The Influence of Classroom Management Styles on Student Learning Outcomes: A Lecturer-Based Study in Cambodian Higher Education

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ABSTRACT

This study explores the relationship between classroom management styles and student learning outcomes in Cambodian higher education, using the perspectives of university lecturers as the primary data source. In the context of Cambodia's post-pandemic shift toward hybrid and technology-integrated learning environments, effective classroom management has become a critical pedagogical concern. Drawing on a quantitative design, data were collected through structured questionnaires from 320 lecturers across selected public and private universities. The study employed exploratory factor analysis and simple linear regression to assess the constructs and test the proposed relationship. The results revealed that classroom management styles significantly influence student learning outcomes, accounting for 11.3% of the variance in student learning outcomes. The findings highlight that structured, responsive, and student-centered management practices are positively associated with enhanced student engagement, cognitive gains, and academic success. The study contributes to the limited empirical literature on pedagogical practices in Cambodia and offers practical implications for higher education reform, particularly in the areas of faculty training and digital classroom strategies. However, the research is not without limitations. The cross-sectional design precludes causal inference, and the use of self-reported data may not fully reflect actual classroom dynamics or student experiences. Additionally, the study's scope is limited to selected institutions, reducing the generalizability of findings. Future research should incorporate longitudinal and mixed methods designs, include student perspectives, and examine moderating factors such as digital competency and institutional support. These directions would deepen understanding of classroom management's role in shaping educational outcomes.

Keywords: Classroom Management Style, Student Learning Outcomes, Quantitative Research, Simple linear regression, University Lecturers

INTRODUCTION

Cambodia's higher education sector has undergone considerable transformation in recent years, driven in part by increased national investment in tertiary education and the global impact of the COVID-19 pandemic. These shifts have prompted institutions to expand their academic offerings, diversify instructional modalities, and embrace technology to maintain learning continuity. While these developments are important indicators of progress, student learning outcomes remains a central concern and cannot be addressed solely through expansion and access. One of the most influential determinants of student success lies in the quality and structure of the learning environment—particularly how classrooms are managed. Classroom management styles, encompassing how instructors organize, guide, and maintain student behavior and engagement, are a critical component of the broader learning environment. These styles influence classroom culture, student motivation, and the quality of interactions between educators and learners. Whether in traditional in-person settings or technology-enhanced hybrid formats, effective classroom management provides the necessary structure and support for students to focus on academic tasks, engage meaningfully with content, and build the competencies required for success. Conversely, classrooms characterized by disorganization, unclear expectations, or inconsistent discipline can

disrupt the learning process, diminish student motivation, and negatively impact outcomes. According to research suggest that incorporating motivational strategies and leadership awareness into teaching practices can significantly enhance student engagement and long-term success [1], [2]. In Cambodia, the shift toward blended learning, accelerated by the pandemic, has highlighted the importance of classroom management strategies that accommodate both synchronous and asynchronous learning. Lecturers must now balance the demands of in-class instruction with online engagement, using digital tools to communicate expectations, deliver content, and monitor student progress. This has brought attention to the need for adaptive classroom management styles that promote student autonomy while maintaining instructional coherence. The pandemic has not only shifted the modality of education delivery but has also reshaped the roles of both students and instructors, requiring greater flexibility, interaction, and clarity in instructional practices [3].

Despite these developments, a clear research gap exists in the Cambodian context. While global studies have examined classroom management and self-regulated learning separately, there is limited empirical evidence specifically analyzing how different classroom management styles impact student learning outcomes through the mediating role of self-regulation. This gap is particularly pronounced in developing nations like Cambodia, where blended and online learning models are still emerging, and pedagogical adaptations are ongoing. Existing research tends to focus more broadly on digital infrastructure or student access, overlooking the instructional strategies and internal learning processes that also shape outcomes. By examining how lecturers perceive and apply classroom management practices—and how these relate to student outcomes via self-regulation—this study seeks to address this significant gap in the literature. It brings attention to a critical yet underexplored intersection of teaching practice, student behavior, and educational outcomes in a developing higher education system. The findings are expected to contribute practical recommendations for educators and policymakers. Strengthening classroom management strategies and especially in hybrid learning environments. As Cambodia continues to modernize its higher education sector, an evidence-based understanding of classroom dynamics will be essential for shaping effective pedagogical practices and fostering a culture of academic excellence. This study aims to explore the relationship between classroom management styles and student learning outcomes in Cambodian higher education, using lecturers' perspectives as the primary source of data.

LITERATURE REVIEW

The physical and pedagogical arrangement of classrooms plays a pivotal role in shaping the academic performance and engagement of students in higher education. With Cambodia's higher education system undergoing significant transformation—accelerated by post-pandemic reforms—understanding how classroom environments contribute to learning outcomes has become more crucial than ever. While the country has seen rapid expansion in university infrastructure and student enrollment, questions remain about how internal classroom dynamics, particularly classroom management and arrangement, impact student success. A growing body of literature suggests that the classroom environment—encompassing spatial design, physical conditions, and technological infrastructure—directly affects student engagement and academic performance. Well-structured classrooms foster an atmosphere conducive to learning, reduce distractions, and support both collaborative and individual learning needs. For example, strategic classroom design can improve sightlines, reduce ambient noise, and increase comfort, all of which contribute to better focus and academic achievement. Furthermore, flexible seating options and zoning—such as dedicated areas for group work and individual tasks—support student autonomy and motivation. These configurations empower learners to choose environments that suit their preferences, enhancing engagement and participation.

The physical environment is often classified into three broad dimensions: ambient conditions (such as lighting and air quality), spatial design (including furniture arrangement and sightline visibility), and technological infrastructure. Each of these dimensions contributes uniquely to the academic and emotional well-being of students. For instance, classrooms equipped with interactive technologies and adaptable layouts tend to increase student participation and reduce disruptive behavior, fostering a more inclusive and effective learning environment. In the Cambodian context, where universities vary widely in resources and facilities, understanding which aspects of the physical environment have the greatest impact is key to making informed policy and instructional decisions. Despite its importance, empirical research on the impact of classroom arrangement and management styles in Cambodian higher education remains limited. Most studies in Southeast Asia focus on

general educational inputs such as curriculum and lecturer quality, often overlooking the role of classroom settings in shaping student behavior and outcomes. This study addresses this gap by focusing on the classroom management styles employed by lecturers in Cambodian universities and how these styles influence learning outcomes. Research from other contexts supports the significance of classroom environment and management on student success. [4] found that classroom environment, lecturer competency, and ICT resources significantly influence both student engagement and academic performance in higher education institutions. Their study in the United Arab Emirates demonstrated that well-equipped and well-managed classrooms promote better academic outcomes, highlighting the importance of investment in physical and instructional resources.

From a theoretical standpoint, the integration of motivational theories and leadership principles in education offers useful insights into classroom management. [2], [5] argue that classroom management extends beyond maintaining order to fostering intrinsic motivation and supporting students' long-term academic and career planning. Effective lecturers create environments that promote autonomy, competence, and connectedness—factors that drive student engagement and achievement. This perspective emphasizes the educator's role in designing classroom spaces and interactions that inspire and sustain learning. Classroom design similarly exerts a substantial influence on students' academic results. Research shows that well-organized classrooms that encourage active participation improve students' understanding and retention of course material. Spaces designed to facilitate group work and discussions contribute to better communication skills and critical thinking, both essential for academic success. Moreover, thoughtfully arranged classrooms minimize distractions and stress, creating a more focused learning atmosphere. For example, incorporating interactive elements and multimedia aids can significantly boost student participation and attention.

High-quality educational environments correlate with greater learning opportunities and positive student perceptions, which in turn enhance academic performance. Studies have demonstrated that classroom features such as temperature, acoustics, natural lighting, and air quality affect students' mood and concentration, directly influencing their ability to learn. Technological tools and ergonomic furniture further support diverse learning styles and needs. While classroom management often focuses on behavior management and instructional delivery, the physical environment forms a foundation for these processes. [6] emphasize the need for research that links classroom design with teaching quality and student engagement. Their findings suggest that flexible, open layouts combined with technology enhance perceptions of teaching quality and lead to improved academic performance. Ultimately, this study aims to provide a clearer understanding of how classroom management styles influence student academic outcomes in Cambodian higher education.

RESEARCH METHODOLOGY

Resarch Design

A research design provides a systematic framework that aligns the study's objectives, theoretical underpinnings, hypotheses, and methodological strategies. It functions as a guiding structure for data collection, measurement, analysis, and interpretation, ensuring coherence and scientific rigor throughout the research process. This structure enhances the study's validity, reliability, and ethical integrity, thereby strengthening its overall credibility [7].

Population and Sampling

In this study, a descriptive quantitative research design was employed, as it allows for objective measurement and statistical analysis of the relationships among variables. Consistent with [8], this approach was chosen over qualitative methods to ensure empirical precision. The target population comprised lecturers from selected public universities in Cambodia, chosen for their relevance to the research objectives. The sample size was determined in accordance with the guidelines of [9], ensuring representativeness for a population of approximately 2,000 respondents. A structured questionnaire was designed using previously validated items aligned with the study's main constructs. A pilot study was undertaken to evaluate the instrument's reliability, with Cronbach's alpha values ranging from 0.708 to 0.911, all exceeding the generally accepted minimum threshold of 0.70 [10]. After finalizing the instrument, printed questionnaires were distributed to lecturers in selected public and private universities. A total of 405 questionnaires were handed out, and 347 were successfully completed and returned,

yielding an initial response rate of 85.7%. After excluding 27 incomplete responses, 320 valid surveys remained, resulting in a final usable response rate of 79%.

Instrumentation

A structured survey instrument with three sections was developed to measure the study's key constructs. Items on classroom management style design were tailored to the technological context of the research setting. Student learning outcomes was measured using items reflecting skill performance, retention, interest, and cognitive ability. Participants responded on a five-point Likert scale ranging from 1 (strongly disagree) to 5 (strongly agree), enabling consistent quantification of perceptions across all sections.

Validity and Reliability

To evaluate the construct validity of the measurement scales, an Exploratory Factor Analysis (EFA) was conducted using Principal Component Analysis (PCA) with Varimax rotation. This procedure was applied to the Autocratic Leadership Style and Student Performance constructs. The suitability of the dataset for factor analysis was evaluated and validated using the Kaiser-Meyer-Olkin (KMO) measure alongside Bartlett's Test of Sphericity. In line with established criteria, only items with factor loadings of 0.50 or higher were retained for further analysis [11]. Moreover, internal consistency was assessed using Cronbach's alpha, with results indicating strong reliability for both constructs, as all alpha values exceeded the recommended threshold of 0.70 [10].

Data Analysis

Data analysis was performed using IBM SPSS Statistics version 26 to process and interpret the study data. The initial phase involved generating descriptive statistics—including frequencies, means, and standard deviations—to summarize demographic information and examine the distribution of responses across survey items. Composite scores were then calculated by averaging the validated items within each construct. To examine the hypothesized relationship between autocratic leadership style and student performance, a simple linear regression analysis was employed. The analysis used a 0.05 significance level to determine statistical relevance, and model adequacy was evaluated using R-squared values and standardized coefficients. This approach provided a rigorous means of testing the primary hypothesis while maintaining the reliability of the measurement framework.

ANALYSIS AND FINDINGS

Respondents' Profile

Which is considered acceptable for quantitative research, out of 320 respondents, 89.4% were male and 10.6% female. The dominant age group was 41–50 years (50.6%), followed by 51–60 years (25.3%) and 31–40 years (16.3%). Academically, 84.7% held an MSc., while 15.3% had a PhD. In terms of experience, most respondents had 11–15 years (51.9%), with others having 16–20 years (21.3%), and 6–10 years (14.7%) as shown in Table 1.

Table 1: The demographic characteristics of the respondents

Factors	Classification	Repetition	Proportion
Gender	Female	34	10.6
	Male	286	89.4
Age	Below 30yrs	18	5.6
	31-40yrs	52	16.3

	41-50yrs	162	50.6
	51-60yrs	81	25.3
	61yrs and above	7	2.2
Academic Qualification	MSc.	271	84.7
	PhD	49	15.3
Working Experience	Below 5yrs	28	8.8
	6 – 10yrs	47	14.7
	11 – 15yrs	166	51.9
	16 – 20yrs	68	21.3
	Above 20yrs	11	3.4
N		**320**	

Factor Analysis (EFA) for Classroom Management Style

Table 2: Component Matrix for Classroom Management Style (CMS)

Item Code	Component 1	Component 2
CMS1	0.234	0.904
CMS2	0.781	0.440
CMS3	0.945	0.246
CMS4	0.908	0.334
CMS5	0.565	0.493
CMS6	0.420	0.572
CMS7	0.207	0.920
CMS8	0.309	0.767
CMS9	0.395	0.670
CMS10	0.923	0.272
CMS11	0.505	0.593

Table 3: KMO and Bartlett's Test of Sphericity

Measurement	Value
Kaiser-Meyer-Olkin (KMO)	0.844

Bartlett's Test of Sphericity	4,263.148
Df	55
Significance (p-value)	0.000

Table 2, among the 11 items, factor loadings exceeded the recommended threshold of 0.50, with several items (e.g., CMS3 = 0.945, CMS4 = 0.908, CMS10 = 0.923 on Component 1; CMS1 = 0.904, CMS7 = 0.920 on Component 2) showing strong loadings, indicating clear item-factor alignment. The analysis revealed: Component 1 appears to represent Instructional Management, including items related to academic control, task clarity, and instructional monitoring. And component 2 likely reflects Behavioral Regulation, focusing on classroom discipline, student behavior management, and responsiveness.

An Exploratory Factor Analysis (EFA) utilizing Principal Component Analysis (PCA) with Varimax rotation was conducted to evaluate the construct validity of the Classroom Management Style (CMS) scale. The analysis identified a two-factor solution, supporting the multidimensional nature of classroom management behaviors among lecturers.

The Kaiser-Meyer-Olkin (KMO) value was 0.844, indicating meritorious sampling adequacy [12]. Additionally, Bartlett's Test of Sphericity was significant ($\chi^2 = 4{,}263.148$, df = 55, $p < .001$), confirming the appropriateness of the dataset for factor analysis [11] as shown Table 3.

These two dimensions are conceptually consistent with established classroom management models, which differentiate between the instructional and behavioral aspects of teaching.

The factor structure confirms that classroom management is not a unidimensional construct, but comprises at least two interrelated domains that jointly influence learning outcomes.

Exploratory Factor Analysis (EFA) for Student Learning Outcomes

Table 4: Component Matrix for Student Learning Outcomes (SLO)

Item Code	Component 1	Component 2
SLO1	0.889	-0.199
SLO2	0.742	0.485
SLO3	0.710	0.558
SLO4	0.731	0.554
SLO5	0.715	0.410
SLO6	0.742	0.545
SLO7	0.893	-0.237
SLO 8	0.907	-0.246
SLO 9	0.818	-0.176
SLO 10	0.906	-0.215
SLO 11	0.844	-0.152

SLO 12	0.911	-0.236
SLO 13	0.423	0.439
SLO 14	0.911	-0.235
SLO15	0.911	-0.258
SLO16	0.791	-0.140
SLO17	0.893	-0.214

Table 5: KMO and Bartlett's Test of Sphericity

Measurement	Value
Kaiser-Meyer-Olkin (KMO)	0.874
Bartlett's Test of Sphericity	9,532.230
Df	136
Significance (p-value)	0.000

Table 4, the factor loading matrix suggests the emergence of two latent components. Many of the items—especially SLO1, SLO7, SLO8, SLO10, SLO12, SLO14, SLO17 and SLO15—exhibited strong loadings above 0.80 on Component 1, suggesting a robust unidimensional cluster of outcomes likely reflecting Cognitive and Academic Gains. Component 2, in contrast, attracted lower and more dispersed loadings, with cross-loading behavior evident in items such as SLO2–SLO6 and SLO13, indicating a possible secondary domain, potentially related to Motivational or Behavioral Engagement. Items like SLO13 (loading = 0.423/0.439) demonstrated borderline factor retention and may warrant further refinement or revalidation in future studies to ensure theoretical clarity.

An Exploratory Factor Analysis (EFA) using Principal Component Analysis (PCA) with Varimax rotation was conducted to assess the construct validity of the Student Learning Outcomes (SLO) measurement scale. The Kaiser-Meyer-Olkin (KMO) measure of sampling adequacy was 0.874, indicating that the sample size was highly suitable for factor analysis [12]. Furthermore, Bartlett's Test of Sphericity was also significant (χ^2 = 9,532.230, df = 136, $p < 0.001$), indicating that the correlation matrix was sufficiently correlated and not an identity matrix. This result confirms the suitability of the data for factor extraction [11], as presented in Table 5.

Reliability Analysis (Cronbach's Alpha)

Table 6: Reliability Analysis Using Cronbach's Alpha

Construct	No. of Items	Cronbach's Alpha
Demographic	5	0.710
Classroom Management style	11	0.943
Student Learning Outcomes	17	0.967

The internal consistency of the measurement scales was assessed using Cronbach's alpha coefficients. The demographic section, consisting of 5 items, yielded an acceptable reliability coefficient of 0.710. The Classroom Management Style scale, comprising 11 items, demonstrated excellent reliability with a Cronbach's alpha of

0.943. Similarly, the Student Learning Outcomes scale, with 17 items, showed very high internal consistency, reflected in a Cronbach's alpha of 0.967. These results indicate that all constructs possess strong reliability, supporting the consistency and dependability of the measurement instruments used in this study [10].

Hypothesis Tested

Table 7: Simple Linear Regression

Variables	Unstandardized Coefficient (B)	Standard Error	t-value	Sig.
Constant	2.770	0.179	15.490	0.000
Classroom Management Style	0.330	0.052	6.362	0.000
R = 0.336				
R Square = 0.113				
Adjust R Square = 0.110				
F = 40.473				

A simple linear regression was conducted to examine the effect of classroom management style on student learning outcomes among lecturers in Cambodian higher education institutions. As shown in Table 7, the regression model was statistically significant, $F(1, 318) = 40.473$, $p < 0.001$, indicating that classroom management style explains a meaningful portion of the variance in student learning outcomes.

The coefficient of determination, $R^2 = 0.113$, suggests that approximately 11.3% of the variance in student learning outcomes can be attributed to classroom management style. The adjusted R^2 of 0.110 indicates model stability after adjusting for the number of predictors. The unstandardized regression coefficient ($B = 0.330$, $p < 0.001$) reveals a positive and statistically significant relationship between classroom management style and student learning outcomes. Furthermore, the Variance Inflation Factor (VIF = 1.000) indicates no multicollinearity concerns, confirming the robustness of the regression results.

The findings confirm that classroom management style has a significant impact on student learning outcomes in Cambodian higher education. This aligns with existing literature emphasizing the critical role of effective classroom management in fostering academic success [13]. The positive coefficient suggests that lecturers who implement structured and supportive management strategies tend to facilitate better student engagement and achievement.

CONCLUSION, LIMITATION OF STUDY, AND FUTURE RESEARCH

Conclusion

This study investigated the influence of classroom management styles on student learning outcomes within Cambodian higher education, focusing on lecturers' perspectives. The results demonstrated a significant positive relationship between effective classroom management styles and student learning outcomes. The findings suggest that lecturers who adopt structured, student-centered management strategies contribute meaningfully to students' cognitive, motivational, and academic development. These insights are particularly relevant in the context of Cambodia's evolving higher education landscape, where the integration of hybrid and digital learning formats demands adaptive pedagogical approaches.

Limitation of Study

Despite these contributions, the study has several limitations. First, the cross-sectional research design restricts the ability to infer causality between classroom management and learning outcomes. Second, reliance on lecturer self-reports may introduce bias and limit the representativeness of student experiences. Third, the sample was drawn from selected institutions, thereby constraining the generalizability of the findings to the wider national or regional context. Additionally, critical factors such as student socio-demographics, institutional resources, and technological infrastructure were not fully considered.

Future Research

Future research should adopt longitudinal or experimental designs to uncover causal relationships and observe changes over time. Employing mixed methods approaches—including student interviews or classroom observations—could offer richer insights into classroom dynamics. Furthermore, examining potential mediators and moderators such as self-regulation, digital literacy, and institutional support systems would provide a more nuanced understanding of the mechanisms through which classroom management impacts student performance. Comparative studies across Southeast Asia are also recommended to contextualize findings within broader regional educational trends.

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