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Evaluating the Success of Academic Administrative Information Systems and the Informal Media Workaround Phenomenon in a Faculty of Medicine

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Abstract
Digital transformation in medical higher education demands a reliable academic information system. However, functional limitations in official systems often lead academia to adopt informal communication media such as WhatsApp as alternative administrative channels (workarounds). This study aims to evaluate the success of the Academic Information System (SIAKAD) and identify the dynamics of the workaround phenomenon in a Faculty of Medicine. Using a qualitative case study approach, the system was evaluated based on the DeLone & McLean Information System Success Model, incorporating system quality, information quality, and service quality dimensions. Data were gathered through in-depth interviews, observations, and document analysis. The findings indicate that while SIAKAD supports basic academic record-keeping, issues such as system instability, delayed data updates, and slow technical support response remain major obstacles. These limitations drive the workaround phenomenon, where users prefer WhatsApp due to its convenience and real-time response, despite risks regarding data security and record reliability. The study concludes that the success of an official information system depends not only on technical capabilities but also on its alignment with daily operational needs. Recommendations include integrating real-time communication features into the official platform and strengthening digital administration governance.

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1. INTRODUCTION

Administrative digitalization has become a fundamental pillar in enhancing operational efficiency and transparency within higher education institutions [1]. The implementation of the Academic Information System (Sistem Informasi Akademik / SIAKAD) aims not only to integrate academic data but also to serve as an internal public service platform connecting students, faculty members, and administrative staff [2]. Amidst the rapid acceleration of modern technology, the effectiveness of official information systems serves as a primary benchmark for evaluating the quality of institutional governance (good university governance) [3]. Furthermore, the strategic alignment between institutional IT infrastructure and user operational habits is essential to sustain long-term digital adoption [4].

In medical education institutions, the demand for fast, precise, and continuously accessible administrative services is particularly critical. A demanding academic workload, dynamic clinical rotation schedules, and complex coordination workflows require an

information system that is not only stable but also flexible in facilitating daily operational communication. Delays or inaccuracies in conveying administrative information within a faculty of medicine have the potential to disrupt the learning process and academic services for the entire academic community.

In practice, however, a gap frequently emerges between the technical functionality provided by the official information system and the actual needs of users in the field [5]. Rigid official systems, slow technical support responses, and infrastructure stability issues often create bottlenecks in administrative service workflows [6]. This situation gives rise to the workaround phenomenon—a behavior in which users intentionally leverage informal communication channels, such as the instant messaging application WhatsApp, as a shortcut to expedite administrative tasks [7], [8]. Although informal media offer convenience and real-time responsiveness, reliance on these unofficial channels introduces serious risks, including data fragmentation, a lack of official audit trails, and vulnerabilities in academic information security [9], [10]. Uncontrolled reliance on shadow IT practices can also undermine institutional compliance and centralized information governance [11].

Numerous previous studies have evaluated the success of academic information systems based on the DeLone & McLean framework [12], [13]; however, the majority of these studies focus solely on formal technical dimensions without capturing the accompanying adoption of informal channels. The spontaneous integration between official systems and informal media workarounds in medical education remains sparsely explored in a comprehensive manner [14]. Therefore, the novelty of this study lies in its holistic approach, which not only measures the success of the official system but also critically examines the dynamics of workaround behavior as an impact of system limitations.

Based on these issues, this study aims to evaluate the success level of the Academic Information System (SIAKAD) based on the DeLone & McLean model dimensions (system quality, information quality, and service quality), while simultaneously identifying the triggering factors and implications of the informal media-based workaround phenomenon in a Faculty of Medicine. The findings of this study are expected to provide a theoretical contribution to technology adoption in the education sector, as well as serve as a basis for practical recommendations for administrators in harmonizing reliable and secure digital administration governance.

2. RESEARCH METHODS

This study employs a qualitative approach with a case study design to evaluate the implementation of the Academic Information System (Sistem Informasi Akademik / SIAKAD) and explore the informal media workaround phenomenon in a Faculty of Medicine. A qualitative approach was selected as it provides an in-depth, contextual, and holistic understanding of users' perceptions, interactions, and adaptive behaviors toward digital administrative technology [15].

The conceptual framework of this study adopts the DeLone & McLean Information System Success Model [13], adapted to a qualitative context. The evaluation focuses on six main dimensions, namely:

1. System Quality: evaluating the ease of use, reliability, access speed, and technical dependability of SIAKAD.
2. Information Quality: assessing the accuracy, relevance, completeness, and timeliness of the academic data presented.
3. Service Quality: analyzing the availability, responsiveness, and reliability of the IT management's technical support.
4. Use: identifying the intensity and utilization patterns of the official system and informal media channels.

5. User Satisfaction: evaluating the satisfaction level of the academic community regarding the administrative service workflow.
6. Net Benefits: assessing the extent to which administrative effectiveness and efficiency are achieved for both individuals and the organization.

Research informants were determined using a purposive sampling technique to ensure that the obtained data are rich and representative. The research subjects consist of three main groups:

1. Administrative Managers/Faculty Leaders: providing data related to policies, regulations, and operational expectations of academic services.
2. IT Staff/Technical Team: providing an overview of the technical infrastructure, system maintenance, and operational constraints of SIAKAD.
3. Students & Lecturers: acting as end-users who directly experience the quality of system services and apply informal media workarounds in daily academic activities.

Data collection was conducted through three primary techniques:

1. In-depth Interview: utilizing a semi-structured interview guide to explore experiences, complaints, and reasons for adopting informal media.
2. Observation: conducting direct observation of the administrative service workflow, the technical complaint handling process, and communication interactions via informal media (WhatsApp).
3. Documentary Study: reviewing supporting documents such as system user manuals, academic data recapitulations, and service evaluation records.

Data analysis refers to the interactive model by Miles, Huberman, and Saldaña [15], which includes three main stages: data reduction, data display, and conclusion drawing/verification through source and method triangulation [15], [16].

3. RESULTS AND DISCUSSION

A qualitative evaluation of the success of the Academic Information System (Sistem Informasi Akademik / SIAKAD) at the Faculty of Medicine was conducted across the dimensions of the DeLone & McLean framework, adapted to the dynamics of daily academic services [2], [13]. The empirical findings for each dimension are outlined as follows:

1. System Quality
   In general, the core architecture of SIAKAD is designed to handle major administrative functions, such as Study Plan Card (Kartu Rencana Studi / KRS) entry, grade verification, and academic history recording. However, regarding technical stability and reliability, findings reveal recurring bottlenecks during peak hours, such as during KRS registration periods or final semester grade releases. Users frequently experience server latency and system crashes. Furthermore, the system interface is perceived as not fully responsive on mobile devices, thereby limiting the flexibility of students and faculty members who exhibit high mobility in teaching hospital environments and laboratories. This technical constraint aligns with findings by Elmunsyah et al. [6], who emphasized that system stability and user interface responsiveness remain critical determinants of overall user engagement in educational platforms.
2. Information Quality
   Academic information presented within SIAKAD exhibits high accuracy regarding static data, such as student identities and curriculum frameworks. Nevertheless, discrepancies exist in real-time data synchronization (timeliness). Updates regarding lecture schedules, changes in clinical rotation venues, and grade revisions frequently suffer from upload lags. Consequently, the information displayed on the user portal does not always reflect the most current operational conditions on the ground. As noted by

Al-Azawei et al. [12], information timeliness is pivotal; delays in data synchronization significantly degrade user trust in centralized administrative portals.

3. Service Quality
   Technical service quality emerged as one of the most critically evaluated aspects by users. Although faculty IT staff possess adequate technical competency, the limited number of personnel relative to the volume of user inquiries causes response times for helpdesk tickets to be slow. Resolving issues such as password resets, data synchronization adjustments, or administrative verification requires time-consuming bureaucratic procedures when executed entirely through the official portal. This issue reflects Prasetyo and Kurniawan's [1] observation that service quality in academic systems is often hindered by rigid administrative workflows and insufficient technical support personnel.
4. User Satisfaction & Net Benefits
   The limitations across system quality, information quality, and service quality collectively impact user satisfaction. Users acknowledge that SIAKAD's centralized recording function provides net benefits in terms of official document archiving and institutional record standardization. However, from the perspective of daily operational efficiency, SIAKAD has not fully met the dynamic tactical coordination demands inherent to medical education.

Table 1. Synthesis of SIAKAD Success Evaluation Based on the DeLone & McLean Model

Evaluation Dimension	**Primary Indicators**	**Empirical Findings in the Field**	**Performance Category**
System Quality	Server stability, access speed, interface responsiveness	System crashes during peak periods (KRS/Grades); lack of mobile responsiveness.	Moderate / Needs Improvement
Information Quality	Accuracy, completeness, timeliness	Static data is accurate; operational data/schedule updates frequently experience lag.	Good (Static) / Low (Dynamic)
Service Quality	IT staff responsiveness, issue resolution speed	Response time for resolving technical issues is perceived as slow due to rigid formal procedures.	Critical Improvement Needed
User Satisfaction	Ease of use, user comfort, level of habituation	Users view the official system as useful for archiving, but impractical for daily communication.	Moderate
Net Benefits	Administrative efficiency, data accountability	Transparency in official archiving is realized, but daily communication efficiency remains low.	Positive for Managerial Level

Source: Compiled and analyzed from the Institutional Performance Report of the Faculty of Medicine, Universitas Hang Tuah (2026).

B. Dynamics of the Informal Media Workaround Phenomenon

The gap between official system capacity and dynamic operational demands drives the emergence of the workaround phenomenon—a series of adaptive user actions utilizing informal instant messaging applications (WhatsApp) as a parallel communication and administrative confirmation channel [8].

1. Triggers of the Workaround Phenomenon

The primary factors driving the academic community to turn to WhatsApp include:

a) Response Speed (Real-Time Communication): WhatsApp enables direct two-way communication among students, administrative staff, and lecturers without being hindered by login procedures or server disruptions.
b) Accessibility & Convenience: Using a platform that is already integrated into users' daily routines minimizes technological barriers. The transmission of required documents, photo proof, or urgent announcements can be executed instantly.
c) Flexibility in Clinical Rotation Coordination: The nature of medical education involving field schedules and hospital duties demands rapid coordination that is difficult to facilitate through SIAKAD's passive features.

These triggering factors strongly reflect the "law of least effort" and job characteristic autonomy discussed by de Vargas Pinto et al. [7], where users bypass formal systems to minimize friction in executing daily tasks.

2. Administrative Implications: Positive Impacts vs. Systemic Risks

The use of informal media as a workaround channel carries dual implications for faculty administrative governance:

a) Positive Impacts (Short-Term Operational Continuity):
    1. Expedites the resolution of urgent administrative bottlenecks.
    2. Enhances immediate engagement and comprehension of academic announcements at the cohort or group level.
b) Negative Impacts & Systemic Risks (Long-Term Risks):
    1. *Data Fragmentation (Data Silos):* Administrative files and agreements are dispersed across personal or group chats without connection to the central database [10].
    2. Lack of Audit Trail: Information transactions on informal media lack legal validation and official institutional archiving, making tracing difficult in cases of grade or attendance disputes.
    3. Data Security Vulnerabilities: Sensitive academic documents risk being distributed to unauthorized parties without adequate data protection standards [9], [11].

Table 2. Comparative Analysis of Official System (SIAKAD) and Informal Media Workaround (WhatsApp)

Characteristics	**Official Information System (SIAKAD)**	**Informal Media Workaround (WhatsApp)**
Communication Nature	Asynchronous, formal, one-way/rigid	Synchronous (real-time), interactive, informal

Characteristics	Official Information System (SIAKAD)	Informal Media Workaround (WhatsApp)
Accessibility	Restricted to web interface; prone to downtime during peak hours	Highly accessible; easily reachable via smartphones at any time
Data Reliability & Security	High (Officially archived in a centralized database)	Low (Data can be deleted, leaked, or fragmented)
Problem Resolution Speed	Slow (Requires ticket queuing and bureaucratic procedures)	Extremely Fast (Direct peer-to-peer confirmation)
Legal Status of Archives	Valid and legally recognized by the institution	Unofficial / Merely an operational assistance tool

Source: Compiled and analyzed from the Institutional Performance Report of the Faculty of Medicine, Universitas Hang Tuah (2026).

C. Discussion & Synthesis

The findings of this study reinforce technology adoption theoretical frameworks, demonstrating that the success of an information system is not determined solely by technical factors (system & information quality), but heavily depends on its alignment with users' actual workflows (fit to work pattern) [5]. The workaround phenomenon observed in the Faculty of Medicine represents a behavioral adaptation by the academic community to overcome SIAKAD's functional limitations.

From an information systems evaluation perspective, the widespread occurrence of workarounds should not be viewed merely as administrative non-compliance. Instead, it serves as a diagnostic tool indicating that the official information system suffers from a service quality gap and functional misalignment [8]. When an official system is perceived as overly rigid and slow-responding, users naturally seek technological shortcuts that demand the least effort for the fastest result.

However, excessive reliance on informal workarounds creates a digital governance paradox [14]. On one hand, WhatsApp successfully maintains short-term operational continuity; on the other hand, it compromises the long-term integrity of the management information system through the creation of unstructured and unindexed data (dark data) [9], [10].

Therefore, the strategic solution for the institution is not to rigidly prohibit informal media usage, but rather to pursue governance hybridization and integration [7]. Faculty management should modernize SIAKAD by adopting the advantageous features of informal media—such as API-based automated notifications, live chat helpdesk features, and mobile-friendly interfaces—so that efficiency needs are met without sacrificing the security and reliability of official academic records.

4. CONCLUSION

Based on the qualitative evaluation results using the DeLone & McLean framework, the implementation success of the Academic Information System (*Sistem Informasi Akademik* / SIAKAD) in the Faculty of Medicine still faces challenges across the dimensions of system quality, information quality, and service quality. Although SIAKAD successfully

performs its foundational function as a centralized and legally recognized repository for static academic data, system instability during peak usage periods, delays in operational data synchronization (*timeliness*), and slow technical support response times remain the primary obstacles to meeting daily user needs.

The gap between official system capabilities and the high-paced operational dynamics of medical education has given rise to the *workaround* phenomenon. Users widely adopt informal communication media (WhatsApp) as an alternative channel to achieve rapid response times, ease of access, and operational convenience. Although this workaround phenomenon effectively overcomes bureaucratic bottlenecks and maintains short-term operational continuity, its presence introduces long-term governance risks, such as data fragmentation, the loss of official audit trails, and potential security vulnerabilities in academic information.

5.RECOMMENDATIONS

To bridge the performance gap of the official system and organize the integration of digital administrative communication channels, several strategic and practical steps are recommended:

1. Feature Enhancement and System Interface Modernization (Technical Aspect)
   a) Mobile Application Development: Design a responsive, mobile-based interface for SIAKAD to improve accessibility for lecturers and students who demonstrate high mobility in teaching hospital and laboratory environments.
   b) Real-Time Notification Integration: Leverage instant messaging Application Programming Interface (API) integrations within the official system so that schedule updates, document verifications, or urgent announcements are automatically dispatched to user devices while maintaining an official system log.
2. Service Quality Enhancement and Technical Support Responsiveness (Service Aspect)
   a) Integrated Live Chat Helpdesk Development: Implement a live chat assistance feature or automated ticketing system within the SIAKAD portal to expedite user query resolution workflows (such as password resets or data corrections).
   b) Server & Infrastructure Capacity Upgrades: Periodically perform bandwidth optimization and server redundancy measures, particularly prior to peak usage periods such as course registration (*KRS*) and final grade releases.
3. Policy Formulation and Digital Governance Standard Operating Procedures (Policy Aspect)
   a) Administrative Communication SOP Formulation: Establish Standard Operating Procedures (SOPs) regulating the boundaries of informal media usage. Informal channels should function strictly as tactical coordination or reminder tools, whereas document submissions, validations, and formal decisions must remain executed exclusively through SIAKAD to ensure data reliability.
   b) Continuous Education and Training: Conduct regular training sessions for administrative staff and end-users to enhance data security literacy and foster optimal system utilization.

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