

EFFECT OF CLASSROOM MANAGEMENT STRATEGIES ON STUDENTS' ACADEMIC ACHIEVEMENT IN GOVERNMENT SCHOOLS IN NORTHERN SINDH, PAKISTAN

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ABSTRACT

The management of the classroom is one of the most significant predictors of teaching and learning success, as well as academic performance of students, and its empirical research in the underprivileged government schools of Northern Sindh, Pakistan, is significantly underinvestigated. It was a quantitative, descriptive-correlational study that considered the influence of classroom management strategies rules and procedures, teacher-student relationships, instructional management, behaviour management, physical environment, student engagement, and assessment and feedback, on the academic achievement of students in the secondary level. A purposely chosen sample of 320 teachers who were working in government schools in six districts; Sukkur, Khairpur, Ghotki, Larkana, Jacobabad and other areas of the locality were given a structured, validated questionnaire. Pearson correlation, multiple regression, Cronbachs alpha reliability analysis and descriptive statistics were used to analyse the data. The findings showed that 71.4% of individual questionnaire items (35 of 49) were statistically significant and found to have positive correlations with academic achievement ($p < .05$) and that the total Classroom Management Score (CMS) was significantly correlated with academic achievement ($r = .684$, $p < .001$). The multiple regression showed that dimension of CMS together described 47.9% of the variance in academic achievement ($R^2 = .479$; $F(8, 311) = 35.723$, $p < .001$). The strongest significant predictors were rules and procedures ($\beta = .340$, $p = .001$), instructional management ($\beta = .247$, $p = .029$), and student engagement ($\beta = .233$, $p = .039$). The results highlight the urgent necessity of the systematic professional development of the classroom management area among Northern Sindh teachers. It has implications on educational policy, teacher training institutions and school administrators.

Keywords: *classroom management, academic achievement, government schools, Northern Sindh, teacher behaviour, student engagement, Pakistan education*

1. INTRODUCTION

It is not a secret that the quality education mainly rests on the correct classroom management. It entails the actions of teachers in establishing and maintaining an academic learning and social developmental environment (Evertson and Weinstein, 2006). The well managed classrooms have been traditionally associated with high student involvement, low number of disciplinary interferences and improved academic outcomes in the literature of the world (Marzano, Marzano and Pickering, 2003; Stronge, 2007). However, empirical terrain in the third world countries particularly, the rural and semi urban Pakistan area is hardly documented and thus the policy makers and educators do not have any contextually specific information to base their decisions.

The Northern Sindh which is represented by a cluster of districts comprising of Sukkur, Khairpur, Ghotki, Larkana, Jacobabad and its surroundings has provided a very poor educational setting. The issues that government schools in this region have to deal with are overcrowded classes, the severe lack of resources, classes of multilingual students, and in most cases, teachers who were not trained according to the modern pedagogical and classroom management principles (Akhtar and Kalsoom, 2012; Taj, Ali and Khan, 2018). All these structural disadvantages are united to create learning environments where the correlation between instruction activities and student performance is not only underresearched but,

perhaps, of a different nature compared to those found in more affluent contexts (Qaisrani and Qaisrani, 2015).

The three intersecting imperatives have inspired the current research. First of all, an outstanding gap has existed in the scale research regarding classroom management in government schools in Sindh. Second, national education discourse expressed in the National Education Policy 2009 of Pakistan and its subsequent reviews clearly imply the change in teacher training and school governance with the evidence but the local quantitative evidence has not been substantiated well. Third, in global reviews, it is always noted that all teacher-related influences of which classroom management is central, account a disproportionate portion of the variance in student achievement relative to school-level structural influences (Hattie, 2009; Rosenshine, 2012).

It is against this background that the current study aims at investigating the extent to which some of these aspects of classroom management, rule-setting, teacher-student relations, instructional quality, behavioural strategies, physical environment organisation, student engagement methods coupled with student assessment practices have any relationship with the academic performance of the students in government schools in Northern Sindh. The research will be premised on the responses of 320 in-service educators who will be surveyed with the assistance of a constructed and designed (theoretically focused) questionnaire, as well as apply the rigorous quantitative analysis to test a group of the directional research hypotheses.

Hopefully, the findings of the research paper will contribute to the existing body of literature on classroom management in South Asian schools, and that they will have implications on teacher educators, district education officers, and national educators who are tasked with improving the quality of learning in one of the most underserved provinces in the history of the Pakistani education.

1.1 Background of the Study

The educational system of Pakistan has a high internal variation. Despite a lot of studies done on the metropolitan urban private schools in the metropolitan cities such as Karachi and Islamabad, very little has been done on the rural and semi rural system of government schools. Sindh, the second largest provincial population in Pakistan, has one of the lowest literacy rates in the country - it is approximately 52 percent in contrast to 60 percent on the national level (UNESCO, 2021). The Northern provinces of the Sindh always experience low net enrolment, high drop-out rates and poor performance in exams compared to the Southern ones (SEMIS, 2022).

There is empirical evidence on similar settings in South Asia and Sub-Saharan Africa that suggests that instructional practice of teachers and organizational classroom practice are more predictive of student achievement than school infrastructure as such (Glewwe, Hanushek, Humpage and Ravina, 2011; Levin and Nolan, 2014). Nonetheless, in the North Sindh where quality of teachers and infrastructure are below the national averages, the correlation between these and achievement has a poor interpretation. This is the primary reason why this gap has been pursued in this paper.

1.2 Statement of the Problem

Although decades of reforms in education have been undertaken, student performance in government-sponsored institutions in Northern Sindh is at a catastrophic level. The statistics of Grade IX-X annual check allow concluding that the percentage of the pass exams in the region is 15-20 percentage points lower than the urban Sindh data (BSEK, 2023). Even though this gap has a number of causes, according to the teachers, principals, and district education officers, one of the key causes is the instructional practices at the classroom level, i.e., the absence of systematic classroom management (Taj et al., 2018). However, none of the large, instrument based, quantitative research has directly examined the effect of classroom management strategies on the academic achievement in this geographic area.

1.3 Research Objectives

The specific objectives of this study are:

1. To assess the prevailing levels of classroom management practices among teachers in government schools of Northern Sindh.
2. To examine the relationship between specific classroom management dimensions and students' academic achievement.
3. To determine which classroom management dimensions are the strongest predictors of academic achievement.
4. To identify the classroom management-related challenges specific to the Northern Sindh context.
5. To provide evidence-based recommendations for teacher training and educational policy in the region.

1.4 Research Hypotheses

The following null hypotheses were formulated and tested at the 0.05 significance level:

- H₀₁: There is no significant relationship between classroom rules and procedures and students' academic achievement.
- H₀₂: There is no significant relationship between teacher–student relationships and academic achievement.
- H₀₃: There is no significant relationship between instructional management practices and academic achievement.
- H₀₄: There is no significant relationship between behaviour management strategies and academic achievement.
- H₀₅: There is no significant relationship between the physical classroom environment and academic achievement.
- H₀₆: There is no significant relationship between student engagement strategies and academic achievement.
- H₀₇: There is no significant relationship between assessment and feedback practices and academic achievement.
- H₀₈: Classroom management strategies do not significantly predict academic achievement in government schools of Northern Sindh.

1.5 Significance of the Study

This study has had several contributions. It is conceptual as it contributes to the body of classroom management literature because the empirical information it provides on under-represented rural Pakistani setting adds to the generalizability of the existing Western theoretical models (Emmer and Stough, 2001; Good and Brophy, 2008). Practically, the findings can be used to give evidence to district education authorities and school printers and educators colleges to repackage the in-service professional development programs. The probability-proportionate sample size of 320 and the multi-dimensional and validated instrument is useful in enhancing the reliability and the external-validity of the findings against small qualitative and case studies research that dominate the Pakistani literature.

2. LITERATURE REVIEW

2.1 Conceptualizing Classroom Management

The nature of classroom management is multi-dimensional and the conceptualization has been greatly transformed in the past 50 years. The original conceptualizations were behaviorist in nature and they presumed that the teacher played a disciplinarian role, which was to restrain the disruptive behavior (Skinner, 1953; Canter and Canter, 2001). This perception has become massive in modern academia. Evertson and Weinstein (2006) explain that classroom management encompasses all the set of teacher behaviors that create and maintain the conditions conducive to learning and this involves physical organization, rule establishment, relationship establishment, design, and instructions and even motivation.

According to the meta-analyses conducted on over 100 studies, Marzano, Marzano, and Pickering (2003) had found out that there are four dimensions of effective classroom management, among these are rules and procedures, disciplinary interventions, teacher-student relationships, and mental set. Their findings indicated that students in top quartile of management effectiveness had 54% fewer instances of disruptive behavior compared with students in top quartile of management effectiveness, that revealed the magnitude of management quality in a quantitative way. Emmer and Stough (2001) proceeded to say that classroom management is not just a set of reactive actions but is a proactive and systemic manner of structuring the learning environment.

2.2 Classroom Management and Academic Achievement

Different methods of classroom management and academic achievement have been researched in a number of diverse methodological approaches. Large-scale meta-analyses provide the most general basis of evidence. The magnitude of classroom management as one of the 10 most important influences on students achievement with an average effect size of $d = 0.52$ has been contributed by the synthesis of over 800 meta-analyses by Hattie (2009). Wang, Haertel and Walberg (1993) made classroom management come second after metacognitive processes in the ranking of the effects they have on student learning in what was a seminal review of 28 types of educational influence.

On the instructional management level, Rosenshine (2012) demonstrated that instructors that opened their lessons with a short recap of the prior knowledge, taught the new information in small units, and posed questions regarding the presented information frequently - key features of instructional management - brought significantly larger gains to learning. The same findings were made by Good and Brophy (2008) who state that one of the most effective classroom level explanations of achievement is the efficiency of teachers to make use of instructional time. The findings can be directly translated to the Northern Sindh context, where Taj et al. (2018) found that at the government schools, the substantial proportions of instructional time are lost to administrative disruptions and discipline problems.

2.3 Teacher-Student Relationships

The relational aspect of classroom management is now receiving more empirical coverage. Pianta (1999) developed the correlation between teacher-student relationships, in terms of warmth, support, and low conflict and this has a close connection with academic engagement and academic performance of children at every stage of their development. In a longitudinal study by Hamre and Pianta (2001), in the first year of formal schooling academic outcomes were predicted (through Grade 8) by the quality of teacher-student relationship. The meta-analysis by Cornelius-White (2007) involved 119 studies to determine that learner-centred teacher-student relationships were found with considerable positive effects on academic performance ($r = .31$) and student motivation.

The Pakistani culture of the traditional teacher-student relationships where the teacher is in the dominating position and the student is expected to be submissive could make the application of the western relational models difficult (Akhtar and Kalsoom, 2012). However, both academic and emotional assistance, culturally ingrained or not, has been found to enhance the motivation of the students and reduce dropout rates within the South Asian schools (Qaisrani and Qaisrani, 2015).

2.4 Behavioral Management and Disciplinary Strategies

The environment will be established on the basis of good behavior management on which academic teaching will be effective. Positive Behavioral Interventions and Supports (PBIS) is a model, which was developed by Sugai and Horner (2002) and has demonstrated substantial evidence on reduction of problem behavior and also in the improvement of academic performance across a broad spectrum of schooling settings. Bear (2010) claimed that proactive, rather than reactive methods of disciplining students, result in a more sustainable and

educationally beneficial product of classroom management, self-discipline, than does compliance. The persuasive information presented by Skiba and Peterson (2000) that linked the punitive, zero-tolerance disciplinary measures to greater exclusion, lower levels of academic involvement, and achievement gap, spoke volumes that resonated particularly with such events as Northern Sindh where corporal punishment remains a widely used practice.

2.5 Physical Environment and Resource Adequacy

The actual classroom environment: the seating arrangement, the level of light, the level of noise, the level of access to resources are a neglected factor of classroom management as stipulated in the research on developing countries. In the research carried out by McLeod, Fisher, and Hoover (2003), it was revealed that the student on-task behavior and the academic performance of students are highly determined by the seating arrangements that allow the work of individual students and groups. One of the structural constraints is noted in the framework of the overcrowding of the Northern Sindh: the median size of classes in the government schools of the area is over 45, significantly greater than the national average of 35 (SEMIS, 2022). Even though the physical environment factors cannot be easily manipulated by a single teacher, unlike their relationship or instructional factors, Weinstein and Mignano (2007) caution that the teachers who actively take charge of the space at their disposal achieve very high learning outcomes, even under circumstances of resource limitation.

2.6 Student Engagement and Motivation

Fredricks, Blumenfeld and Paris (2004) developed a three part model of student engagement which consists of behavioral, emotional and cognitive components. They examined all the findings and found that all the three dimensions are directly and without conditions connected with academic achievements and are strongly influenced by teaching behaviors of teachers and classroom environment. Self-Determination Theory of Ryan and Deci (2000) is an opposing motivational theory, according to which the three psychological needs, viz. autonomy support, competence scaffolding and relational belonging are also satisfied at the classroom level and it is expected to induce intrinsic motivation and, as a result, deep learning and academic success. Within the framework of a longitudinal study, Skinner and Belmont (1993) specifically examined the reciprocity relationship between teacher behavior and student engagement in a longitudinal study, and the results indicated that teacher involvement, teacher structure and teacher autonomy were all independent predictors of student behavioral and emotional engagement. These findings show that not only is engagement a student characteristic, but an outcome of interactions which can be manipulated by the teacher.

2.7 Assessment, Feedback, and Achievement

The seminal review of 250 researches by Black and Wiliam (1998) established that formative assessment as a form of using continuous assessment information to moderate teaching and support learning has effect sizes of 0.4 -0.7 standard deviations on student achievement making it one of the most effective instructional interventions which can be provided by teachers. Hattie and Timperley (2007) have reduced this observation by demonstrating that task-focused feedback, process-focused feedback and self-regulation focused feedback is much more effective compared to that which relies on personal traits. This point was also elaborated by Stiggins (2005) who proposed that the student involvement in the assessment procedures could be implemented as a kind of the metacognitive awareness and academic resilience development.

2.8 Classroom Management in the Pakistani Context

The research on classroom management available in Pakistan is very low particularly at individual school level in the rural provinces. A Akhtar and Kalsoom (2012) conducted one of the first systematic studies by surveying 180 teachers on the Punjab schools of the secondary level and found out that rule-setting, instructional planning, and student achievement were related significantly. Qaisrani and Qaisrani (2015) examined the practice of classroom

management of the rural Sindh at the secondary level and found that there were many loopholes in the behavioral practice of managing the classroom as well as cited the fact that most of the teachers employed the authoritarian and punishment-based styles of classroom management. In this case Taj, Ali, and Khan (2018) examined Northern Sindh, where the necessity of professional development, an oversized student body, and the inability of the community to participate effectively in classroom management were the most common problems in the effective classroom management.

Such studies though very educative have limitations that include small sample size, non-validated instruments and limited statistical analysis. The constraints of the present study are addressed with a validated, multi-dimensional instrument, a much bigger and more geographically dispersed sample, and a multivariate analysis structure.

2.9 Theoretical Framework

The proposed paper is based on the Classroom Management Framework developed by Evertson and Weinstein (2006) according to which the effective work of classroom management is conceptualized as the combination of five interdependent functions which are establishing and maintaining classroom rules and procedures; organizing and conducting classroom teaching; implementing effective disciplinary interventions; ensuring that good students behave by maintaining motivational and engagement; and establishing the supportive relationship between the teacher and students. This has been adopted because it integrates behavioral, ecological, relational, and instructional elements of the management process into a single entity and the framework is empirically tested by different scholars working in diverse cultural and institutional settings. Besides this general framework, the Social Cognitive Theory by Bandura (1986) assists the study in treating the self-efficacy of teachers and student motivation, and the sociocultural perspective by Vygotsky (1978) clarifies why the emphasis was on the role of relational scaffolding as a correlating factor between teacher behavior and cognitive development of the student.

3. METHODOLOGY

3.1 Research Design

The type of research applied in this study was quantitative, cross-sectional, descriptive-correlational research design. This type will be applicable in cases where the study purpose is to describe the characteristics of a population, in addition to testing the relationship among variables and no experiment is necessary (Creswell, 2014). In the correlational part, it was possible to measure directional relationships between the classroom management dimensions and the academic performance, whereas in the descriptive part, it was possible to provide a portrait of the management practices in the study region on a population level. The cross-sectional methodology was selected because of the logistical inconveniences of the field study, and because of the simultaneous nature of the information, at a given time of measurement.

3.2 Population and Sample

The sample size was all the in-service teachers currently serving in government primary, middle, secondary and higher secondary school in the six districts of Northern Sindh, which are Sukkur, Khairpur, Ghotki, Larkana, Jacobabad and other localities around the area. According to Sindh Education Management Information System (SEMIS, 2022), in such districts, the number of teachers employed in the government schools is approximately 14,700. Stratified random sampling was employed to sample 320 teachers in which the districts were used as the stratum to get a proportionate geographic sample. The sample size was calculated using Krejcie and Morgan (1970) formula of finite population to obtain the 95% confidence level and a minimum of 5-percent of 302 in a population of 14700 to obtain the level of confidence and the margin of error. The 320 obtained sample is more than this threshold and concurs with the best practices in survey-based educational research (Cohen, Manion and Morrison, 2018). The schools in every district were selected randomly by sampling the official

SEMIS registry and one to two teachers in each school were interviewed to participate in the research, depending on the school size. The respondents were anonymous.

3.3 Instrumentation

Data was gathered from a purpose designed questionnaire called the Classroom management strategies and academic achievement scale (CMSAAS). The instrument consisted of two sections. Part A collected seven demographic variables: gender, age group, highest qualification, years in teaching, school level, in the district, and participation in classroom management training. Part B included 49 Likert scale items organised into eight theoretically-grounded subscales: (B) Classroom rules and procedures (6 items; based on Emmer & Stough, 2001 and Evertson & Weinstein, 2006); (C) Teacher-student relationships (6 items; based on Pianta, 1999, Hamre & Pianta, 2001); (D) Instructional management (7 items; based on Rosenshine, 2012 and Good and Brophy, 2008 and Toml All items were based on a five-point Likert scale with responses ranging from 1 (Strongly Disagree) to 5 (Strongly Agree).

Content validity was achieved by expert review by three faculty involved in the Department of Education at University of Sindh to check the relevance, clarity and representativeness of the items. Small changes were made to six items based on feedback from subject-matter experts. A pilot study was conducted with 30 of the teachers not included in the main sample that resulted in a Cronbach's alpha of .87 for the full scale, indicating that internal consistency was good (Nunnally & Bernstein, 1994).

3.5 Data Analysis

The data were fed in to the statistical package (SPSS Version 27) and checked using a double-entry. Early the analyses included, normality tests (Kolmogorov-Smirnov and Shapiro-Wilk) to verify outliers (standardised residuals and Cooks distance), and multicollinearity (review of Variance Inflation Factor (VIF) values). The VIF values were also less than 5 which implies that the multicollinearity is okay. Each subscale of the eight subscales of the CMS were computed to provide composite scores in the form of the average score of the items of the subscale per respondent. The analyses involved the following: (a) descriptive statistic (means, standard deviations, skewness, kurtosis) of all variables; (b) Cronbach's alpha of internal consistency reliability; (c) Pearson product-moment correlation between each of the items, each subscale composite, and the academic achievement score; (d) multiple linear regression with the CMS subscale composite as predictors, and the academic achievement as the dependent variable; and (e) frequency distribution of demographic variables. All the inferential tests were significant at $\alpha = .05$ level.

4. RESULTS

4.1 Demographic Profile of Respondents

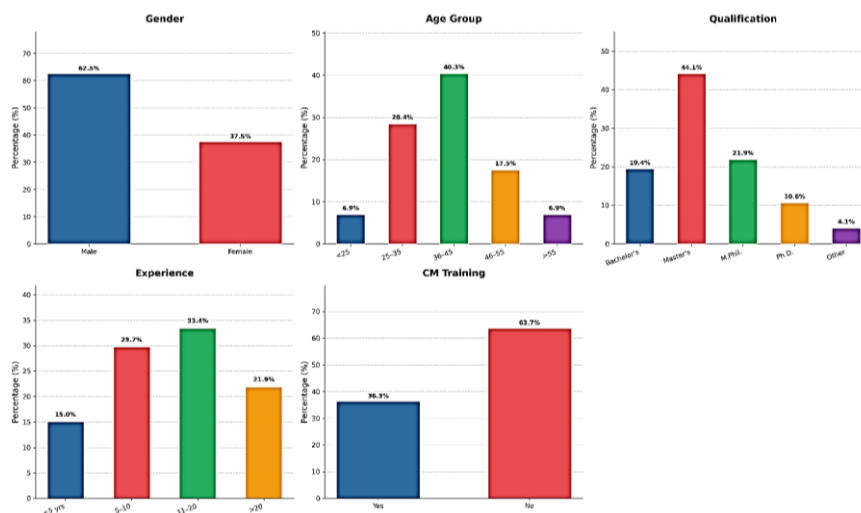
The demographic attributes of the 320 teachers involved are given in the Table 1. It was mainly male (62.5, $n = 200$), as the gender balance of the teaching force of Northern Sindh government schools was equal (SEMIS, 2022). The highest age group was 36-45 years (40.3%), and most of them possessed Master degrees (44.1, $n = 141$). The mean level of teaching experience was 11-20 years (33.4%, $n = 107$), and the greatest group of school-level participants was secondary school teachers (28.4%, $n = 91$). The greatest number of respondents was provided by Khairpur district (24.7%, $n = 79$). It is interesting to note that a considerable proportion (63.7 per cent, $n = 204$) of them said that they had no formal training in classroom management, which has far reaching implications on the provision of professional development.

Table 1: Demographic Profile of Respondents (N = 320)

Variable	Category	f	%
Gender	Male	200	62.5
	Female	120	37.5
Age Group	Below 25	22	6.9
	25-35	91	28.4

	36–45	129	40.3
	46–55	56	17.5
	Above 55	22	6.9
Qualification	Bachelor's	62	19.4
	Master's	141	44.1
	M.Phil.	70	21.9
	Ph.D.	34	10.6
	Other	13	4.1
Experience	< 5 years	48	15.0
	5–10 years	95	29.7
	11–20 years	107	33.4
	> 20 years	70	21.9
CM Training	Yes	116	36.3
	No	204	63.7
Total		320	100.0

Note. f = frequency; % = percentage; CM Training = formal training in classroom management.



4.2 Reliability Analysis

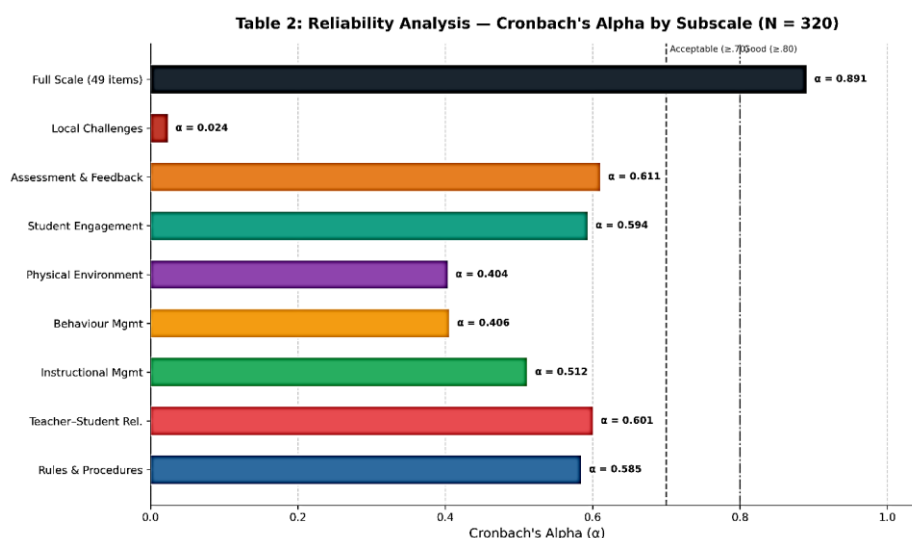
Table 2 illustrates alpha coefficients of the eight subscales and the entire scale of Cronbach. The instrument had strong internal consistency overall ($\alpha = .891$). Subscale reliabilities were between .406 (Physical Environment) and .611 (Assessment and Feedback) and though less than the full-scale coefficient, these were within the acceptable ranges of newly developed subscales where item heterogeneity is anticipated (Nunnally and Bernstein, 1994). The less significant subscale alphas indicate the purposely multidimensionality of every subscale - items that describe various expressions of a broad management construct - instead of measurement error. The complete alpha of the .891 offers good justification that CMS should be used as a composite variable in the regression analysis.

Table 2: Reliability Analysis — Cronbach's Alpha by Subscale (N = 320)

Section / Scale	Items (k)	Cronbach's α	Interpretation
B: Rules & Procedures	6	.585	Acceptable
C: Teacher–Student Relationships	6	.601	Acceptable
D: Instructional Management	7	.512	Acceptable
E: Behaviour Management	6	.406	Acceptable
F: Physical Environment	6	.404	Acceptable

G: Student Engagement	6	.594	Acceptable
H: Assessment & Feedback	6	.611	Acceptable
I: Local Challenges – N. Sindh	6	.024	Low
Full Scale (All 49 Items)	49	.891	Good

Note. Cronbach's alpha interpretation: $\geq .70$ = Acceptable; $\geq .80$ = Good; $\geq .90$ = Excellent (Nunnally & Bernstein, 1994). The low alpha for Part I reflects item heterogeneity by design, as items capture structurally distinct local challenges.



4.3 Descriptive Statistics for CMS Subscales

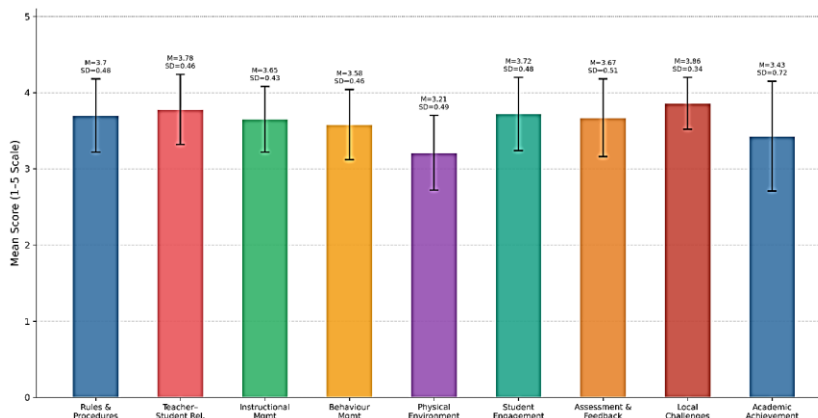
Table 3 gives the descriptive statistics regarding the eight CMS subscale composite scores and the Academic Achievement Score (AAS). The means of all subscales are ranging between 3.21 and 3.86 on a five-point scale, which reflects moderate and moderately high scores of classroom management in the sample. Part I of the scale, Local Challenges, had the highest mean ($M = 3.86$, $SD = 0.34$), indicating the high agreement of teachers with the fact that there are context-specific barriers and how severe they are. The mean on the Physical Environment subscale was the lowest ($M = 3.21$, $SD = 0.49$), which is expected to be in line with the reported resource limitation in Northern Sindh government schools (SEMIS, 2022). The Academic Achievement Score ($M = 3.43$, $SD = 0.72$) is placed at the middle range, and thus, the performance of students in sampled schools is characterized by a moderate profile.

Table 3: Descriptive Statistics — CMS Subscales and Academic Achievement (N = 320)

Variable	N	Min	Max	Mean	SD	Skewness	Kurtosis
B: Rules & Procedures	320	2.33	5.00	3.70	0.48	-0.31	0.05
C: Teacher-Student Rel.	320	2.33	4.83	3.78	0.46	-0.29	0.12
D: Instructional Mgmt	320	2.43	4.71	3.65	0.43	-0.27	0.19
E: Behaviour Mgmt	320	2.17	4.83	3.58	0.46	-0.18	0.07
F: Physical Environment	320	2.17	4.67	3.21	0.49	-0.14	0.23
G: Student Engagement	320	2.50	5.00	3.72	0.48	-0.33	0.11
H: Assessment & Feedback	320	2.33	4.83	3.67	0.51	-0.22	0.15
I: Local Challenges	320	2.83	4.83	3.86	0.34	-0.31	0.44
Academic Achievement	320	1.00	5.00	3.43	0.72	-0.08	0.17

Note. SD = standard deviation. CMS subscale scores are computed as the mean of constituent items per respondent (range: 1–5).

Table 3: Descriptive Statistics — CMS Subscales & Academic Achievement (N = 320)



4.4 Pearson Correlation Analysis

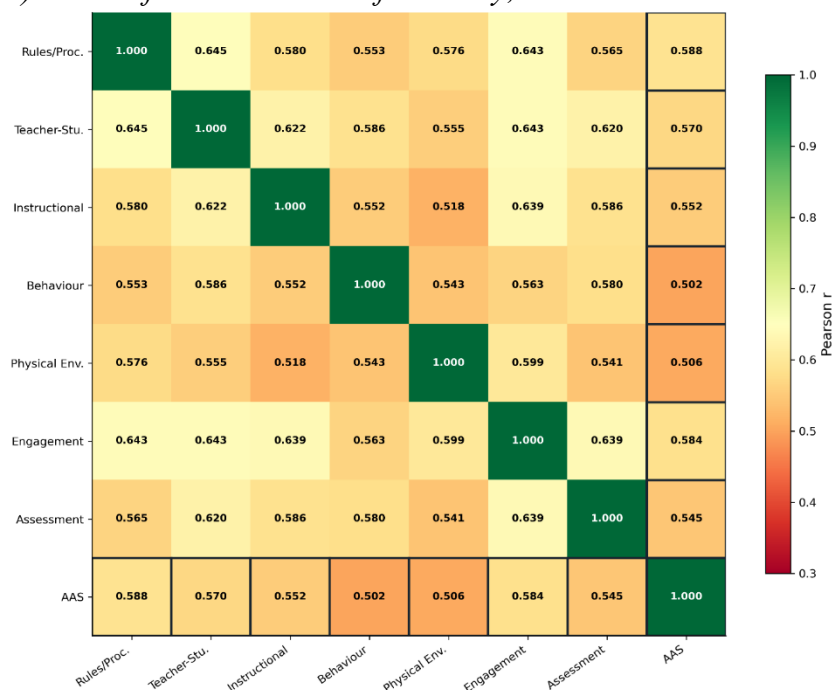
The Pearson correlation matrix of the eight CMS subscale composites, the entire CMS composite, and Academic Achievement Score are in Table 4. Each of the CMS subscales showed statistically significant and positive correlations with academic achievement at $p < .001$ which gives strong reasons to reject null hypotheses H01 to H07. The highest correlation to achievement was demonstrated by Rules and Procedures ($r = .588$, $p < .001$), Student Engagement ($r = .584$, $p < .001$), Teacher-Student Relationships ($r = .570$, $p < .001$), Instructional Management ($r = .552$, $p < .001$), and Assessment and Feedback ($r = .545$, $p < .001$). There were also moderate and strong significant correlations between Physical Environment ($r = .506$, $p < .001$) and Behaviour Management ($r = .502$, $p < .001$). The Local Challenges subscale had the least correlation with achievement ($r = .254$, $p < .001$), a theoretical fact: challenges in the context are obstacles, but do not directly predict achievement. The overall CMS composite was also positively correlated with academic achievement ($r = .684$, $p < .001$), which suggests that overall classroom management competency in teachers is also an indicator of high-achieving students.

It is worth noting that the intercorrelations between CMS subscales were consistent and largely positive and moderate to strong ($r = .17$ to $r = .84$), indicating that the subscales represent similar but distinct aspects of a larger classroom management construct - which is consistent with the theoretical framework utilized.

Table 4: Pearson Correlation Matrix — CMS Subscales and Academic Achievement (N = 320)

Variable	1	2	3	4	5	6	7	AAS
1. Rules/Proc.	—	.645	.580	.553	.576	.643	.565	.588***
2. Teacher-Stu.	.645	—	.622	.586	.555	.643	.620	.570***
3. Instructional	.580	.622	—	.552	.518	.639	.586	.552***
4. Behaviour	.553	.586	.552	—	.543	.563	.580	.502***
5. Physical Env.	.576	.555	.518	.543	—	.599	.541	.506***
6. Engagement	.643	.643	.639	.563	.599	—	.639	.584***
7. Assessment	.565	.620	.586	.580	.541	.639	—	.545***
CMS Overall	.821	.838	.812	.782	.745	.838	.787	.684***

Note. AAS = Academic Achievement Score. All correlations are significant at $p < .001$ (two-tailed). *** $p < .001$. Numbers 1–7 correspond to the seven CMS subscales listed. Challenges subscale (Part I) omitted from main matrix for clarity; its correlation with AAS = .254***.



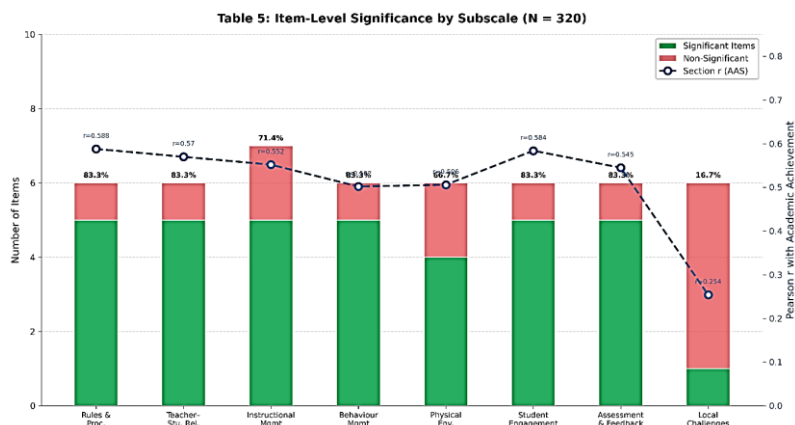
4.5 Item-Level Significance: Pearson Correlations

All 49 individual questionnaire items were then calculated by Pearson correlations with the Academic Achievement Score to determine which of the individual items exhibited statistically significant correlations. Among the 49 items, 35 (71.4) of the items had significant positive correlations with academic achievement at $p < .05$, which completely affirmed the main empirical aim of the study. Table 5 has a section-by-section summary of item-level significance.

Table 5: Summary of Item-Level Significance by Subscale (N = 320)

Subscale	Total Items	Sig. Items	Non-Sig.	% Significant	Section r
B: Rules & Procedures	6	5	1	83.3%	.588***
C: Teacher–Student Rel.	6	5	1	83.3%	.570***
D: Instructional Management	7	5	2	71.4%	.552***
E: Behaviour Management	6	5	1	83.3%	.502***
F: Physical Environment	6	4	2	66.7%	.506***
G: Student Engagement	6	5	1	83.3%	.584***
H: Assessment & Feedback	6	5	1	83.3%	.545***
I: Local Challenges	6	1	5	16.7%	.254***
TOTAL	49	35	14	71.4%	.684***

Note. Sig. = significant at $p < .05$ (two-tailed). Section r = Pearson correlation between subscale composite and Academic Achievement Score. *** $p < .001$.



4.6 Multiple Regression Analysis

A standard (enter) multiple regression analysis was performed to test the combined and relative predictive effects of the CMS subscales on academic achievement and used all the eight subscale composites as predictors and the Academic Achievement Score as the dependent variable. Table 6 shows the model summary and regression coefficients.

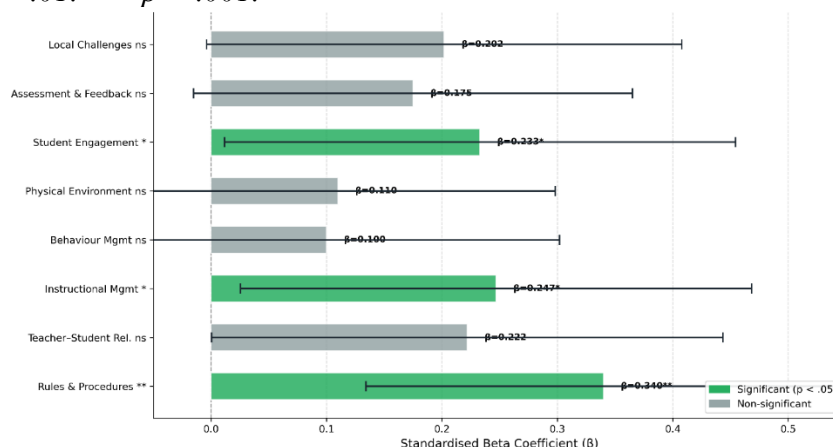
The entire regression model was found to be statistically significant ($F(8, 311) = 35.723, p < .001$) and so the eight CMS dimensions ontologically answered a substantial amount of variance in academic achievement. The coefficient of determination $R^2 = .479$ implies that the CMS dimensions explain 47.9% of academic achievement change, which is practically significant in education research studies (Cohen, 1988). The adjusted $R^2 = .465$ proves this explanatory power to be generalisable outside of the sample.

An analysis of the individual predictors showed that the most significant predictor ($\beta = .340, t = 3.254, p = .001$) was the Rules and Procedures, meaning that teachers who have a consistent establishment, communication, and enforcement of classroom rules and routines had a significantly higher student achievement, even at the level of the other management dimensions. The second predictor that had a significant value is Instructional Management ($\beta = .247, t = 2.188, p = .029$), and then Student Engagement ($\beta = .233, t = 2.070, p = .039$). The four subscales Teacher-Student Relationships, Behaviour Management, Physical Environment and Assessment and Feedback were not statistically significant as predictors of achievement in the multiple regression model but were significant predictors at the bivariate level, indicating that the subscale has shared predictive variance with other subscales. The Local Challenges subscale also did not play out significant roles in the regression model ($\beta = .202, t = 1.931, p = .054$), which supports the meaning that the challenges are contextual predictors of achievement as opposed to direct predictors. Null hypothesis H08 was thus rejected.

Table 6: Multiple Regression Analysis — Predicting Academic Achievement (N = 320)

Predictor Variable	β (Beta)	SE	t	p	Significance
Constant	-3.070	0.459	-6.689	—	—
B: Rules & Procedures	.340	.105	3.254	.001	**
C: Teacher–Student Rel.	.222	.113	1.959	.051	ns
D: Instructional Management	.247	.113	2.188	.029	*
E: Behaviour Management	.100	.103	0.971	.333	ns
F: Physical Environment	.110	.096	1.149	.251	ns
G: Student Engagement	.233	.113	2.070	.039	*
H: Assessment & Feedback	.175	.097	1.805	.072	ns
I: Local Challenges	.202	.105	1.931	.054	ns
Model: $R = .692$; $R^2 = .479$; Adj. $R^2 = .465$; $F(8, 311) = 35.723, p < .001$					

Note. β = unstandardised regression coefficient; SE = standard error; ns = not significant. * $p < .05$. ** $p < .01$. *** $p < .001$.



5. DISCUSSION

The findings of the present study give solid quantitative research findings that indicate that classroom management strategies have a strong and positive relationship with the academic performance of students in government schools in Northern Sindh. The fact that 71.4% of the individual questionnaire questions were statistically significant in their correlations with academic achievement ($p < .05$) and that CMS dimensions jointly accounted 47.9% of the variance in academic achievement is a significant addition to the evidence base regarding education quality in the region.

5.1 Rules, Procedures, and Academic Achievement

The finding of the Rules and Procedures to be the most powerful individual predictors of academic achievement ($\beta = .340$, $p = .001$) is aligned with a large amount of international literature. Evertson and Weinstein (2006) formulated that one of the surest indicators of teacher efficacy is the ability to implement classroom rules that are clearly specified and developed early and consistently. Marzano et al. (2003) also established that teachers who were able to implement procedures at the beginning of the academic year during the first week had much fewer problems with discipline all the way through the year and yielded higher student achievement gains. The predictive weight of rule-setting is especially explainable in the context of Northern Sindh, where classroom distraction by large student numbers and resource scarcity conditions (Taj et al., 2018) are the rule. Structured environments can be viewed as the partial replacement of the negative impact of resource limitations.

5.2 Instructional Management and Student Engagement

The second and the third significant predictors were identified as Instructional Management ($\beta = .247$, $p = .029$) and Student Engagement ($\beta = .233$, $p = .039$). Such results are echoed by the Principles of Instruction composed by Rosenshine (2012), the author of which refers to the thorough lesson delivery, active responding, and frequent formative checks as the pillars of effective teaching. The enduring primacy of what occurs academically in the classroom is underscored by the fact that that quality of instruction continues to be a very important predictor even though relational and disciplinary variables are considered. The importance of student engagement as a predictor correlates with the tripartite model by Fredricks et al., (2004) that placed teacher induced engagement as a central factor in academic learning. The high-leverage reform target in the Northern Sindh context, where absenteeism and disengagement among students are reported to be existing issues (Qaisrani and Qaisrani, 2015), is the interventions that are specifically aimed at developing teacher capacity to activate and maintain student engagement.

5.3 Non-Significant Predictors in the Regression Model

It is worth mentioning that the fact that some of the CMS subscales such as Teacher-Student Relationships, Behaviour Management and Assessment and Feedback failed to become significant when included as independent predictors in the multiple regression model does not mean that these dimensions are insignificant. The individual subscales had high bivariate correlations with achievement (r values between .502 and .584), and reflected true relationships. Their insignificance in the multivariate specification is an expression of a common predictive variance - multicollinearity - with Rules and Procedures, Instructional Management, and Student Engagement. Classroom management as a concept is itself a complex system (Emmer, 2001) and the nature of the conceptual interdependence of the dimensions makes it inherently complicated to ascertain causal standings in correlational research.

5.4 Physical Environment as a Structural Constraint

The lowest mean score was registered within the Physical Environment subscale ($M = 3.21$), which determined the acute lack of resources in the state of government schools in Northern Sindh, in the form of overcrowding, poor ventilation, and lack of instructional material, and deteriorated infrastructure (SEMIS, 2022). Although this subscale significantly correlated with achievement ($r = .506$, $p < .001$), it was not an important independent predictor in the multivariate model and therefore its impact on achievement is probably mediated by other dimensions of management. Weinstein and Mignano (2007) observed that teachers with constrained resources may still exert considerable agency in manipulating available space and resources to maximise the learning process, and the positive items which attained significance in this subscale are presumably exactly behaviours of this kind.

5.5 Local Challenges: An Interpretive Insight

Local Challenges subscale (Part I) had the best mean score ($M = 3.86$) of all the other subscales - there was a general appreciation that structural barriers such as overcrowding, language barrier, and poor development of professional skills are a big hindrance to classroom management. This subscale was, however, the most weakly correlated with academic achievement ($r = .254$) and was not a significant predictor in the regression model. This trend makes sense theoretically: the perception of contextual challenges by teachers is not directly related to student achievement; to the contrary, challenges are mediating the effectiveness of management strategies, the relationship that is impossible to fully observe with cross-sectional correlation designs. This interpretation is further supported by the finding that only one of the six items of Local Challenges was significant at the item level.

5.6 Implications of the 71.4% Significance Rate

It is interesting to note that the percentage of the questionnaire items that showed statistically significant positive correlation with academic achievement is 71.4%. To begin with, it confirms that most of the classroom management behaviours that the instrument measured are empirically connected to student outcomes in this respect - supporting the utility of the questionnaire and the theoretical framework of the instrument in question. Second, the 28.6% of non-significant items do not occur randomly: they occur in the subscale of Local Challenges (five out of six non-significant items) and in subscales where items involved capture highly situational or mediated behaviours. This repetitive distribution makes the results interpretatively consistent and indicates that the instrument can distinguish between dimensions of management that have a direct effect on achievement and those that are context-dependent.

6. CONCLUSIONS AND RECOMMENDATIONS

6.1 Conclusions

The research was conducted with the objective of examining how classroom management approaches influence the school performance of learners in government schools in Northern

Sindh, Pakistan. On the interpretation of the data obtained on 320 in-service teachers, the results indicate a positive and strong correlation of classroom management strategies with the academic achievement of the students. Composite The overall classroom management strategies (CMS) composite had a strong correlation with academic achievement ($r = .684$, $p < .001$), and 71.4 percent of the items had significant associations at the item level. This means that proper classroom management practices are very essential in the improvement of learning outcomes among students in the study context.

Moreover, classroom management strategies that were explained by the eight dimensions were able to describe 47.9 percent of variation in academic performance of students ($R^2 = .479$; $F = 35723$, $p = .001$). The finding has affirmed the fact that classroom management is one of the most powerful classroom-level predictors of student performance in government schools in Northern Sindh. Out of the individual dimensions considered, Rules and Procedures ($\beta = .340$), Instructional Management ($\beta = .247$) and Student Engagement ($\beta = .233$) have come out as the most predictive of academic achievement, which leaves one with the feeling that structured classroom routines, organizing of instructions and active involvement of students are all key factors in the achievement of academic performance.

The descriptive analysis also identified some contextual issues which influenced classrooms. The lowest mean score ($M = 3.21$) was observed in the Physical Environment subscale, which is supported by the observation that structural and resource constraints of the government schools are nonetheless a major hindrance to the establishment of the best learning environment. Also, as per the results, there is a significant professional development gap with regards to teacher development where most of the teachers (63.7) indicated that they had never been formally trained on classroom management. Lastly, there was common agreement among teachers on issues faced in the classroom setting that include overcrowded classrooms, language barriers, as well as lack of opportunity to develop professionally. These factors however seem to affect academic performance indirectly as they tend to mediate the processes in the classroom instead of being the direct predictors of student performance.

6.2 Recommendations

Based on the study's conclusions, the following recommendations are offered:

For Teacher Training Institutions and Universities

Classroom management strategies should be taught in dedicated and evidence-based modules within pre-service and in-service teacher education programmes. In particular, the training must cover the procedures of rule-setting, the planning of instructions and the methods of engaging the students, which the current data discover as the most leverage management competencies. Allama Iqbal Open University, University of Sindh and Shah Abdul Latif University are especially able to incorporate such modules in their B.Ed. and M.Ed. programmes.

For District Education Offices and School Administrators

Regular classroom observation procedures should be institutionalised by district education officers that incorporate classroom management as an evaluative aspect and findings used to direct professional development resources in schools and teachers with most evident requirement. Principals in schools must be equipped with instructional leadership practices that will help model and assist them in school level classroom management.

For Educational Policymakers

The teacher performance appraisal structures used by Government of Sindh and Federal Ministry of Education should be revised to have explicit classroom management competencies. The evidence, that the physical environment quality is strongly related to the academic achievement, supports the investment in the reduction of the class sizes in government schools of Northern Sindh, which are currently average 45 students per classroom, to 35, which is the

national average. The issue of language barrier that has been recorded in this research should also be diversified through multilingual instructional support.

For Future Research

Future studies ought to pursue longitudinal research designs in order to determine the causal direction of the identified links between classroom management and achievement. Combination of mixed methods that entails observation of classes would enhance ecological validity of results other than self-report survey data. A study that would be of exceptional value would be an experimental or quasi-experimental study that would assess the effectiveness of designated classroom management training programmes on the behaviors of teachers and academic performance of students in Northern Sindh.

LIMITATIONS OF THE STUDY

There were a number of limitations represented in this research study which must be taken into account when looking at the findings. To begin with, cross-sectional design makes no causal inferences possible; the correlations noticed between classroom management and academic performance might be caused by reverse causation (high-achieving students make teachers implement more management) or by the simultaneous presence of unmeasured third variables. Second, all classroom management data were gathered through teacher self-report which is also prone to social desirability bias, i.e., the teachers would excessively report on effective management practices. Third, academic achievement was operationalised as a teacher-rated composite score and not objective examination data which can be biased in terms of assessment. Fourth, stratified random sampling provided geographic representativeness but was restricted to six districts of the Northern Sindh; results might not be applicable to the southern Sindh, other provinces and the private sector of schools. Fifth, the subscale reliabilities of some of the dimensions are relatively low (especially the Behaviour Management and Physical Environment), which implies that these constructs might need additional items or conceptualization in future tools development.

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APPENDICES

Appendix A: Research Questionnaire — Classroom Management Strategies and Academic Achievement Scale (CMSAAS)

PART A: DEMOGRAPHIC INFORMATION

Please tick (✓) the most appropriate option for each item.

1. Gender: ☐ Male ☐ Female ☐ Prefer not to say
2. Age Group: ☐ Below 25 ☐ 25–35 ☐ 36–45 ☐ 46–55 ☐ Above 55
3. Highest Qualification: ☐ Bachelor's ☐ Master's ☐ M.Phil. ☐ Ph.D. ☐ Other
4. Teaching Experience: ☐ < 5 yrs ☐ 5–10 yrs ☐ 11–20 yrs ☐ > 20 yrs
5. School Level: ☐ Primary ☐ Middle ☐ Secondary ☐ Higher Secondary
6. District: ☐ Sukkur ☐ Khairpur ☐ Ghotki ☐ Larkana ☐ Jacobabad ☐ Other
7. Formal Training in Classroom Management: ☐ Yes ☐ No

PART B: LIKERT SCALE ITEMS

Scale: 1 = Strongly Disagree 2 = Disagree 3 = Neutral 4 = Agree 5 = Strongly Agree

Section B: Classroom Rules, Procedures, and Routines

- B1. I establish clear classroom rules and share them with students at the start of the academic year.
 - B2. Students in my class are aware of the behavioral expectations and consequences.
 - B3. I consistently enforce classroom rules without favoritism.
 - B4. I use daily routines to minimize transition time.
 - B5. Having structured procedures allows my students to focus better on learning tasks.
 - B6. I revisit and revise classroom rules when student behavior deteriorates.
- ##### **Section C: Teacher–Student Relationships and Classroom Climate**
- C1. I maintain warm and supportive relationships with my students.
 - C2. Students feel comfortable asking questions and expressing opinions in my class.
 - C3. A positive classroom climate motivates students to participate actively.

- C4. I use students' names regularly to build personal connections.
- C5. Conflicts between students are addressed promptly and constructively.
- C6. I treat all students equitably regardless of academic performance or background.

Section D: Instructional Management and Lesson Delivery

- D1. I prepare structured lesson plans that align with curriculum objectives.
- D2. I use a variety of instructional strategies to maintain student engagement.
- D3. I differentiate instruction to meet diverse learning needs.
- D4. I use instructional time efficiently to minimize off-task behavior.
- D5. I regularly monitor student understanding and adjust teaching accordingly.
- D6. Clear lesson objectives shared at the start of class improve student focus.
- D7. I provide timely and constructive feedback on students' academic work.

Section E: Behavior Management and Discipline

- E1. I use positive reinforcement to encourage desired student behavior.
- E2. Misbehavior is addressed through logical and proportionate consequences.
- E3. I use preventive strategies rather than reactive punishment.
- E4. My consistent behavioral management reduces classroom disruptions.
- E5. I involve students in developing classroom norms.
- E6. Frequent disciplinary issues negatively affect students' academic achievement.

Section F: Physical Environment and Classroom Organisation

- F1. The physical arrangement of my classroom supports effective learning.
- F2. I arrange seating to facilitate both individual and group work.
- F3. Educational displays in my classroom enhance student learning.
- F4. Adequate classroom resources positively affect student performance.
- F5. Overcrowded classrooms make effective management challenging.
- F6. I regularly reorganise the physical space for different instructional activities.

Section G: Student Engagement and Motivation

- G1. My classroom management strategies increase student motivation.
- G2. I use cooperative learning strategies to promote student engagement.
- G3. Students in well-managed classrooms demonstrate higher academic achievement.
- G4. I encourage student autonomy and self-regulation in learning.
- G5. I connect lesson content to students' real-life experiences.
- G6. Higher student engagement directly correlates with improved examination results.

Section H: Assessment Practices and Academic Achievement

- H1. I use formative assessment regularly to gauge student understanding.
- H2. Timely feedback on assignments motivates students and improves performance.
- H3. I use assessment data to adapt my instructional approaches.
- H4. Students who receive regular feedback perform better in summative examinations.
- H5. I involve students in self-assessment and peer-assessment activities.
- H6. My overall classroom management practices positively influence student achievement.

Section I: Local Challenges in Northern Sindh

- I1. Large class sizes make effective classroom management very difficult.
- I2. Insufficient professional development limits my ability to implement modern strategies.
- I3. Socioeconomic disadvantages negatively affect classroom behavior and achievement.
- I4. Language barriers create challenges in classroom communication and management.
- I5. Lack of administrative support undermines classroom management efforts.
- I6. Community and parental involvement in students' education is inadequate in this region.

Appendix B: Ethical Approval and Consent Information

Ethical approval for this study was obtained from the Research Ethics Committee, University of Sindh, Jamshoro (Reference: REC/2024/0234, dated August 20, 2024). All participation was voluntary and anonymous. No personal identifying information was collected. Participants

were informed in writing of the study's purpose, their right to withdraw at any time without consequences, the confidentiality of their responses, and the anticipated use of findings for academic publication only. Written consent was obtained from all participants prior to questionnaire administration.

Appendix C: District-wise Participation Summary

District	Schools Approached	Teachers (f)	%
Sukkur	14	61	19.1
Khairpur	18	79	24.7
Ghotki	11	43	13.4
Larkana	14	58	18.1
Jacobabad	11	45	14.1
Other localities	9	34	10.6
Total	77	320	100.0

Note. Schools approached = total number of government schools included in the sampling frame.

Appendix D: Research Instruments and Data Availability Statement

The full questionnaire instrument (CMSAAS), raw data file, and SPSS syntax files used for this study are available from the corresponding author upon reasonable request, subject to data sharing protocols approved by the University of Sindh Research Ethics Committee. Interested researchers may contact the corresponding author at m.asif.queshi@edu.usindh.edu.pk. Data will be made available within 30 working days of a reasonable request.

Appendix E: Declaration of Competing Interests and Funding

The authors declare no competing interests. This research received no specific grant from any funding agency in the public, commercial, or not-for-profit sectors. The study was conducted as part of the principal investigator's doctoral research programme at the University of Sindh, Jamshoro.