learning.

Discussion

The present study found that classroom management in secondary science classrooms in Bhaktapur's community schools is not satisfactory because both physical management and instructional management show critical deficiencies. The findings of this study validate previous research conducted in Nepal (Bashyal, 2010; Giri, 2012; Thani, 2008) while also demonstrating the educational challenges faced by low-income contexts (UNESCO, 2024; World Bank, 2022). The study presents three main findings which include the multi-dimensional nature of management inadequacy and the existence of a knowledge–practice gap which affects learning outcomes through its impact on management practices.

Multi-Dimensional Management Inadequacy

The findings pattern shows management deficiencies exist as separate challenges because schools display poor physical management and students show moderate behavior and teachers show adequate behavior yet instructional management remains deficient. Physical deficits (broken laboratory equipment, overcrowded rooms, insufficient materials) restrict teachers instructional possibilities because they lack necessary resources to conduct their teaching duties. The study shows classroom physical environment accounts for major differences in student results, according to Wilkins et al. (2022) research findings, while Kounin's (1970) withitness theory explains that class sizes above 50 students create excessive spatial and cognitive challenges for teachers who need to maintain continuous student monitoring.

The students at this institution received low scores for their ability to support shy students who need encouragement ($M = 2.66$) and their ability to promote classroom interaction ($M = 2.84$). The school has not implemented dialogic teaching which serves as the foundation for constructivist science teaching according to Bond and Bedenlier (2021). Science learning requires students to develop the ability to ask questions and create hypotheses while they analyze experimental results. The National Research Council (2012) report states that when people do not interact, all cognitive and metacognitive processes which lead to authentic scientific comprehension become inaccessible.

The Knowledge-Practice Gap

The study discovered its most important theoretical finding through the combination of high teacher competency scores ($M = 3.76$) with low results in instructional management assessments. The knowledge–practice gap has been proven to exist in developing countries according to research from Ahmed and Din (2024) and Dhakal (2012) because it shows how

people know something but cannot apply it in real classroom situations (Anderson and Krathwohl 2001). Skinner's (1953) behaviorist framework suggests that skills require reinforcement through practice; without continuous coaching and performance evaluation students will lose learned skills and their default behaviors (e.g., lecture, shouting) will return. Woodcock and Reupert (2024) demonstrated that beginning teachers who received ongoing mentoring showed significantly better classroom management than those who received only pre-service training. Nepal's present professional development approach which consists of brief theory-heavy workshops without any classroom implementation (MoE, 2022) fails to bridge the knowledge-practice divide. Gold et al. (2021) demonstrated that educators who use video to examine their teaching practices develop their operational management skills through this method which shows potential for implementation across multiple settings.

Management and Science Learning Outcomes

The research findings show that teachers had sufficient skills to deliver satisfactory (average achievement of lesson objectives, $M = 3.18$), because their management methods created obstacles between their classroom knowledge and student learning outcomes. The mediation model confirms Marzano et al.'s (2003) statement that effective classroom management functions as a fundamental requirement for students to achieve academic success while Hattie's (2023) most recent meta-analysis shows an effect size of 0.52. The mechanism operates in a simple way because ineffective management decreases academic learning time because of interruptions and students receiving unclear instructions and time-consuming transitions, which results in less time for significant science activities.

The combination of high student interest score ($M = 4.00$) and low participation ($M = 3.30$) expresses an interpretative relationship between self-determination theory and student behavior (Deci & Ryan 2000) which states that students who possess scientific interest (intrinsic motivation) face barriers to their active motivation expression due to structural conditions that include overcrowded classrooms and inadequate resources and teacher-centered teaching methods which restrict their autonomy and their chance to gain competence. The study shows that motivational capital exists as a distinct concept which researchers use to track its existence through observable actions; organizations can enhance their capacity to manage motivational capital through effective resource management.

Contextual Specificity and Theoretical Implications

The research results show that classroom management requires an understanding of its context because the existing management methods can only be applied under specific conditions which exist due to class size and laboratory capacity limits. Kounin's (1970) withitness, Canter and Canter's (2001) assertive discipline, and Wong and Wong's (2018) procedural routines were all developed in contexts where class sizes are substantially smaller and resource environments more supportive than those found in Nepalese community schools. The management-learning relationship needs theoretical models that exclude resource shortages and overcrowded conditions because these two factors act as structural elements which determine management outcomes.

Conclusion

The study used mixed research methods to establish two main findings which showed that secondary science classes in Bhaktapur community schools faced significant classroom management problems because their management methods failed to manage both physical resources and teaching processes and this failure resulted in direct negative impacts on student science learning. The study makes three distinct contributions. Theoretical boundaries of classroom management need standard frameworks to adapt through structural constraints and overcrowded classrooms and resource limitations and curriculum demands which serve as boundary conditions that influence learning outcomes from classroom management. The research provided the first mixed-methods study of secondary science classroom management in Nepal which showed a persistent knowledge-practice gap that existed despite teachers having sufficient subject knowledge and positive attitudes. The method demonstrates how joint display integration creates analytical value through its ability to produce meta-inferences which go beyond what quantitative and qualitative methods can deliver separately.

The main finding shows that to enhance classroom management in secondary science classes which lack resources teachers need coaching that focuses on their practical needs and schools must receive funding together with systems that protect their disciplinary processes while national governments have to implement class-size limits and provide funds for educational infrastructure and necessary curriculum changes. Science education in Nepal will not improve until the classroom environments in which it occurs are adequate to support it. The research shows that good classroom management is essential for academic success yet these requirements remain unmet in Nepalese community secondary schools according to the situational evidence the study presents while both urgent and understandable solutions exist to address this problem.

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