


Academic Quality Culture: Influence on Student Learning Concentration through Learning Management System-Based Classroom Management

Mohamad Shepna Giantama^{1*}, Reza Ifnuari², Neti Karnati³, Desi Rahmawati⁴, Aldo Redho Syam⁵

^{1 3 4 5}Universitas Negeri Jakarta, Jakarta Timur, DKI Jakarta, Indonesia

²Universitas PGRI Palembang, Palembang, Sumatera Selatan, Indonesia

*Email corresponding author: mohamadshepna@gmail.com

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	<p>based classroom management, and learning concentration. The results indicate that academic quality culture has a direct effect on learning concentration and on LMS-based classroom management. LMS-based classroom management also has a positive effect on learning concentration and partially mediates the relationship between academic quality culture and learning concentration. The model explains 58.6% of the variance in learning concentration. These findings suggest that strengthening academic quality culture can enhance students' learning concentration both directly and indirectly through effective LMS-based classroom management. This study contributes an integrative framework linking institutional quality culture, technology-mediated pedagogical practices, and student learning outcomes in higher education.</p>
	<p>Keywords: <i>Academic Quality Culture; Learning Concentration; Learning Management System; Classroom Management; Higher Education.</i></p>

INTRODUCTION

The global pandemic-induced paradigm shift in the delivery of instruction and organization for learning in higher education (Bond et al., 2018; Marinoni et al., 2020; Sutapa et al., 2025). Learning Management Systems (LMS), including moodle, google classroom and institutional platforms, have moved from secondary tools to indispensable infrastructure utilized to enhance pedagogical interactions across disciplines between faculty and students (Selwyn, 2021; Turnbull et al., 2021). In this fast-moving milieu, one nagging and growing concern has emerged, the already scant attention to student learning is decreasing even more, there are reports of less attentional engagement (Deng & Benckendorff, 2021; Henderson et al., 2017), more fragmented cognitive focus and less sustained intellectual work during technology-mediated instruction (Kirkwood & Price, 2014; Selwyn, 2021). A similar trend was observed in data taken from higher education institutions in Indonesia; as per the preliminary survey of 60 students at Faculty of Teacher Training and Education, Universitas Pakuan Bogor, Indonesia it was found that there are more than 60% of students who expressed dissatisfaction with academic quality during their study via LMS, even more than 45% below do not meet concentrated attention during learning activities mediated by LMS. These figures point to a systemic challenge that's not limited to personal study habits but is embedded in the very structure of institutions whereby standards for quality are cultivated, formalized and transformed into opportunities for meaningful learning and growth (Henderson et al., 2017).

In addition to this gap of theoretical approach the literature around LMS-embedded classroom management has grown, but it has developed predominantly towards a technocentric path (Kindle, 2018; Tinto, 1997). Many researches have been conducted on the features derived from LMS (content organization, automated assessment, discussion forums and analytics dashboards) that impact on learning outcomes like course experience satisfaction metrics (Elliott & Shin, 2002), engagement metrics and academic performance (Al-Fraihat et al., 2020; Turnbull et al., 2021). However, very few has critically investigated the institutional premises that determine whether LMS applications are being used as genuinely pedagogically diagnostic tools or simply as repositories for content and transmission through lecture-mode (Deng & Benckendorff, 2021). This distinction is critical, when used in the context of a strong quality culture, the LMS will be aligned with intentional learning pathways including timely feedback mechanisms and clear assessment rubrics as well as structured

opportunities for meaningful student faculty contact or focused interaction if you prefer (Bendermacher et al., 2017). In contrast, using the same technology within a poorly developed quality culture could lead to disjointed, inconsistent and cognitively taxing learning environments that work against students' attention (Martin et al., 2020; Wong et al., 2019). Although theoretically plausible, no study has empirically explored whether LMS-based classroom management represents a mediating mechanism by which academic quality culture positively drives student learning concentration.

Thus, the present study addressed this integrative gap by demonstrating how the academic quality culture common to specific area in teacher education faculty in Indonesia affects students concentration of leaning through LMS-based classroom management mechanisms (Kindle, 2018). The educational context of this research is particularly interesting: teacher education programs have a dual quality demand that their graduates achieve personal academic adequacy and be trained the professional competencies to manage learning settings for future students (Casto, 2019). The quality culture experienced by pre-service teachers during their preparation has cascading downstream effects throughout the education system. Guided by self-determination theory (Broadbent & Poon, 2015; Deci & Ryan, 2000), which suggests that environments fostering needs for competence, autonomy, and relatedness will enhance intrinsic motivation and cognitive engagement (Eva et al., 2019). Adult content-Student engagement theory emphasises the impact of institutional quality on students' participation patterns through different channels; within that, this work presents three hypothesis: (H1) academic quality culture positively influences learners' concentration in learning tasks during engineering courses H2) the direct influence of academic quality culture on LMS-based classes management is positive and H3) LMS-driven classroom management mediates between academic quality culture and students learning concentration.

This study provides three major contributions to the educational technology and management literature. This contributes to the academic body of knowledge by introducing the construct of academic quality culture, as an institutional antecedent to cognitive learning objectives a wider-angle lens than traditional performance and satisfaction metrics. Second, it recasts LMS-enabled classroom management as a process variable mediating the effects of these forms on practice rather than simply a tool or platform providing technology to ameliorate pedagogic activity and reconceptualizes technology integration in general as being governed by shaped between institutional norms. Third, by applying contextual empirical data from Indonesian teacher education, which exists at the juncture of a digital transformation and quality assurance imperatives as evidenced in Permendikbudristek No. 39/2025, the study sheds light that could further inform policy and practice in developing higher education systems. The article is organized as follows: Section 2 provides the methodological and conceptual framework, these findings are reported in section 3, while a discussion that relates the results to wider literature is developed in section 4.

METHOD

Research Design

The present study designed quantitative research using cross-section survey, which was used to tests causal relationships between three constructs: academic quality culture as exogenous variable (X_1), LMS-based classroom management as mediating variable (X_2) and student learning concentration as endogenous variable (Y). The choice of survey approach was due to its ability to provide a systematic basis for obtaining perceptual data from a large pool of respondents and facilitating inferential statistical testing of structural relationships among

latent variables (PH & Chang, 2009). The data were analyzed by Structural Equation Modeling with Partial Least Squares (SEM-PLS) using SmartPLS 4.0, which is suitable for complex mediational models and is robust for data that was not found normally distributed such as the Likert-scale instruments typical in educational research (Hair et al., 2019).

Population and Sample

The population was the entire 17,301 active undergrads at the Faculty of Teacher Training and Education (FKIP), Universitas Pakuan Bogor, Indonesia which include six study programs: Indonesian Language Education, English Language Education, Mathematics Education, Biology Education, Primary School Teacher Education (PGSD) and Civic Education (PPKn). The sample size was computed using the Slovin formula with a margin of error of 5% which resulted in a minimum number of 391 respondents required. Proportionate stratified random sampling was used to ensure proportional representation across study programs and academic cohorts. The final sample included 391 respondents that met the criteria based on active enrollment status in the 2024/2025 academic year registered in one of FKIP's six study programs with at least one semester as university LMS platform users. Between November 2025 and January 2026, data for the study were collected using online questionnaires via the institutional LMS, with direct administration during already scheduled classes when necessary to enhance response rates.

Instruments

Three self-report measures were created by utilizing relevant theories and subsequently validated through a systematic process. Student perceptions were measured along three dimensions extracted from Harvey & Green (1993) conceptualization of quality, and Cardoso et al. (2016) model of quality culture in the academic quality culture scale (30 items); cognitive quality (knowledge mastery and critical thinking norms), affective quality (motivation climate and academic values), cognitive quality (knowledge mastery, critical thinking norms). The LMS-based classroom management Scale (28 items) adapted five dimensions from the SERVQUAL framework (Gregory, 2019) for digital learning environments: tangible digital infrastructure, reliability of LMS-delivered content, responsiveness of faculty in digital interactions, assurance of assessment integrity, and empathic accommodation of diverse learning needs. The learning concentration scale (30 items) captured three dimensions aligned with cognitive attention theory.

A five-point Likert scale was used for all instruments. To verify content validity, several professors of educational management and educational technology evaluated the items, resulting in CVI scores greater than 0.80 for all items. For construct validity, the instrument was piloted on 30 FKIP students not included in the main sample using Pearson product moment correlation with a significance level of $p < 0.05$. Cronbach's Alpha coefficients were calculated using SPSS Version 27 to assess reliability with values of 0.91 (academic quality culture), 0.89 (LMS-based classroom management) and 0.93 (learning concentration), which exceed the recommended cut-off of 0.70 for social science research (Hair et al., 2019).

Data Analysis

Data analysis took place through three stages in sequential order. Descriptive statistical analysis was first conducted to describe the distribution of all variables (means, standard deviations, frequency distributions and assessment of normality). Second, we assessed the measurement model through Confirmatory Factor Analysis (CFA) to explore the convergent

validity (Average Variance Extracted ≥ 0.50 ; factor loadings ≥ 0.70), discriminant validity (Fornell-Larcker criterion; Heterotrait-Monotrait ratio < 1.96 for $p < 0$). Mediation was assessed according to the method proposed by Cavique & Ramos (2024) and Feldman & Newcomb (2020), which focused on the indirect effects and whether it was significant based on bias-corrected confidence interval. Model fit was evaluated using the Standardized Root Mean Square Residual (SRMR < 0.08) as suggested in PLS-SEM contexts (Henseler et al., 2016).

RESULT

Respondent Demographics and Descriptive Statistics

The sample included 391 respondents (67.3% female and 32.7% male), which is proportionally comparable to the demographic configuration typically observed between students of Indonesian teacher education faculties; the distribution, across study programs, corresponded to the number of students enrolled: PGSD (28.9%), Indonesian Language Education (18.2%), English Language Education (16.6%), Biology Education (14.1%), Mathematics Education (12.3%) and Civic education (9.9%). Regarding semester standing, 42.5% were in the third or fourth semester (35.3%) while the rest in the fifth or sixth semester (22.2%) to ensure adequate exposure toward institutional quality culture and LMS-based learning experiences.

Descriptive analysis revealed a score of 3.42 (SD = 0.78) for academic quality culture on a five-point scale indicating moderate-to-positive perceptions of institutional standards of quality. Classroom management on LMS was still at just above threshold level at $M = 3.28$ (SD = 0.84), while the dimension of responsiveness was the lowest scoring of all dimensions at $M = 3.04$, SD = 0.91 which suggests that timely faculty feedback in this digital environment is also an area of further improvement well below the threshold criterion level. In their learning modality, the learning concentration had a mean of 3.19 (SD = 0.82) the lowest of which is sustained attention ($M = 2.98$, SD = 0.89), consistent with the above-mentioned observation where students have difficulty in sustaining long attention span while an LMS-mediated instruction is taking place.

Measurement Model Evaluation

All three constructs demonstrated satisfactory psychometric properties for their respective measurement models. According to AVE criteria, convergent validity was established as the values were greater than 0.50; namely, academic quality culture = 0.57, LMS-based classroom management = 0.54 and learning concentration = 0.61. Values for outer loadings of individual indicators varied between 0.71-0.89, indicating adequate item-level contribution to corresponding constructs. The composite reliability values for the three constructs were all above the threshold of 0.70 (0.93, 0.91 and 0.94) indicating that each test demonstrated good internal consistency. Discriminant validity also was established using the Fornell-Larcker criterion, whereby the square root of AVEs for each construct exceeded correlations with other constructs and Heterotrait-Monotrait (HTMT) ratios remained uniformly below the 0.85 criterion (from 0.62 to 0.79). Overall, these results verify that the measurement instruments reliably and distinctly capture the hypothesized theoretical constructs.

Structural Model and Hypothesis Testing

Table 1. Structural Model Path Coefficients and Hypothesis Testing Results

Structural Path	β	t-value	p-value	f^2	Decision
AQC \rightarrow LC (H1)	0.340	5.827	< 0.01	0.142	Supported
AQC \rightarrow LMS-CM (H2)	0.520	9.413	< 0.01	0.371	Supported
LMS-CM \rightarrow LC (H3a)	0.410	7.162	< 0.01	0.207	Supported

Based on 3 direct hypothesized paths, as shown in Table 1, all were statistically significant at $p < 0.01$ level. Hypothesis 1 was supported i.e., Academic quality culture has a significant and positive direct effect on learning concentration ($\beta = 0.340$, $t = 5.827$), with a medium effect size ($f^2 = 0.142$). The second hypothesis was supported with the highest path coefficient in the model: academic quality culture has a positive and significant effect on LMS-based classroom management ($\beta = 0.520$, $t = 9.413$), which represents a large effect size ($f^2 = 0.371$) that explains 27 % of variance in LMS-based classroom management quality. Hypothesis 3a was supported, (LMS-based classroom management \rightarrow learning concentration ($\beta = 0.410$, $t = 7.162$), medium \leftrightarrow large effect size $f^2 = 0.207$).

Mediation Analysis

Table 2. Mediation Analysis: Indirect Effect of Academic Quality Culture on Learning Concentration through LMS-Based Classroom Management

Effect Type	Coefficient	t-value	p-value	95% CI	Conclusion
Direct Effect	0.340	5.827	< 0.01	[0.226, 0.454]	—
Indirect Effect	0.213	5.194	< 0.01	[0.139, 0.294]	—
Total Effect	0.553	10.286	< 0.01	[0.448, 0.658]	Partial Mediation

Mediation analysis results are shown in Table 2. Academic quality culture influenced learning concentration indirectly via LMS-based classroom management ($\beta_{\text{indirect}} = 0.213$, $t = 5.194$, $p < 0.01$), with a bias-corrected bootstrap confidence interval of [0.139–0.294] (95% CI) that does not contain zero. The results thus show partial mediation given that both the direct effect ($\beta = 0.340$, $p < 0.01$) and indirect effect ($\beta = 0.213$, $p < 0.01$) were significant and acted in the same direction (Cavique & Ramos, 2024). The overall effect of academic quality culture on learning concentration was significant ($\beta_{\text{total}} = 0.553$, $p < 0.01$), where the indirect path via LMS-based classroom management contributing to around 38.5% of the total effect. The structural model showed acceptable fit ($\text{SRMR} = 0.062 < 0.08$) and satisfactory predictive relevance ($Q^2 = 0.341$ for learning concentration, $Q^2 = 0.138$ for LMS-based classroom management with a zero-benchmark defined as a line between our value of Q^2 and predictive accuracy)

DISCUSSION

The Direct Influence of Academic Quality Culture on Learning Concentration

The direct positive effect of academic quality culture on student learning concentration ($\beta = 0.340$, $p < 0.01$) is an advance over the existing research literature that has established a connection between institutional quality and non-cognitive, behavioral, or engagement metrics, but the finding brings this relationship into substantive cognitive-attentional domain

(Wammes & Smilek, 2017). Previous studies have mainly related quality culture with macro indicators such as achievements of accreditation (Seyfried & Pohlenz, 2020), graduation throughput (Bendermacher et al., 2017), and satisfaction with the community (Cardoso et al., 2016), without capturing its impact on the micro-behavioral domain of individuals. The current study provides evidence that when students believe that their institutional environment reflects clear quality expectations, consistent academic standards, and a shared commitment to excellence by the institution as well as faculty, they develop internalized norms about concentrated intellectual effort during learning activities (Cavique & Ramos, 2024).

Such a conclusion is in close agreement with the Self-Determination Theory (Deci & Ryan, 2000; Kindle, 2018) proposal that organized environments that provide competence feedback and autonomy support and foster social connectedness create intrinsic motivation that maintains sustained cognitive engagement. These mechanisms can be theoretical (quality norms that direct students' attentional focus toward well-defined measures of competence; participatory quality processes that provide opportunities for academic autonomy, and shared commitment towards standards that bind together scholarly trajectory in some form of communally relatedness), and a culture of academic quality that is strong operationalizes these mechanisms. This suggests that while quality culture is an important barrier to concentration, it is only one of many significant predictors, explaining a medium effect size ($f^2 = 0.142$), in line with theories of attentional resources which posit that cognitive focus is multiply determined by a host of environmental, motivational, and individual difference variables (Picton et al., 2022; Wammes & Smilek, 2017).

Academic Quality Culture as a Driver of LMS-Based Classroom Management

Academically, one of the most critical and the strongest findings of this study is that academic quality culture contributes positively to LMS-based classroom management ($\beta=0.520$, $f^2=0.371$). As such, this finding fundamentally challenges the common technocentric epistemological presumption in the educational technology literature that LMS effectiveness is simply a question of platform engineering, UX design or digital literacy (Al-Fraihat et al., 2020; Turnbull et al., 2021). In contrast, the results indicate that quality of institutional culture has a direct positive impact on LMS platforms functioning as a management tool for pedagogy (Bond et al., 2018; Rasheed et al., 2020).

This finding is consistent with Bendermacher et al. (2017) theoretical perspective identifying two foundational processes of quality culture including structural-organizational mechanisms (such as formal policies, standards, and available monitoring systems), as well as individual-psychological mechanisms (shared values, attitudes toward quality improvement work, intrinsic commitment to excellence) (Sumarni et al., 2021). In terms of LMS-based classroom management, a robust quality culture is likely to be expressed by several identifiable pathways: faculty who have integrated those quality norms will exercise more care in knitting coherent LMS learning pathways; institutional quality standards will become the bases for systematic feedback protocols within digital platforms (Syam et al., 2025); and common expectations of quality will act as a motivator for developing engaging, nicely-structured forms of digital learning material rather than perfunctory content uploads. This large effect size highlights that quality culture is not only one among many equal predictors, but rather an institutional condition underpinning the overall nature of technology-mediated pedagogical practice with a significant impact.

This result is consistent with the organizational learning theory (Hsu & Lamb, 2020), that claims success in adopting new technological tools depends on how institutions organize their

collective mental models and vision. A prevalent LMS platform in a university with a weak quality culture may only result in the LMS lack of fulfilling its pedagogical potential because the status quo culture of the institution does not either require or reward thoughtful digital pedagogical design. On the other hand, these institutions that are accustomed to quality excellences, have a de-facto carry over of improvement orientation into digital learning management and transparency of LMS platform is actually context governed pedagogical spaces and not just a technological appendices.

The Mediating Role of LMS-Based Classroom Management

The primary original contribution of this study is the confirmation of partial mediation, which indicates that LMS-based classroom management channels 38.5% of the total effect from academic quality culture to learning concentration. This mediation pathway has, to our knowledge, not been previously documented in the educational technology or quality management literature, deploying a genuinely integrative finding that connects three typically separate fields of study: institutional studies of quality, educational technology effectiveness research, and cognitive science of attention.

The conclusion of partial (as opposed to full) mediation points to the idea that academic quality culture impacts student concentration via two interrelated pathways—a direct pathway working through students' internalized academic norms, motivational orientation and perceived institutional expectations accounting for 61.5% of the total effect—and an indirect pathway, working through the optimization of tech-mediated pedagogical practices, which accounted for 38.5%. This direct pathway is in line with the socialization perspective of quality culture, which views high-quality academic environments as shaping students' self-regulatory dispositions and attentional habits well beyond any specific pedagogical technologies (Casto, 2019; Martin et al., 2020; Wong et al., 2019). The mediated route reveals a lighter textured process: quality culture is not the only strategic force at play, material aspects of the digital learning environments presented to students amplify cognitive focus in their attention through clearly structured content presentations, systematic interaction patterns, and reduced cognitive overload in their retailing (Greenhow & Galvin, 2020; Mayer, 2002; Selwyn, 2021)

Following Kirkwood & Price (2014), technology enhanced learning framework that also sequentially distinguishes between technology as a replicating tool (just digitizing existing practices) and unequivocally as a transforming catalyst (dramatically enhancing pedagogical quality), we conceptualize this dual-pathway model. Implications of this mediation finding are that academic quality culture is the institutional condition which tips deployment away from simple replication to transformative: institutions with high quality culture are likely to deploy such LMS platforms to structure student cognitive engagement while those institutions with low quality culture risk deploying the same technology in ways that are fractalizing attention and focus on learning.

Implications for Educational Technology Theory and Practice

Better explanatory from yield with theoretic significance for educational technology the full model explains 58.6% variance of the concentration academic learning, too. On a theoretical level, the results suggest that current trends in educational technology research (acceptance, usability, digital literacy) at the student level and at the technology level be balanced in equal measure by serious engagement with quality culture at the institutional level as a necessary condition for productive integration of technology. This aligns with recent

appeals for ecologically minded educational technology research that situates technological practice, not in a vacuum, but in the institutional, cultural and policy settings (Henderson et al., 2017; Selwyn, 2021), where this practice is taking place.

In practical terms, these results provide useful advice for higher education leaders. *First*, deepening students' concentration during LMS-mediated learning requires working at both the institutional and technological levels, enhancing quality culture and optimizing designs for pedagogical deployment in each of those spaces in tandem with one another instead of treating them as separate projects to improvement. *Second*, link quality culture principles to LMS pedagogical skills through faculty development: arrive at practical understandings of how institutional quality expectations will make their way down to relevant behaviors in the digital classroom (structuring content release, monitoring for appropriate feedback timing, ensuring assessment aligns with learning objectives, implementing interactive engagement features). *Third*, for Indonesian higher education, the results validate that the customary "PPEPP", quality assurance cycle as stipulated in Permendikbudristek No. 39/2025 should necessarily incorporate digital learning environment governance explicitly and associative to reflect quality standards towards measurable indicators of LMS-based classroom management effectiveness (Ahmad et al., 2026).

This study introduces a unique contribution to the educational technology literature in terms of its integrated conceptual model that correlates institutional quality culture, one of the most investigated theoretical constructs in quality management and higher education policy scholarship with cognitive learning concentration, a construct typically analyzed in educational psychology, bringing them together through the mediating mechanism of LMS-based classroom management (Bond et al., 2018; Henderson et al., 2017; Umbase, 2023). To our knowledge, no previous studies have simultaneously modeled these three domains or tested the mediating pathway that links them. The discovery that almost four-tenths of quality culture's effect on concentration occurs through LMS-based management practices dramatically recontextualizes digital learning effectiveness as a governed phenomenon instead of one simply originating from technology, providing an enrichment for educational technology studies cosmology (Pham et al., 2019; Selwyn, 2021; Syam & Arifin, 2019). This is particularly significant for the Indonesian context; it constitutes the first empirical evidence of how national quality assurance frameworks link to micro-level cognitive outcomes through technology-mediated pedagogical processes.

Several limitations warrant acknowledgment. However, cross-sectional designs do not allow for causation and longitudinal or experimental designs are required to confirm the directionality of any observed associations. Although the case study design was needed to obtain a holistic understanding of the context and setting, it limits generalizability; replication across other institutions throughout the higher education landscape in Indonesia, conducting this study in a multi-institutional study, would yield greater external validity. The underlying processes for self-report learning concentration measures might differ from objective attentional performance; future research should combine behavioral and perceptual data. Finally, this study did not address particular LMS platforms that may have different pedagogical affordances, though it may be the case that comparative studies of LMS platforms may demonstrate additional technology-specific moderating effects. Even more in exploring the association between corporate culture quality in Indonesia, the quality-culture association needs to be revisited in qualitative setting.

CONCLUSION

Specifically, this research has shown that academic quality culture positively influences student learning focus directly (17.6%) and indirectly (38.5%) through LMS-based class management as a partial mediator transmitting above 38.5% of total effect also in Indonesian higher education. Results showed that the model explained a large 58.6 percent of learning concentration as student cognition, suggesting that an institutional focus on quality plus a technological mediation of pedagogical management created a strong combined effect on students' cognitive engagement with the learning task. The massaged single strongest pathway in the model, from quality culture to LMS-based management ($\beta = 0.520$), indicates that effective digital learning environments depend not on maximal technological sophistication but is primarily a matter of institutional quality norms about the pedagogy of how technology is used. The results reframe LMS-based classroom management practice as a mode of governed pedagogy embedded in institutional quality culture, making a paradigm-enriching contribution to science of educational technology. The present findings support readers in policy and practice domains to utilize integrated approaches to strengthening the quality culture of institution and optimally managing pedagogical management with regards to LMS as unified mechanisms to improve student learning centrality of higher education towards digitalization.

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