

BETWEEN EFFICIENCY AND COMPLEXITY

A Critical Analysis of the Implementation of the Madrasah Digital Report Card (RDM) at MTs El Jasmeen Singosari

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Abstract: Between Efficiency and Complexity: A Critical Analysis of the Implementation of the Madrasah Digital Report Card (RDM) at MTs El Jasmeen Singosari

Digital transformation in education has driven the implementation of various technology-based systems, one of which is the Madrasah Digital Report Card (RDM), which aims to improve the efficiency of assessment administration. However, the reality of implementation often does not fully align with normative expectations. The objective of this study is to critically examine the implementation of the Madrasah Digital Report Card (RDM) by focusing on the relationship between efficiency and complexity that arises in its practical use. A qualitative approach using the case study method was chosen for this research, which was conducted at MTs El Jasmeen Singosari. Research data were collected through semi-structured interviews involving an educator and a madrasah operator or educational staff, and were supplemented with documentary data. The data analysis process was based on an interactive analysis model encompassing the stages of condensation, presentation, and drawing conclusions. The research findings indicate that the implementation of the RDM is capable of creating efficiency at the output stage, particularly in the processing and presentation of report cards, which have become faster and more standardized. However, at the input and process stages, the system actually introduces complexities in the form of more detailed workloads, technical constraints, and demands for user adaptation. RDM yields partial efficiency accompanied by hidden complexities, meaning that digitization does not fully simplify the work but rather redistributes the workload. Furthermore, RDM's contributions are more dominant in administrative aspects than in pedagogical quality improvement, while operators play a crucial role as system mediators. These findings indicate the need to strengthen users' digital literacy, provide ongoing technical support, and streamline RDM workflows so that the implementation of madrasah digitization can proceed more effectively.

Keywords: Madrasah Digital Report Card (RDM), efficiency, complexity, digitalization of education

Abstrak: Antara Efisiensi dan Kompleksitas: Analisis Kritis Implementasi Rapor Digital Madrasah (RDM) di MTs El Jasmeen Singosari

Transformasi digital dalam pendidikan mendorong implementasi berbagai sistem berbasis teknologi, salah satunya Rapor Digital Madrasah (RDM) yang

bertujuan meningkatkan efisiensi administrasi penilaian. Namun, realitas implementasi seringkali tidak sepenuhnya sejalan dengan harapan normatif. Tujuan penelitian ini yaitu mengkaji secara kritis implementasi Rapor Digital Madrasah (RDM) dengan memfokuskan perhatian pada relasi antara efisiensi dan kompleksitas yang muncul dalam praktik penggunaannya. Pendekatan kualitatif dengan metode studi kasus dipilih dalam penelitian ini yang dilaksanakan di MTs El Jasmeen Singosari. Data penelitian dikumpulkan melalui wawancara semi-terstruktur yang melibatkan seorang pendidik dan seorang operator madrasah atau tenaga kependidikan, serta diperkuat dengan data dokumentasi. Proses analisis data berdasarkan model analisis interaktif yang mencakup tahap kondensasi, penyajian, dan penarikan simpulan. Temuan penelitian memperlihatkan bahwa implementasi RDM mampu menciptakan efisiensi pada tahap output, terutama dalam proses pengolahan dan penyajian raport yang menjadi lebih cepat serta terstandar. Namun, pada tahap input dan proses, sistem justru menghadirkan kompleksitas berupa beban kerja yang lebih rinci, kendala teknis, serta tuntutan adaptasi pengguna. RDM menghasilkan efisiensi parsial yang disertai kompleksitas tersembunyi sehingga digitalisasi tidak sepenuhnya menyederhanakan pekerjaan, melainkan mendistribusikan ulang beban kerja. Selain itu, kontribusi RDM lebih dominan pada aspek administratif dibandingkan peningkatan kualitas pedagogis, sementara operator berperan penting sebagai mediator sistem. Temuan ini mengindikasikan perlunya penguatan literasi digital pengguna, dukungan teknis yang berkelanjutan, serta penyederhanaan alur kerja RDM agar implementasi digitalisasi madrasah dapat berjalan lebih efektif.

Kata Kunci: Rapor Digital Madrasah (RDM), efisiensi, kompleksitas, digitalisasi pendidikan

INTRODUCTION

Digital transformation in the field of education has become an unavoidable necessity, especially in the era of the Fourth Industrial Revolution, which demands efficiency, accuracy, and data integration across various aspects of educational management (Ansori et al., 2025; Gabriel et al., 2022; Nashrullah et al., 2025). One concrete form of this transformation is the digitization of the assessment system through the implementation of the Madrasah Digital Report Card (RDM), developed by the Ministry of Religious Affairs as an effort to modernize educational administration within madrasahs (Pratama et al., 2022; Rohman et al., 2021). The RDM is designed to replace the manual report card system with a digital-based system that is expected to improve teacher work efficiency, minimize administrative errors, and facilitate the management and distribution of student learning outcome data (Humaira & Andriesgo, 2025; Ma'ruf et al., 2023).

Conceptually, the digitization of assessment through RDM represents an effort to rationalize the technology-based education system, in which administrative processes that were previously manual are transformed into automated and integrated processes (Alenezi et al., 2023; Fajrin & Machali, 2023; Hanifah et al.,

2024; Pratama et al., 2022). From this perspective, RDM is not merely viewed as an administrative tool but also as a strategic instrument in efforts to improve the quality of educational services (Nuraini et al., 2022; Yusri, 2025). Efficiency is one of the primary claims associated with the implementation of this system, whether in terms of time savings, ease of data access, or the simplification of assessment procedures. However, the reality of technology implementation in education does not always align linearly with the normative expectations established in policy. Various studies indicate that the digitization of educational systems often introduces new complexities, whether in technical aspects, human resource readiness, or administrative burdens that actually increase (Aliyan & Hamid, 2021; Lestari et al., 2025; Ronzhina et al., 2021; Yulianto et al., 2025). In this context, technology is not always a simplistic solution; rather, it can become a source of new problems if not balanced with user readiness and adaptive system design (Gouseti & Shaw, 2026; Silviya & Junaris, 2025; Timotheou et al., 2023). This creates a paradox between the efficiency goals promoted by digital systems and the experience of complexity felt by users in the field.

In practice, teachers as the primary actors in the assessment process are the group most affected by the implementation of RDM (Firmansyah et al., 2024; Husnawati & Pujiarto, 2023). They are not only required to understand the substance of learning assessment but must also adapt to a digital system with its own operational logic (Futriana & Susilo, 2022; Mubarak, 2022; Zaktian & Ilman, 2025). Meanwhile, madrasah operators serve as technical managers who act as a bridge between the system and users, thereby also experiencing the complexities of data management (Fauzi et al., 2025; Hamdanah, 2022; Raudatul & Junaris, 2025). It is this interaction between teachers, operators, and the system that shapes the reality of RDM implementation, which is often not as simple as it is formulated in policy.

A number of studies have examined the implementation of the Madrasah Digital Report Card (RDM) as part of the digital transformation in Islamic education. Research by Ma'ruf et al. (2023) demonstrates how the use of an RDM based system is positively associated with improvements in the quality of madrasah education, particularly in terms of data management and assessment accuracy. This system is considered capable of creating a more systematic and integrated administrative management system, thereby supporting data-driven decision-making. These findings reinforce the assumption that digitization through the RDM has the potential to simultaneously improve the efficiency and quality of educational services. Furthermore, a study by Fajrin & Machali (2023) examined the application of RDM in the administrative management of student learning assessment. The findings indicate that RDM facilitates the process of entering grades and compiling more structured learning outcome reports. However, this also suggests challenges in user adaptation, particularly regarding technical understanding and the use of system features.

Another study by Nuraini et al. (2022) examined the implementation of RDM at the elementary madrasah level and found that the use of digital systems in assessment improves the accuracy and consistency of the presentation of learning outcome data. RDM was found to help teachers compile more systematic reports compared to manual methods. However, this study also noted that the effectiveness of RDM has not yet been fully optimized due to ongoing challenges in system usage, such as limited technical understanding and the need for teacher training.

On the other hand, a study conducted by Pratama et al. (2022) emphasizes that the implementation of RDM as a digital assessment application significantly contributes to the efficiency of educational administrative processes. This system enables faster and more accurate processing of grade data, thereby reducing the potential for errors in calculation and reporting. However, this research tends to focus on the functional aspects of the system without delving deeper into user experiences regarding the complexities of using RDM in the field. Furthermore, research by Silviya & Junaris (2025) examines the optimization of RDM utilization in improving the efficiency of academic services in madrasahs. The results indicate that RDM has the potential to be an effective tool in supporting the digitization of educational services if backed by adequate infrastructure and sufficient user competence. However, this study also suggests that without such support, the implementation of RDM may actually create new obstacles, both in technical and administrative aspects.

This study draws on the Technology Acceptance Model (TAM) developed by Davis (1989) to understand user acceptance of the Madrasah Digital Report (RDM) (Granic & Marangunic, 2019). TAM explains that technology acceptance is influenced by perceived usefulness and perceived ease of use (Ibrahim et al., 2017). In the context of RDM, systems tend to be accepted when they are perceived as capable of improving work effectiveness and being easy to use. However, TAM tends to assume a linear relationship between ease of use, perceived usefulness, and technology acceptance. In reality, users may experience the benefits of the system while simultaneously facing technical obstacles, additional workloads, and complex adaptation demands. Therefore, this study uses TAM as a foundation for analysis while also critiquing its limitations in explaining the relationship between efficiency and complexity in RDM implementation at madrasahs.

Upon closer examination, the findings of previous studies reveal conceptual tensions that have not yet been fully resolved. On the one hand, Pratama et al., (2022), and Ma'ruf et al. (2023) position RDM as a tool capable of improving administrative efficiency, data accuracy, and the quality of assessment governance. These findings tend to portray digitalization as a process that yields direct administrative benefits. On the other hand, Fajrin & Machali (2023), Nuraini et al. (2022), and Silviya & Junaris (2025) indicate that RDM implementation also faces various challenges, such as user adaptation difficulties, training needs, limited technical competencies, and infrastructure barriers. These differing findings indicate

that the success of RDM is not entirely determined by the existence of the digital system itself, but also by the social and technical conditions surrounding its use.

Most previous research still treats efficiency and barriers as two separate findings, without examining how the two are intertwined in the practical use of the system. In other words, there remains a gap in the literature regarding the dialectical relationship between the efficiency promised by digitalization and the complexity that actually arises during its implementation. Furthermore, studies grounded in the local context of madrasahs using an in-depth case study approach have not been extensively explored, even though the local context plays a crucial role in determining the success of educational technology policy implementation. Based on this, this study aims to critically analyze the implementation of the Madrasah Digital Report Card (RDM) at MTs El Jasmeen Singosari by highlighting the dynamics between the expected efficiency and the complexity that arises in practice.

The selection of MTs El Jasmeen Singosari as the research site was based on the consideration that this madrasah has actively implemented the Madrasah Digital Report Card (RDM) in the student assessment process, thereby enabling an in-depth examination of the system's practical use in the field. An interesting phenomenon emerged during the RDM implementation: a gap in understanding between teachers as the primary users and operators as the technical system managers. This situation has led to a high level of dependence on operators to resolve various technical and administrative issues related to the use of the RDM. This phenomenon indicates that digitization not only brings about technological changes but also reshapes working relationships, the distribution of knowledge, and creates new workloads within the madrasah environment.

RESEARCH METHODS

A qualitative approach using the case study method was chosen because it aligns with the objective of this study, which is to gain an in-depth understanding of the phenomenon of the implementation of the Madrasah Digital Report Card (RDM) in a real-world context, particularly in uncovering the dynamics between efficiency and complexity experienced by system users (Sugiyono, 2016). This research was conducted in between March-April 2026. The research location was MTs El Jasmeen Singosari. The location was selected because the madrasah had already implemented the RDM in the student assessment process, making it relevant to the research focus.

The research subjects included two main informants: one teacher as a direct user of the RDM system and one madrasah operator as the technical administrator. This number of informants is considered adequate because this study employs a case study approach focused on deep understanding of the phenomenon, rather than statistical generalization. In qualitative research, selecting informants with rich information (information-rich cases) is more important than the mere number of

participants (Patton, 2015). Furthermore, both informants represent key actors in the implementation of RDM, enabling them to provide relevant and comprehensive data aligned with the study's focus. The information obtained also reveals consistent patterns of findings, making it sufficient to explain the dynamics of efficiency and complexity in RDM usage (Yin, 2018). In qualitative research, data adequacy is determined more by the depth of information and the achievement of saturation than by the number of participants alone.

Data sources include primary and secondary data (Ozkan, 2023). Primary data was collected through in-depth interviews with informants, while secondary data was obtained from various supporting documents, such as RDM user guides, digital report card templates, and madrasah administrative records relevant to the study. The use of both types of data is intended to strengthen the validity of the research findings through source triangulation. Data collection was conducted using semi-structured interviews and documentation. Semi-structured interviews were chosen so that the researcher would have a set of guided and systematic questions, while still allowing informants the opportunity to freely and deeply share their experiences and perspectives (Ardiansyah et al., 2023). The focus of the interviews included understanding of the RDM, experiences with its use, perceptions of efficiency, as well as challenges or complexities encountered. Meanwhile, documentation techniques were used to obtain factual data that could support and verify the interview results, particularly regarding the procedures and interface of the RDM system.

Data analysis in this study employed an interactive analysis model comprising three stages: data condensation, data presentation, and drawing conclusions (Miles et al., 2014). During the data condensation stage, the researcher selected and categorized the interview results to identify key themes aligned with the study's focus. All interview results were first transcribed verbatim, then read repeatedly to gain a comprehensive understanding of the informants' experiences regarding RDM use. Next, the researcher performed manual coding by labeling statements deemed relevant to the research focus, such as ease of use, system benefits, technical challenges, user adaptation, and the role of the operator. The classified data were then organized into thematic narratives to illustrate patterns in the informants' experiences. The next stage involved drawing inductive conclusions through the interpretation of research findings from a critical analysis perspective. To sharpen the analysis process, this study also applied thematic analysis focused on two main aspects: efficiency and complexity in RDM implementation. Data validity was ensured through source triangulation and method triangulation (Rijali, 2019). Source triangulation was conducted by comparing information obtained from teachers and operators, while method triangulation was conducted by combining data from interviews and documentation.

RESULT AND DISCUSSION

User Understanding and Adaptation to RDM

The research findings indicate that teachers understand the RDM system instrumentally that is, merely as a tool for entering grades and printing report cards while system operators possess a more structural understanding of the system's workflow. This situation suggests the existence of a digital literacy gap within the madrasah environment. Interview results show that teachers tend to view the RDM system instrumentally, seeing it solely as a tool for entering grades and printing report cards without fully grasping the system's underlying logic. This is reflected in the statement: "I know RDM is for entering grades and printing report cards, but I don't really understand the system in detail; I usually just jump right into using it." (AF, 2026).

This pattern indicates that teachers' interaction with technology is task-oriented, not system-oriented. Teachers focus on completing tasks, not on understanding the system. Consequently, when workflow changes, errors occur, or adjustments are needed, reliance on others in this case, operators becomes unavoidable. Conversely, operators possess a more structural understanding: "As an operator, I must understand the workflow from input to output, including where to correct data errors if they occur." (MZA, 2026). This difference highlights the existence of a digital literacy stratification within the institution, where technological proficiency is uneven. The implications extend beyond work efficiency to the distribution of cognitive load: teachers avoid the system's complexity, while operators absorb it.

From an adaptation perspective, teachers acknowledge that the initial phase of using RDM was marked by confusion: "At first, it was quite confusing; there were many menus, and I had to ask the operator first." (AF, 2026). This phase is analytically significant because it indicates that the learning curve for using RDM is not entirely flat. A system that is ideally meant to simplify tasks actually requires a fairly intensive adaptation phase. This aligns with the findings of Fajrin & Machali (2023) who noted that the main obstacle to RDM implementation lies in the user adaptation process, not in the availability of the system itself. When viewed within a theoretical framework, this phenomenon relates to perceived ease of use in the Technology Acceptance Model (TAM). A system that is considered "easy" by design is not necessarily perceived as such by users, especially if it is not accompanied by conceptual understanding (Ibrahim et al., 2017). Here, it is evident that ease is subjective and contextual, depending on the user's background.

Table 1 shows that the two informants hold different roles in the implementation of RDM, thereby providing complementary perspectives. AF, as an educator, serves as a direct user who interacts with the system to enter grades and manage student report cards, and is thus able to describe the user experience in performing RDM's operational functions. Meanwhile, MZA, as an operator or

educational staff member, serves as a mediator responsible not only for the system’s technical aspects but also for assisting teachers when they encounter usage challenges. These differing roles allow the study to obtain a more comprehensive picture of RDM implementation, from both the end-user and system administrator perspectives. Furthermore, this configuration of roles indicates that RDM implementation depends not only on the technology used but also on the interactions among the actors involved in its operation.

Table 1. Research Informant Profile

No.	Informant	Role	Involvement in RDM	Position in the System
1.	AF	Teacher	Direct user (enters grades and report cards)	User
2.	MZA	Madrasah Operator	Technical and system support staff	Mediator

Source: Data compiled by the researcher, 2026

The Efficiency of RDM Implementation in Assessment Practices

Research data shows that RDM can speed up the report card preparation process and result in more organized and standardized administration. To a certain extent, RDM does indeed provide significant efficiency gains, particularly in the final stage of data processing. A teacher stated: “Compared to the manual method, it’s clearly faster in the final stage; you just enter the data and the report card is ready right away.” (AF, 2026). An operator reinforced this view: “The data is more organized and centralized, so it’s easier if you want to check or reprint.” (MZA, 2026). The efficiency referred to here is structural in nature: the system reduces repetitive tasks such as rewriting, manual summarization, and administrative corrections. These findings align with research by Ma’ruf et al. (2023) and Pratama et al. (2022) which emphasizes that digitization through RDM can improve accuracy and speed up data management processes.

However, when the analysis focuses on the entire process, an imbalance emerges between efficiency at the downstream stage and the workload at the upstream stage. A teacher remarked: “The input is quite extensive and detailed, so sometimes it actually feels time consuming” (AF, 2026). This statement reveals a dimension often overlooked in previous studies: efficiency does not occur uniformly across all stages. The system does accelerate output, but at the same time it complicates the input process. Conceptually, this indicates a redistribution of workload, not a total reduction in workload. Upon closer examination, efficiency in RDM is conditional efficiency dependent on specific conditions, such as user capability, system stability, and the complexity of the input data. In this context, the concept of perceived usefulness in the TAM needs to be interpreted more critically. The benefits of the system are not absolute but are negotiated within the user’s daily experience.

Table 2. RDM Implementation Findings Matrix

Aspect	Efficiency Indicators	Field Findings	Complexity Indicators
Data Processing	Automated and fast	Reports generated more quickly	Detailed and multi-layered data input
Administration	More organized and standardized	Uniform report format	Time consuming input process
Data Access	Centralized and easily accessible	Easy to check and reprint	Dependent on network and system
Workload	Reduces manual work	No need for re-recording	Workload shifts to the input stage
System Usage	Digital and integrated	Simplifies output	Confusing at the beginning of use

Source: Data compiled by the researcher, 2026

Table 2 shows that the implementation of RDM has produced mixed results. On the one hand, the system has improved efficiency through faster data processing, more organized and standardized administration, and easier access to assessment data. These findings indicate that digitization has successfully simplified certain administrative tasks previously performed manually. However, on the other hand, this efficiency is accompanied by various forms of complexity, such as the need for more detailed data input, reliance on networks and systems, and the requirement for users to adapt to digital workflows. Interestingly, complexity does not disappear through digitization but rather shifts from the output stage to the input and processing stages. This table indicates that the primary benefit of RDM lies in the acceleration of final results, while the workload and usage challenges are concentrated in the system operation process.

The Complexities of Using RDM

This study found that the complexity of using RDM manifests in the form of detailed data input requirements, a need for high precision, network constraints, and system errors. Behind the narrative of efficiency, complexity is an inseparable dimension of RDM implementation. Teachers highlighted the system's fairly high demands: "Many assessment components must be filled in one by one, so it requires careful attention and takes time" (AF, 2026). This complexity is not only technical but also cognitive. Teachers do not merely input data but must also understand assessment categories, form structures, and consistency across components. In other words, the system does not merely replace manual work but adds a new layer to the user's thought process. Technical challenges further exacerbate this complexity: "Sometimes the system is slow or crashes, especially when the network is unstable" (AF, 2026). These issues indicate that the success of digital systems is heavily influenced by the availability and quality of supporting infrastructure. Without adequate technical support, a system designed for efficiency can actually become a source of obstacles.

From the operator's perspective, complexity manifests as an additional workload: "If a teacher is having trouble, I'm usually the one who helps. So it just adds to the workload." (MZA, 2026). This statement shows that complexity does not disappear but shifts. Teachers may feel assisted by the presence of an operator, but the operator becomes the focal point for accumulated problems. This finding reinforces the research results by Nuraini et al. (2022) and Silviya & Junaris (2025) which shows that the digitization of education is often accompanied by new challenges, particularly in terms of technical issues and user adaptation. Complexity, in this context, is not an anomaly but an inherent consequence of digital transformation.

The Tension Between Efficiency and Complexity in RDM Implementation

The most significant finding of this study is the dialectic relationship between efficiency and complexity. RDM is perceived as aiding teachers' work, but at the same time is considered confusing and complex at certain stages. This situation indicates that efficiency and complexity are not mutually exclusive conditions but coexist simultaneously. This section forms the core of the analysis, as it reveals that efficiency and complexity do not occupy opposing poles but coexist simultaneously within the user experience. A teacher stated: "It actually helps, but on the other hand, it's also complicated at first" (AF, 2026). This statement contains a strong sense of ambivalence. RDM is perceived as both a solution and a problem. This phenomenon can be understood as a form of dialectic: efficiency emerges as a result of the complexity that must be navigated.

From a workflow perspective, efficiency is most evident in the output stage, that is, when the system has processed the data automatically. Conversely, complexity is concentrated in the input and processing stages. This suggests that digitization does not eliminate complexity, but rather shifts it to a specific point in the workflow. This is where the main contribution of this research lies. Previous studies have tended to view RDM in a linear manner: the more digital, the more efficient (Silviya & Junaris, 2025). Findings in the field actually reveal a nonlinear pattern, in which efficiency and complexity are intertwined. Silviya & Junaris (2025) It has indeed touched on the potential for obstacles to arise, but has not yet elaborated on the dialectical relationship between these two dimensions. The concept of partial efficiency is relevant for explaining this situation (Granic & Marangunic, 2019; Ibrahim et al., 2017). The system works efficiently in certain aspects, but not throughout the entire process. At the same time, what might be called "hidden complexity" emerges that is, a workload that is not apparent in the system design but is very real in actual use (Gouseti & Shaw, 2026).

Table 3 shows that efficiency and complexity in RDM implementation are not mutually exclusive; rather, they coexist in different dimensions. Efficiency is most evident in the output stage, particularly through the faster and automated report

generation process. Conversely, complexity is more dominant at the input stage, which requires detailed and layered data entry. This creates an ambivalent user experience, where users acknowledge the system's benefits in simplifying administrative work but simultaneously face difficulties in its operation. These findings also indicate a redistribution of workload, namely a reduction in tasks at the final stage but an increase in demands at the initial stage. The integration of digital systems through RDM does not entirely eliminate complexity; rather, it shifts and transforms it into new forms. The efficiency generated by RDM can be understood as partial efficiency that remains dependent on users' understanding and ability to adapt to the demands of the digital system.

Table 3. An Analysis of the Dialectic Between Efficiency and Complexity

Dimension	Manifestations of Efficiency	Manifestations of Complexity	Interpretation
Output Stage	Quick and Automatic Reports	-	Real efficiency
Input Stage	-	Detailed and complex input	Dominant complexity
User Experience	Simplifies work	Confusing and complicated	Ambivalence
Workload	Lighter at the end	Heavier at the beginning	Workload redistribution
Digital System	Integrated	Not entirely user friendly	Partial efficiency

Source: Data compiled by the researcher, 2026

The Role of Operators as Mediators in Digital Systems

The role of the operator in RDM implementation cannot be viewed merely as an administrative function. It has evolved into that of a mediator between the system and the users. A teacher stated: "If there's a problem or I don't understand something, I usually ask the operator right away." (AF, 2026). Meanwhile, the operator explained: "In addition to managing data, I also have to help teachers when they encounter difficulties." (MZA, 2026).

This relationship indicates that the success of the system does not always depend on the latest technology, but also on the presence of an actor capable of bridging the gap between the system and the users. The operator functions as a human interface that translates the complexity of the system into a more easily understandable form (Fajrin & Machali, 2023). This phenomenon has rarely been explicitly addressed in previous research. Most studies have focused primarily on the system and the users, without considering the role of support staff. In practice, however, operators are a key element in keeping the system running.

Implications for Assessment Practices in Madrasahs

From an administrative standpoint, the benefits of RDM are quite clear. A teacher stated: "Report cards are neater and more uniform than when done

manually” (AF, 2026). Standardization and neatness are the main advantages. The system reduces format variations and enhances report consistency. However, from a pedagogical perspective, the impact is not particularly significant: “In terms of assessment, it’s essentially the same; the only difference is in the input method” (AF, 2026). This statement prompts reflection that digitization has not yet addressed the core of the educational process the quality of assessment itself. RDM functions more as an administrative tool than as an instrument for improving the quality of learning. This finding expands upon the research results of Humaira & Andriesgo (2025) which emphasizes improving the quality of education through RDM. In this context, the improvement in question is more administrative than substantive.

Table 4. The Role of Actors in the Implementation of RDM

Actor	Primary Role	Challenges	Impact
Teacher	Data entry and system usage	Lack of understanding of the system	Reliance on operators
Operator	System administrators and mediators	Additional workload	Key to the system’s success
RDM System	Digital assessment tools	Complex and technical	Administrative efficiency

Source: Data compiled by the researcher, 2026

Table 4 shows that the implementation of RDM is the result of an interaction between human actors and digital systems that are mutually dependent. Teachers or educators serve as the primary users responsible for entering grades, but limited understanding of the system’s features and procedures leads to a high degree of dependence on operators. In this situation, operators not only perform technical functions but also act as mediators who bridge the gap between user needs and system requirements. Consequently, much of the complexity of using RDM is concentrated on the operators through additional workloads such as providing guidance, resolving technical issues, and managing the system as a whole. Meanwhile, while RDM as a digital tool has indeed succeeded in improving the efficiency of assessment administration, its effectiveness is heavily influenced by the capabilities of the actors operating it.

CONCLUSION

The implementation of the Madrasah Digital Report Card (RDM) at MTs El Jasmeen Singosari demonstrates that digitization not only yields administrative efficiencies but also introduces new complexities in its practical application. Efficiency is evident in the accelerated processing and more standardized presentation of report cards, while complexity arises from the demand for more detailed data input, technical challenges, and the need for user adaptation. The main

findings of this study reveal a dialectic between efficiency and complexity, wherein the RDM yields partial efficiency accompanied by hidden complexity. Furthermore, the role of the operator as a system mediator is a critical factor in bridging the gap in users' digital literacy. These findings underscore that the implementation of RDM must be understood as a socio-technical process involving the interaction between technology, users, and the institutional context. Practically, it is necessary to strengthen teachers' digital literacy, optimize the role of operators, and simplify system workflows to ensure that digitization proceeds more effectively.

This study has limitations because it was conducted at only one madrasah with a limited number of informants, so the findings cannot yet be generalized to a broader madrasah context. Additionally, the study focused on user experiences and did not deeply examine policy aspects, technological infrastructure, or the impact of RDM on the quality of learning. Therefore, future research is recommended to involve more madrasahs with diverse characteristics, use a comparative or mixed-methods approach, and explore the influence of RDM implementation on the effectiveness of assessment and pedagogical quality more comprehensively.

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