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Research Article

Reconfiguring Pedagogical Judgment: ITS-NU Lampung Lecturers' Engagement with LMS as Decision Support Systems

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Abstract: The implementation of Learning Management Systems (LMS) in higher education has increasingly transformed pedagogical and administrative practices, yet the interpretive engagement of lecturers within early-stage digital infrastructures remains underexplored. This study investigates how lecturers engage with a newly implemented institutional LMS and examines its emergent role as a pedagogically embedded decision-support system. Adopting a qualitative interpretive design, data were collected through structured questionnaires and semi-structured interviews with lecturers actively utilizing the platform. The findings reveal that engagement unfolds as a layered socio-technical process encompassing negotiated familiarization, selective feature appropriation, administrative consolidation, and reflective pedagogical recalibration. While core functionalities such as attendance tracking and grading are widely institutionalized, advanced analytics and interaction features are appropriated unevenly, reflecting differentiated perceptions of system affordances. Importantly, the LMS does not deterministically reshape instructional practice; rather, it augments pedagogical judgment by expanding the informational environment within which lecturers operate. System-generated data function as supplementary inputs that inform, but do not replace, professional expertise. The study contributes to information systems scholarship by demonstrating that digital transformation in higher education emerges through dynamic interaction between technological infrastructure, institutional governance, and lecturer agency. Effective LMS integration therefore depends not only on technical deployment but on the cultivation of interpretive trust and strategic alignment with pedagogical objectives.

Keywords: Learning Management System; Decision Support System; Socio Technical Systems; Pedagogical Judgment; Digital Transformation; Higher Education; Lecturer Engagement

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1. Introduction

The rapid acceleration of digital transformation in higher education has fundamentally reshaped the infrastructural landscape within which pedagogical activities are enacted [1], [2]. Learning Management Systems (LMS) have moved beyond their commencing role as additional high-tech tools and have increasingly become institutional backbones that structure communication [3], content distribution, assessment management [4], and academic documentation [5]. In many contemporary higher education institutions, the LMS is no longer perceived merely as a platform for uploading materials or recording attendance [5] rather, it operates as an integrated information system that mediates pedagogical processes and reorganizes the interactional dynamics between lecturers, students [6], and institutional governance structures [7].

Within this twentieth century broader aspect of transformation [8], the role of lecturers undergoes subtle yet significant reconfiguration. As professional actors embedded in both pedagogical and organizational systems, lecturers are required not only to master subject matter and instructional strategies but also to engage with digital infrastructures that influence how learning activities are designed, monitored, and evaluated [9], [10]. The adoption of an

LMS thus introduces a socio-technical environment in which pedagogical judgment is no longer formed solely through experiential intuition or disciplinary expertise, but is increasingly informed by data traces, system-generated analytics, and procedural standardization embedded within the platform [11].

Despite the widespread implementation of LMS platforms across higher education institutions, scholarly discussions often remain polarized between technological determinism and human-centered perspectives [12]. On one hand, technology-centered analyses tend to emphasize system efficiency, usability, and functional integration, frequently framing successful implementation as a matter of technical optimization [13]. On the other hand, pedagogically oriented studies foreground lecturer agency, instructional design creativity, and student engagement, sometimes underestimating the structural influence exerted by digital infrastructures [14], [15]. What remains underexplored is the intermediary space where lecturers actively negotiate, interpret, appropriate, and sometimes resist the decision-shaping affordances of LMS environments.

This gap becomes particularly relevant in institutions that have only recently adopted LMS infrastructures. In early-stage implementation contexts, system governance, institutional policy alignment, and user habituation [9], [10] are still evolving. Lecturers in such environments often navigate transitional phases characterized by experimentation, adaptation, and institutional learning. Their engagement with the LMS is not yet routinized; instead, it reflects ongoing processes of sense-making regarding how the system supports, constrains, or reshapes pedagogical practice [16]. The interpretive dimension of this engagement provides a rich empirical ground for understanding how information systems operate not merely as technical artifacts but as embedded organizational actors.

From an information systems perspective, an LMS can be conceptualized as a form of decision-support system within the pedagogical domain [9], [12], [15]. It structures the availability of information, standardizes reporting mechanisms, and enables monitoring features that inform instructional planning and assessment strategies [17]. Attendance logs, assignment submission records, grade analytics, and participation metrics collectively generate informational environments that may influence lecturers' instructional adjustments and evaluative decisions [15], [18]. However, the extent to which lecturers perceive, internalize, and strategically utilize these system-generated insights remains an empirical question rather than an assumed outcome of implementation.

The present study positions itself at the intersection of information systems analysis and higher education pedagogy by examining lecturers' engagement with an institutional LMS that has been implemented within the last two years. Rather than measuring system effectiveness in purely quantitative terms, this research seeks to understand how lecturers interpret the LMS as an infrastructural resource, how they integrate it into their pedagogical routines, and how it informs their professional judgment. By foregrounding lecturer perspectives, the study acknowledges that the operationalization of digital systems ultimately depends on human agency embedded within organizational contexts [19], [20]. Importantly, this investigation does not assume that system adoption automatically leads to pedagogical enhancement. Instead, it interrogates the processes through which lecturers familiarize themselves with the platform, negotiate its affordances, and selectively appropriate its features. In doing so, the study contributes to a more nuanced understanding of digital transformation in higher education, one that recognizes implementation as an ongoing socio-technical negotiation rather than a linear trajectory toward technological maturity.

The institutional context of this research is characterized by a relatively recent integration of LMS infrastructure into academic operations. Such a setting provides a valuable opportunity to observe early-stage adaptation processes before practices become fully institutionalized. In newly adopting institutions, lecturers often exhibit heterogeneous levels of digital fluency, diverse interpretive frameworks regarding system utility, and varying degrees of strategic alignment between pedagogical intention and system functionality. These variations illuminate the micro-level dynamics that shape the broader success or stagnation of digital transformation initiatives.

Furthermore, examining lecturer engagement through a qualitative lens allows for the exploration of subjective meaning-making processes that quantitative system usage metrics may obscure. Usage frequency alone does not reveal whether the system meaningfully informs pedagogical decision-making. A lecturer may upload materials consistently without relying on analytics for instructional refinement, while another may actively interpret participation data to redesign learning activities. Understanding these distinctions requires attention to narratives, perceptions, and reflective accounts.

The significance of this study extends beyond the immediate institutional setting. As higher education institutions increasingly invest in digital infrastructures to enhance governance, accountability, and instructional quality, there is a pressing need to understand how these systems interact with professional practice. If LMS platforms are to function as genuine decision-support systems rather than administrative repositories, lecturer engagement must be examined as a central variable in digital transformation strategies.

By analyzing lecturers' experiences within a recently implemented LMS environment, this research aims to contribute to ongoing discussions in information systems scholarship regarding user appropriation, socio-technical alignment, and organizational learning. It seeks to demonstrate that the effectiveness of information systems in educational contexts cannot be fully assessed without considering how professional actors interpret and embed these systems within their daily practices.

Accordingly, the study addresses the following overarching inquiry: how do lecturers engage with, interpret, and utilize a newly implemented LMS as a system that potentially supports pedagogical decision-making? Through qualitative exploration of lecturer perspectives, this research aspires to articulate the processes through which digital infrastructures intersect with professional judgment, thereby enriching both information systems discourse and pedagogical scholarship.

2. Preliminaries or Related Work or Literature Review

The implementation of Learning Management Systems in higher education has been widely examined from multiple disciplinary angles, including educational technology, instructional design, organizational change, and information systems governance [20]. However, the conceptual positioning of LMS platforms varies significantly across studies. In many early investigations, LMS adoption was framed primarily as a matter of technological diffusion and user acceptance, drawing heavily on models such as the Technology Acceptance Model (TAM) [21] and Unified Theory of Acceptance and Use of Technology (UTAUT) [22], [23]. These frameworks emphasized perceived usefulness, perceived ease of use, and behavioral intention as primary determinants of adoption [23]. While such models offer valuable explanatory insights, they often reduce engagement to attitudinal predictors and overlook the deeper interpretive processes through which users embed systems into professional practice.

More recent scholarship within information systems research has shifted toward socio-technical perspectives that conceptualize digital infrastructures as embedded within organizational routines. Socio-technical systems theory argues that technological artifacts cannot be meaningfully separated from the social contexts in which they operate [24]. Systems do not simply deliver functionality; they shape and are shaped by institutional norms, professional identities, and organizational governance structures [25]. Within this framework, an LMS is not merely a digital repository but an infrastructural actor that influences workflow standardization, reporting practices, and accountability mechanisms.

In higher education contexts, LMS platforms frequently serve dual roles. On the pedagogical level, they facilitate content dissemination, communication, assessment, and feedback [26]. On the organizational level, they support documentation, monitoring, compliance, and performance evaluation [3], [23]. This dual positioning creates an intersection between instructional autonomy and institutional governance. Lecturers, therefore, navigate a complex terrain where pedagogical intention meets system-imposed procedural structures.

The notion of digital infrastructure is particularly relevant to understanding LMS environments. Digital infrastructures are characterized by their embeddedness, transparency in use, and relational interdependence with other institutional systems [27]. As infrastructures mature, they tend to recede into the background of everyday practice, becoming taken-for-granted components of organizational life. However, during early stages of implementation, infrastructures are highly visible and often contested. Users negotiate their functionalities, interpret their affordances, and experiment with integration strategies. This transitional phase provides critical insight into how systems are appropriated and stabilized within professional routines. Within information systems scholarship, the concept of affordance has gained prominence in explaining user–technology interaction [24]. Affordances refer to the perceived possibilities for action that a technological artifact provides to a user. Importantly, affordances are neither purely objective features nor purely subjective perceptions; they emerge through the relational interplay between system capabilities and user goals [24], [25]. In the context of LMS platforms, affordances may include real-time attendance tracking,

automated grading calculations, analytics dashboards, discussion forums, and structured submission workflows [6]. Yet, the realization of these affordances depends on whether lecturers perceive them as meaningful and align them with pedagogical objectives.

Another important body of literature concerns decision-support systems (DSS). Traditionally associated with business intelligence and organizational analytics, DSS frameworks emphasize the role of information systems in enhancing managerial decision quality by providing timely, structured, and relevant data [28], [29]. Although educational settings differ from corporate environments, parallels can be drawn when LMS platforms generate data that inform instructional planning, student evaluation, and course adjustment strategies. For example, participation analytics may signal disengagement patterns, prompting lecturers to modify instructional approaches [30]. Submission timestamps may inform evaluation of student time management. Grade distributions may trigger reflective reconsideration of assessment design. In such instances, the LMS functions not merely as an operational tool but as a cognitive extension that informs professional judgment [30], [31]. However, literature on educational decision-support systems also highlights critical tensions. Data-driven decision-making can enhance transparency and consistency, yet it may also introduce risks of over-reliance on quantifiable metrics at the expense of qualitative insight [32], [33]. Lecturers may experience ambivalence toward analytics dashboards if they perceive them as surveillance instruments rather than pedagogical aids [28]. Therefore, understanding lecturers' engagement requires attention to their interpretive framing of system-generated information.

Organizational learning theory further enriches this discussion. The introduction of new digital systems often initiates processes of single-loop and double-loop learning within institutions. Single-loop learning occurs when users adjust actions to improve performance within existing frameworks, such as learning to upload materials more efficiently [21], [34]. Double-loop learning involves deeper reflection on underlying assumptions, potentially transforming pedagogical philosophies in response to digital affordances. Investigating whether LMS implementation triggers merely procedural adaptation or more profound pedagogical reconfiguration is a question of both theoretical and practical significance. Studies examining early-stage digital transformation in higher education suggest that adoption trajectories are rarely linear [35]. Institutions frequently encounter uneven engagement levels across departments, generational divides in digital fluency, and varying degrees of administrative enforcement. These asymmetries produce heterogeneous usage patterns that cannot be fully explained by individual attitudes alone. Structural support mechanisms, training provision, leadership commitment, and policy clarity all influence how digital infrastructures are internalized.

Within the Indonesian higher education landscape, LMS adoption has accelerated in recent years, particularly following broader national digitization initiatives and pandemic-driven remote learning demands. Nevertheless, empirical investigations often emphasize student satisfaction or system usability rather than lecturer-centered interpretive engagement. Given that lecturers serve as primary mediators between institutional systems and student learning experiences, their perspectives warrant deeper qualitative exploration. Furthermore, information systems governance literature underscores the importance of alignment between technological infrastructure and organizational strategy [13], [19], [36]. Effective governance requires not only technical integration but also user participation, feedback mechanisms, and iterative refinement. When systems are implemented without adequate participatory engagement, misalignment may occur between system capabilities and professional needs. Therefore, examining lecturers' lived experiences can reveal areas of congruence and friction within institutional digital transformation efforts.

In summary, existing scholarship provides valuable foundations for understanding LMS adoption, yet several gaps remain. First, much research prioritizes acceptance metrics over interpretive depth. Second, the conceptualization of LMS platforms as decision-support systems in pedagogical contexts remains underdeveloped. Third, early-stage implementation environments, where practices are still fluid and meaning-making processes are active, offer underutilized opportunities for qualitative inquiry. This study responds to these gaps by positioning lecturers' engagement with a newly implemented LMS within a socio-technical and decision-support framework. By synthesizing insights from technology adoption theory, socio-technical systems theory, affordance theory, decision-support systems literature, and organizational learning perspectives, the research constructs a conceptual foundation for analyzing how digital infrastructures intersect with pedagogical judgment.

Rather than treating LMS usage as a binary variable of adoption versus non-adoption, this study conceptualizes engagement as a multidimensional process involving familiarization, appropriation, strategic utilization, and reflective evaluation. Such a perspective allows for a more nuanced understanding of digital transformation in higher education institutions undergoing infrastructural maturation.

3. Proposed Method

This study adopts a qualitative interpretive research design to explore how lecturers engage with a newly implemented Learning Management System (LMS) within their institutional context. The interpretive paradigm is particularly appropriate for this inquiry because the research does not seek to measure system performance in purely quantitative terms, but rather to understand how lecturers construct meaning around the LMS and how such meaning influences pedagogical decision-making. From an interpretive standpoint, reality is viewed as socially constructed, and technological artifacts are understood as embedded within networks of human interpretation, institutional norms, and professional practice.

The research was conducted in a higher education institution that has implemented its LMS infrastructure for approximately two years. This temporal positioning is significant. At this stage, the system has moved beyond initial deployment but has not yet reached full institutional routinization. Practices are still evolving, user habits are still forming, and institutional policies related to system governance are continuing to mature. Such an environment provides a fertile context for examining processes of familiarization, negotiation, and appropriation [37]. The participants of this study consist exclusively of lecturers actively using the LMS within their teaching responsibilities. The decision to focus solely on lecturers is deliberate and theoretically grounded [38]. Lecturers function as central mediators between digital infrastructure and student learning processes. Their interpretations, decisions, and usage patterns directly shape how the LMS operates in practice. By centering lecturer perspectives, the study foregrounds professional agency within the socio-technical system.

Data were collected through two primary instruments. First, a structured online questionnaire distributed via Google Forms [39]was used to gather descriptive and perceptual data regarding lecturers' experiences with the LMS. The questionnaire included items addressing duration of LMS usage, frequency of feature utilization, perceived system benefits, encountered challenges, and reflections on how system-generated information influences instructional decisions. While the questionnaire included structured response options to enable pattern identification, it also provided open-ended spaces for elaborative responses [39]. These open-text responses were essential for capturing nuanced perspectives beyond fixed-choice metrics.

Second, semi-structured interviews were conducted with selected lecturers to deepen and contextualize findings from the questionnaire [40]. The interview protocol was designed to explore lecturers' processes of familiarization with the LMS, their strategies for integrating system features into pedagogical routines, their perceptions of analytics and data functionalities, and their reflections on how the system informs or reshapes their professional judgment. Semi-structured interviews were chosen because they allow flexibility for probing emerging themes while maintaining alignment with the research objectives [39], [41]. Data analysis followed an iterative thematic analysis approach. The analytical process unfolded in multiple stages. Initially, questionnaire responses were reviewed to identify recurrent patterns in system usage, perceived utility, and reported challenges. Descriptive trends were noted not as statistical claims, but as contextual indicators guiding deeper interpretive exploration. Subsequently, interview transcripts and open-ended responses were subjected to open coding. During this stage, segments of text were labeled according to emerging conceptual categories, such as system familiarization strategies, perceived affordances, decision-making adjustments, institutional constraints, and reflections on professional autonomy. Following open coding, axial coding was conducted to identify relationships among categories. For instance, references to analytics usage were examined in relation to themes of pedagogical modification or assessment recalibration [41]. Mentions of technical obstacles were analyzed alongside narratives of adaptation or workaround strategies. Through this relational coding process, broader thematic constructs began to emerge.

The final stage involved selective coding and theoretical integration. At this level, the analysis moved beyond description toward conceptual interpretation. Themes were examined through the lens of socio-technical systems theory, affordance theory, and decision-support

system frameworks. This theoretical triangulation ensured that findings were not merely anecdotal accounts, but analytically grounded contributions to information systems discourse [42]. To enhance trustworthiness, several strategies were employed. First, data triangulation was achieved through the combination of questionnaire and interview sources [43]. Second, iterative reading and re-coding were conducted to minimize premature thematic closure. Third, reflexive memoing was maintained throughout the analysis process to document interpretive decisions and emerging insights. These measures support credibility and analytical rigor. It is important to clarify that this study does not aim to generalize findings statistically to all higher education institutions [44], [45]. Instead, it seeks to generate analytically transferable insights regarding lecturer engagement with LMS infrastructures in early-stage implementation contexts. The value of the research lies in its capacity to illuminate mechanisms, tensions, and meaning-making processes that may resonate with similar institutional environments.

Ethically, participation was voluntary, and confidentiality was maintained [46]. Responses were anonymized, and identifiable information was removed from transcripts and questionnaire exports [47]. The focus of analysis centers on patterns of engagement rather than individual performance evaluation. By adopting an interpretive qualitative approach situated within a real institutional setting, this study positions itself to uncover how digital infrastructure is enacted in practice. Rather than treating the LMS as a static technological artifact, the method allows examination of the dynamic interplay between system features, lecturer agency, and organizational context. Through this methodological framework, the research aims to articulate how pedagogical judgment is potentially reconfigured within digitally mediated academic environments.

4. Results and Discussion

The analysis reveals that lecturers' engagement with the LMS cannot be reduced to simple metrics of usage frequency. Rather, engagement emerges as a multidimensional process encompassing stages of familiarization, selective appropriation, adaptive management, and reflective pedagogical recalibration. Across questionnaire responses and interview narratives, it becomes evident that the LMS functions simultaneously as a technical infrastructure, an administrative mechanism, and a cognitive reference point in instructional decision-making.

4.1 Negotiated Familiarization and Early Infrastructural Embedding

The findings demonstrate that lecturers' initial engagement with the LMS was characterized by negotiated familiarization rather than immediate seamless integration. Although the system had been implemented for approximately two years, narratives indicate that adaptation remains an ongoing process. Lecturers described early encounters with the platform as exploratory, often involving trial-and-error experimentation with fundamental features such as attendance logging, material uploads, grading modules, and assignment management tools.

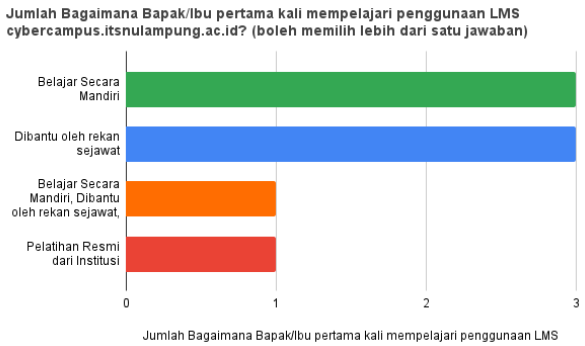

Figure 1. Lecturers' initial engagement with the LMS

This phase reflects what socio-technical systems theory conceptualizes as the visible stage of infrastructural embedding. Newly implemented digital systems remain cognitively foregrounded; users must deliberately attend to operational steps and interface logic. The LMS, therefore, had not yet become transparent-in-use. Instead, it required intentional engagement, cognitive adjustment, and procedural alignment. However, the data also reveal

agency within this adaptation process. Lecturers did not frame themselves as passive recipients of technological imposition. Rather, they described seeking peer assistance, independently exploring functionalities, and gradually internalizing operational workflows. Such behavior indicates that familiarization functions as an active negotiation between professional identity and technological structure. The LMS, in this context, becomes a site of professional recalibration rather than mere compliance.

4.2 Selective Feature Appropriation and Affordance Realization

A prominent pattern across questionnaire responses concerns selective utilization of LMS features. Core functionalities, particularly attendance tracking, material dissemination, and grading were consistently adopted. In contrast, more analytically intensive or interaction-driven features such as participation analytics dashboards and structured discussion forums were utilized more variably.

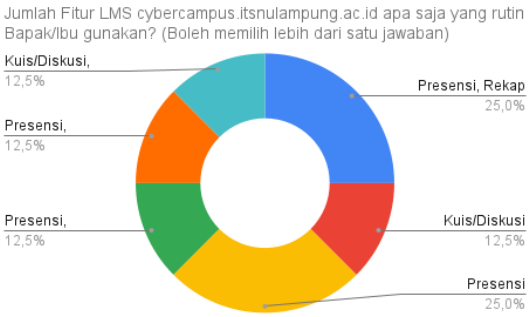

Figure 2. Lecturers' selective utilization of LMS features

This differentiation aligns closely with affordance theory. Technological systems present multiple possibilities for action; however, these affordances become operational only when users perceive them as meaningful in relation to their goals. Lecturers evaluated features not based on technical sophistication but on perceived pedagogical and administrative utility.

Administrative modules were frequently prioritized because they directly supported documentation, transparency, and compliance with institutional expectations. These features reduced manual workload and standardized reporting procedures. Conversely, features requiring sustained interaction were sometimes perceived as time-intensive, particularly when student responsiveness was inconsistent. Thus, lecturers exercised professional discretion in determining which affordances merited incorporation into routine practice.

This pattern suggests that LMS implementation does not automatically translate into comprehensive feature integration. Instead, appropriation is stratified, reflecting individualized assessments of efficiency, relevance, and pedagogical alignment. From an information systems governance perspective, such selective appropriation shapes the functional depth of the digital infrastructure within the institution.

4.3 The LMS as Administrative Infrastructure

For a significant proportion of lecturers, the LMS is primarily experienced as an administrative infrastructure. In this framing, the system serves to centralize documentation, record attendance, manage submissions, and standardize grading. The platform enhances transparency and ensures procedural consistency across courses.

This administrative orientation reflects the institutional dimension of digital infrastructure. The LMS consolidates academic records within a unified system, enabling monitoring and accountability. Lecturers acknowledged that such standardization simplifies coordination and reduces ambiguity in reporting. However, this administrative positioning also influences the interpretive framing of the system. When perceived primarily as a compliance tool, the LMS may be utilized in a functional rather than strategic manner. Engagement becomes task-oriented rather than analytically reflective. This distinction is critical because it determines whether the system operates merely as an operational repository or evolves into a decision-support mechanism.

4.4 Emergent Decision-Support Utilization

Beyond administrative usage, the findings reveal emerging instances of decision-support utilization. Several lecturers reported examining submission timestamps to detect patterns of

delay, reviewing grade distributions to reassess assessment design, and analyzing participation records to identify disengaged students. In these cases, system-generated data influenced instructional adjustments.

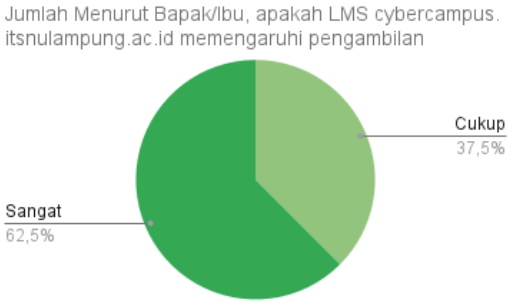

Figure 3. Lecturers' decision-support utilization

This shift represents movement from operational to strategic engagement. Within decision-support system frameworks, the value of information systems lies in their capacity to enhance decision quality through structured data provision. The LMS generates digital traces that provide insight into student behavior, performance consistency, and participation dynamics. However, the integration of these data into pedagogical judgment is not automatic. It requires interpretive trust in system accuracy and relevance. Lecturers who embraced analytics features tended to view data as complementary to experiential knowledge. Rather than replacing professional intuition, system information augmented reflective practice. The LMS thus functions as a cognitive extension. It expands the informational environment within which pedagogical decisions are made. Importantly, this augmentation remains mediated by lecturer agency. Data do not dictate action, instead, they inform deliberation.

4.5 Reconfiguration of Pedagogical Judgment

The most analytically significant finding concerns the subtle reconfiguration of pedagogical judgment. Lecturers consistently emphasized that ultimate instructional decisions remain grounded in disciplinary expertise and experiential insight. Yet many acknowledged that access to structured digital data provides additional evidentiary layers influencing course adjustments. Identification of participation decline prompted reconsideration of engagement strategies. Patterns of grade concentration stimulated reflection on assessment difficulty. Attendance irregularities triggered early intervention communication. These examples demonstrate that the LMS contributes informational inputs that were previously less systematically available. This reconfiguration does not imply technological determinism. Rather, it reflects augmentation of professional reasoning through digital mediation. Pedagogical judgment becomes data-informed without becoming data-determined. The LMS operates as an infrastructural condition that shapes the informational contours of decision-making while preserving lecturer interpretive authority.

Collectively, these findings illustrate that the LMS within this institutional context functions as an evolving socio-technical infrastructure situated between administrative governance and pedagogical agency. Its capacity to operate as a decision-support system depends less on technical sophistication than on lecturer interpretive engagement. Digital transformation, therefore, emerges not as a linear technological upgrade but as a negotiated redefinition of professional practice.

5. Conclusions

This study set out to examine how lecturers engage with a newly implemented Learning Management System (LMS) within their institutional context, with particular attention to its potential role as a decision-support system influencing pedagogical judgment. Rather than approaching LMS adoption as a binary measure of use or non-use, the research conceptualized engagement as a layered socio-technical process encompassing familiarization, selective appropriation, administrative consolidation, and reflective integration. The findings demonstrate that lecturer engagement with the LMS unfolds as negotiated adaptation rather than passive compliance. Early interaction with the system was characterized by exploration and gradual internalization of workflows, indicating that infrastructural embedding remains

an active process even after two years of implementation. The LMS has not yet fully receded into invisibility; instead, it continues to be consciously navigated and interpreted by its users.

Selective feature appropriation emerged as a defining characteristic of engagement. While administrative modules such as attendance tracking and grading were widely institutionalized, more analytically intensive features were adopted unevenly. This pattern confirms that technological affordances do not automatically translate into functional integration. Instead, lecturers exercise professional judgment in determining which features align with their pedagogical objectives and workload realities. The depth of system integration is therefore shaped not solely by technical capability but by interpretive alignment between infrastructure and professional practice. The study further reveals a critical distinction between administrative utilization and decision-support utilization. For many lecturers, the LMS functions effectively as an administrative infrastructure that standardizes documentation and enhances transparency. However, a subset of participants demonstrated movement toward reflective engagement, using system-generated data to inform instructional adjustments. In such instances, the LMS contributes to pedagogical recalibration by expanding the informational environment within which decisions are made.

Importantly, this reconfiguration of pedagogical judgment does not represent technological determinism. Lecturers consistently positioned professional expertise and experiential insight as primary anchors of decision-making. System-generated data were integrated as supplementary evidence rather than prescriptive directives. The LMS thus operates as a cognitive augmentation tool, reshaping informational conditions without displacing professional agency. Theoretically, this research contributes to information systems scholarship by situating LMS engagement within socio-technical systems theory, affordance theory, and decision-support system frameworks. It demonstrates that digital transformation in higher education cannot be fully understood through adoption metrics alone. Instead, transformation emerges through iterative negotiation between technological affordances, institutional governance structures, and professional interpretation. By foregrounding lecturer perspectives, the study enriches understanding of how information systems become embedded within pedagogical environments during early-stage infrastructural maturation. From a practical standpoint, the findings suggest that institutional leaders seeking to maximize LMS effectiveness should move beyond technical deployment and compliance monitoring. Strategic emphasis should be placed on cultivating interpretive trust in system-generated data, facilitating peer knowledge exchange, and aligning system functionalities with pedagogical objectives. Without such alignment, the LMS risks remaining confined to administrative utility rather than evolving into a comprehensive decision-support infrastructure.

The study is not without limitations. As a qualitative investigation situated within a single institutional context, findings are analytically transferable rather than statistically generalizable. Engagement patterns may differ in institutions with longer implementation histories or alternative governance structures. Additionally, while the study captures lecturer perspectives, future research may benefit from integrating student experiences and administrative viewpoints to construct a more holistic socio-technical analysis. Future inquiries could explore longitudinal developments in LMS engagement, examining whether decision-support utilization intensifies as infrastructural familiarity increases. Comparative cross-institutional studies may also illuminate how governance models and training ecosystems influence the depth of pedagogical integration. Furthermore, quantitative exploration of correlations between analytics usage and instructional outcomes could complement the interpretive insights generated here.

In conclusion, the LMS within this institutional context functions as an evolving socio-technical infrastructure whose transformative potential lies not in its technical features alone but in the interpretive engagement of lecturers. Digital transformation in higher education is neither purely technological nor purely pedagogical; it is relational. The reconfiguration of pedagogical judgment occurs through dynamic interaction between system affordances and professional agency. Understanding this interaction is essential for institutions seeking to move beyond digital adoption toward meaningful digital integration.

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