DIGITAL TRANSFORMATION IN MADRASAH ASSESSMENT:
An Analysis of Android-Based End-of-Year Assessment Implementation

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Abstrak: Transformasi digital dalam pendidikan, khususnya di madrasah, menjadi tantangan besar dalam menghadapi Revolusi Industri 4.0 dan perkembangan teknologi informasi. Di MTsN 1 Buton, implementasi Penilaian Akhir Tahun berbasis Android dipilih sebagai langkah untuk merespons perubahan ini. Penelitian ini menggunakan pendekatan kualitatif studi kasus dengan melibatkan kepala madrasah, guru, dan siswa. Proses implementasi penilaian akhir melalui tiga tahap: perencanaan, pengembangan, dan pelaksanaan. Tahap perencanaan melibatkan kolaborasi antara pimpinan madrasah, guru, dan tim teknologi informasi untuk memilih platform dan memetakan perangkat. Aplikasi ujian dikembangkan dengan fitur seperti acak soal, batas waktu, dan penyimpanan otomatis. Ujian dilaksanakan bertahap untuk menghindari gangguan jaringan. Kendala yang ditemukan meliputi keterbatasan perangkat, akses internet, literasi digital yang rendah, dan potensi kecurangan. Faktor pendukung termasuk dukungan pimpinan, komitmen guru, antusiasme siswa, dan keberadaan tim teknologi informasi yang kompeten. Penelitian ini menunjukkan bahwa sinergi antara komitmen, literasi digital, dan manajemen adaptif sangat penting. Implikasi dari temuan ini memberikan kontribusi untuk kebijakan asesmen digital yang lebih efektif dan inklusif di madrasah, serta menekankan pentingnya investasi teknologi dan strategi mitigasi risiko.

Kata Kunci: Transformasi Digital, Asesmen Digital, Asesmen Madrasah

Abstract: Digital transformation in education, particularly in madrasahs, poses a major challenge in facing the Fourth Industrial Revolution and the development of information technology. At MTsN 1 Buton, the implementation of Android-based End-of-Year Assessment was chosen as a step to respond to these changes. This study uses a qualitative case study approach involving the madrasah principal, teachers, and students. The implementation process of the final assessment was carried out in three stages: planning, development, and implementation. The planning stage involved collaboration between madrasah leaders, teachers, and the information technology team to select the platform and map the devices. The exam application was developed with features such as random questions, time limits, and automatic saving. The exams were conducted in stages to avoid network disruptions. Challenges encountered included device limitations, internet access issues, low digital literacy, and potential cheating. Supporting factors included leadership support, teacher commitment, student enthusiasm, and the presence of a competent information technology team. This study demonstrates that synergy between commitment, digital literacy, and adaptive management is crucial. The implications of these findings contribute to more effective and inclusive digital assessment policies in madrasahs, emphasizing the importance of technology investment and risk mitigation strategies.

Keywords: Digital Transformation, Digital Assessment, Madrasah Assessment

INTRODUCTION

Digital transformation has become a global agenda in various sectors, including education, along with the demands of the industrial revolution 4.0 and the rapid development of information technology (Aditya & Suranto, 2024; Basit, Bakti, & Afriliana, 2024; Darmawan, Fauzi, & Siregar, 2024). In the context of education, digitization is not only limited to the learning process, but also includes the evaluation or assessment system which is an essential component in ensuring the quality of learning (Masitho et al., 2023; Sobirin, Ihsan, & Wahab, 2023). Madrasahs, as formal Islamic education institutions in Indonesia, are faced with the challenge of adjusting to these developments so as not to be left behind in the flow of change. One significant form of innovation is the utilization of Android-based technology in the implementation of assessments, especially the End-of-Year Assessment. (Agustina, Fakhruddin, & Istan, 2020; Fikri, 2023; Ridlo, Istighfarini, & Supeno, 2022; Rohmah, Rusilowati, Supriyadi, & Widowati, 2023). end-of-year assessment has a strategic position in measuring student learning outcomes comprehensively, thus demanding efficient, accountable, and integrated implementation with the latest technological developments (Ridlo et al., 2022; Rohmah et al., 2023).

However, assessment practices in many madrasahs are still dominated by paper-based manual systems, which are not only time-consuming and costly, but also prone to administrative errors and less environmentally friendly (Masitho et al.,

2023). On the other hand, the use of Android devices, which has now reached almost all levels of society, offers great potential to be adopted as a digital assessment medium that is cheap, flexible, and easy to operate (Sobirin et al., 2023). The implementation of Android-based end-of-year assessments is a progressive step towards a more modern and efficient evaluation system, especially in the madrasah environment. MTsN 1 Buton, as one of the public madrasahs in the Southeast Sulawesi archipelago, is an interesting example of this digital transformation effort. The institution's experience in integrating Android technology into the formal assessment system offers an important opportunity to be studied in depth as an initial model for the development of digital assessment in madrasah.

Although the digitization of assessment has become an integral part of the discourse on educational innovation, its implementation in the madrasah environment still faces various structural, technical and cultural challenges (Anugerah et al., 2023; Irawan & Latifah, 2023). Many madrasahs do not yet have a digital-based evaluation system that is standardized and integrated with the characteristics of Islamic Religious Education learning, which demands a contextual approach and Islamic pedagogical values (Anugerah et al., 2023). On the other hand, the potential of Android technology as an easily accessible and cost-effective assessment platform has not been fully utilized optimally in the implementation of the End of Year Assessment (End of Year Assessment) (Masitho et al., 2023). At MTsN 1 Buton, the initial effort in

implementing an Android-based end-of-year assessment system is an interesting case study to analyze, given its characteristics as a public madrasah in an archipelago with limited infrastructure but showing strong initiatives in digital transformation.

The main issues that arise are how the implementation process of this Android-based end-of-year assessment system takes place technically and pedagogically (Sadiyah, Kurniawan, & Anhar, 2023). as well as the extent to which the system can improve the efficiency, accuracy, and transparency of assessment compared to conventional methods (Gani, Arifin, & Zaini, 2022). In addition, it is important to identify what obstacles are faced in the implementation process, both in terms of teacher readiness, student digital competencies, and institutional policy support (Prastomo, 2020; Usuluddin et al., 2022). This research seeks to answer these issues by empirically exploring the dynamics of the implementation of the Android-based assessment system at MTsN 1 Buton as part of the madrasah digital transformation.

This study aims to deeply analyze the implementation process of Android-based End-of-Year Assessment at MTsN 1 Buton as a form of digital transformation in the madrasah assessment system. Specifically, this study wants to describe the planning, development, and implementation stages of the digital assessment system, as well as identify the supporting and inhibiting factors in the implementation process. This study also aims to evaluate the effectiveness of the Android-based end-of-year assessment system from the perspective of time

efficiency, accuracy of assessment results, and ease of access for teachers and students. Through a contextual-based implementative study approach, this research is expected to produce a complete empirical picture of madrasah readiness in adopting digital technology for assessment, as well as provide strategic input for the development of digital assessment policies and practices in other madrasah environments. Thus, this research is not only descriptive, but also constructive in encouraging a learning ecosystem that is adaptive to the development of information technology.

Although the issue of digitalization in educational assessment has been the concern of many researchers, most studies still focus on the development of digital learning media or evaluation systems in the context of public schools, with a limited scope in the fields of science and technology. Studies that specifically examine digital assessment in the context of madrasah, especially in Islamic Religious Education subjects, are still relatively minimal and lack a place in the academic literature. In addition, the dominant approach in previous studies used more experimental models or prototype development, while implementative studies based on field studies in Islamic education institutions are still rarely found. This has resulted in a limited understanding of how digital transformation actually occurs in madrasah classrooms, especially in evaluation activities such as End-of-Year Assessments.

Not many studies have comprehensively explored the challenges, strategies, and dynamics of implementing

Android-based assessment in madrasah, both in terms of institutional policies, teacher readiness, and learner responses. Thus, there is an important gap in the literature that needs to be filled through contextual and practice-based research. This study aims to bridge the gap by presenting an empirical analysis of the implementation of Android-based digital assessment in MTsN 1 Buton, which can be a significant contribution to the expansion of studies in the field of learning technology and the development of digital-based assessment in madrasah environment.

To understand more deeply about digital transformation, the following authors will discuss digital transformation which refers to the process of comprehensive change in the learning, management, and evaluation systems of education through the use of digital technology. According to OECD (2019), digital transformation is not just the use of technology as a tool, but includes changes in ways of thinking, learning methods and assessment systems that are more flexible, efficient and data-driven. Digitalization allows educational institutions to expand access, improve the quality of learning, and encourage active and independent student participation. In the madrasah environment, digital transformation is being adopted through various Ministry of Religious Affairs programs that encourage the use of technology in learning and assessment. The implementation of technology, including the use of mobile devices such as Android, reflects the madrasah's concrete efforts to keep up with the times while maintaining the quality of education based on Islamic values.

Assessment is a systematic process of collecting, analyzing and interpreting information to determine student learning outcomes. According to Nitko and Brookhart (2011), assessment includes formative and summative assessments that serve to support the learning process and evaluate learning outcomes. In madrasah, assessment has a strategic role in ensuring students' mastery of cognitive, affective and psychomotor competencies, in accordance with Islamic values. Digital transformation in assessment allows assessment to be carried out more quickly, accurately and efficiently. In addition, digital assessment provides opportunities for teachers to develop varied and context-based questions, as well as obtain real-time data on learning outcomes. This is very useful in making learning decisions that are more responsive to student needs.

Android-based assessment is one form of digital assessment that utilizes mobile devices, such as smartphones or tablets, to conduct exams. This assessment model is considered practical, cost-effective, and able to reach students more widely, especially in areas that do not have adequate computer facilities. According to Wahyudi (2020), the use of Android applications in multiple-choice and description-based exams helps improve the efficiency and objectivity of assessment.

Android-based applications for assessment are usually developed with features that allow question bank integration, time tracking, and correction automation for objective questions. This application also supports the principles of fair, valid and

reliable assessment, as long as the network infrastructure and students' digital literacy skills are adequate. In a madrasah environment such as MTsN 1 Buton, this approach is an innovative solution in implementing digital End-of-Year Assessments.

Madrasahs as Islamic educational institutions have their own challenges in facing the digital era. Although institutionally encouraged to adopt technology, there are still obstacles such as limited devices, human resource readiness, and uneven internet access. According to Azra (2012), madrasah modernization requires an approach that is not only technological, but also pedagogical and cultural. The implementation of Android-based assessment in madrasahs, including MTsN 1 Buton, requires a planned strategy, including teacher training, socialization to students and parents, and adequate technical trials. This transformation is not just a matter of changing the exam media, but changing the assessment paradigm to be more adaptive and technology-based, without leaving the Islamic education values that characterize madrasah.

This research offers novelty in the discourse of digitalization of assessment in madrasas by presenting an Android-based implementative study that is implemented in the context of Islamic Religious Education learning evaluation. Different from many previous studies that focus on the application development stage or simulation of digital systems in educational laboratories, this study traces the process of implementing digital assessments directly in a public

madrasah environment that faces geographical challenges and infrastructure limitations. By using MTsN 1 Buton as the research locus, this study makes a strong contextual contribution to the understanding of how technological innovation can be applied adaptively and inclusively in Islamic educational institutions located in non-urban areas.

This study also has a high justification value, considering that assessment is a crucial component in determining the quality and accountability of education. The Android-based assessment approach is not only technologically relevant, but also strategic in improving the efficiency, transparency and accessibility of the learning evaluation process. In the long run, the results of this research have the potential to become a reference in formulating digital transformation policies in madrasas in a more systemic manner, as well as enriching the scientific treasury in the field of Islamic learning technology. Therefore, this research is important not only for the development of educational practices at the micro level, but also for the formulation of macro strategies in strengthening digital-based national assessment systems in religious education.

METHODS

This research uses a qualitative approach with a case study type, which aims to deeply understand the implementation process of Android-based End-of-Year Assessment at MTsN 1 Buton. This approach was chosen to explore the phenomenon in its natural context and provide a holistic understanding of the

dynamics that occur in the madrasah environment during the digital assessment transformation process. The object of this research includes three main groups of informants, namely the head of madrasah, Islamic Religious Education subject teachers, and final grade students at MTsN 1 Buton. The madrasah head is positioned as a policy maker and innovation driver, teachers as implementers of Android-based assessments, and students as end users of the digital assessment system. All three were purposively selected to obtain a comprehensive perspective regarding the implementation of digital assessments in madrasah (Prastomo, 2020; Sunani, 2010) .

Data were collected through in-depth interviews and documentation. Interviews were conducted in a semi-structured manner to allow flexible data collection but still focused on key issues related to the implementation of Android-based assessments. Additional information was obtained through documentation, such as madrasah policies, assessment technical guidelines, end-of-year assessment evaluation results, and screenshots of the digital assessment system used. Data analysis was conducted interactively using the Miles and Huberman model (Prastomo, 2020) which includes three main stages: data reduction, data presentation, and conclusion drawing. Data reduction was done through the process of selecting, simplifying, and organizing raw data into relevant categories. Next, the data was presented in narrative form and thematic matrix to identify patterns of meaning. The final step is to draw provisional conclusions that are tested

continuously throughout the research process, to ensure the validity of the findings (Prastomo, 2020; Sunani, 2010) .

RESULTS AND CONCLUSIONS

This section presents the results of the research and discussion which focuses on two main aspects in accordance with the formulation of the problem that has been set. First, it examines in depth the stages of planning, development, and implementation of Android-based End-of-Year Assessment at MTsN 1 Buton. These stages reflect the internal dynamics of the madrasah in preparing a structured digital assessment, starting from the initial strategy, preparation of questions, utilization of technological devices, to technical implementation in the field. Second, identifying supporting and inhibiting factors in the implementation process of the digital end-of-year assessment. These factors include technical, managerial, and socio-psychological aspects that influence the success or challenges in the implementation of Android-based assessments. The results of the research are presented systematically with a descriptive qualitative approach, to provide a complete picture of the digital transformation process in the madrasah assessment system. Each section in this discussion not only describes the findings in the field, but also analyzes them based on relevant theories and the results of previous studies. Thus, it is hoped that the results of this study will be able to make theoretical and practical contributions to the development of digital assessment models in the madrasah environment.

Planning and Implementation Stages of Android-Based End-of-Year Assessment

The results showed that the implementation of Android-based End-of-Year Assessment at MTsN 1 Buton went through three important stages, namely planning, development, and implementation. All three form a strategic cycle that is interrelated and is the foundation for the successful implementation of digital assessments.

1. Planning Stage

At this stage, the madrasah mapped the needs and readiness of the madrasah for the use of digital technology in conducting end-of-year assessments. Planning activities began with a coordination meeting between the madrasah head, deputy head of curriculum, information technology team, and subject teachers. In this forum, it was agreed that the end-of-year assessment would use an Android-based system as part of the madrasah's digitalization efforts.

The results of interviews with Jurisprudence teachers showed that the planning stages in the implementation of Android-based end-of-year assessments were collaborative and structured. Teachers are not only technical executors, but also play an active role in decision-making from the beginning of planning. Intensive discussions involving teachers in choosing the platform, designing the appropriate question format, and student preparation strategies show that pedagogical and technical aspects are considered equally. This is an important indicator that digital transformation in assessment is not solely technological, but also driven by the professional involvement of educators.

From the students' perspective, the careful planning had a positive impact on their readiness for the digital exam. Simulation of the use of the application and technical socialization before implementation are important factors that build students' confidence. The statement of grade IX students who felt more prepared reflects that the participatory approach in planning has succeeded in creating a sense of security and familiarity with the digital system used. This analysis confirms the importance of multi-stakeholder involvement and practical training in supporting the success of technology-based assessment at the madrasah level.

In addition to interviews with teachers and students, observations made by researchers during the planning stage showed that socialization to students and parents was intensive and structured. The madrasah utilizes various communication channels, such as face-to-face meetings, class WhatsApp groups, and official announcements on the school information board. This step shows a strong commitment from the madrasah to build a shared understanding of the Android-based assessment transformation. The socialization not only explains the technicalities of using the app, but also provides an overview of the benefits, procedures and objectives of this change. The active involvement of parents is an important indicator in supporting the successful implementation of this digital policy.

Planning for the implementation of the Android-based End-of-Year Assessment at MTsN 1 Buton was carried out in a comprehensive and structured manner. The initial step begins with intensive socialization to all students and parents through various communication channels such as face-to-face meetings, class WhatsApp groups, and official school announcements. This socialization aims to build a common understanding of the changes in the assessment system and ensure support from all parties. In addition, the preparation of the exam schedule was done flexibly to anticipate technical constraints, such as limited devices and different internet access among students.

Madrasahs chose to use an Android-based exam application with the main considerations being ease of access, user-friendly interface, and allowing students to use personal devices (BYOD-Bring Your Own Device). This choice is considered more efficient and practical compared to the conventional paper-based exam system. In this planning stage, the availability of student devices was also mapped through initial data collection, as well as strengthening the network infrastructure in the madrasah environment. In addition, an exam simulation was conducted to provide initial experience to students and teachers, as well as to test the stability of the system before the actual implementation of the end-of-year assessment. This shows the readiness of the madrasah in integrating technology effectively in the assessment process.

2. Implementation Stage

The implementation of the Android-based End-of-Year Assessment at MTsN 1 Buton took place in an orderly and organized manner. The exam was carried out in stages using a session system to avoid network traffic congestion that could disrupt the smooth running of the exam. Each student works on questions in their respective classrooms using a personal Android device that has been prepared in advance. Supervising teachers are present in person in each classroom to ensure the implementation goes according to procedures, provide technical guidance if needed, and maintain academic integrity. This approach reflects the madrasah's readiness to deliver a digital assessment system that is adaptive and responsive to technical challenges in the field.

During the implementation of the Android-based end-of-year assessment at MTsN 1 Buton, the madrasah Information Technology team was always on standby to provide direct technical support. They dealt with various obstacles that might arise, such as failed logins, questions that did not open, or errors in the application. To anticipate students who experience device damage or loss, the madrasah has also prepared several backup devices that can be used in turn. The exam application is designed with an automatic storage system for each answer entered by students, as well as providing notifications when the processing time ends, thus minimizing the risk of data loss.

In general, the implementation of the Android-based End-of-Year Assessment at MTsN 1 Buton went smoothly and orderly, although on the first day there were still

some technical challenges such as delays in logging in, applications that had experienced interruptions, and some students who had difficulty accessing questions. However, the madrasah responded quickly through daily evaluations conducted after each exam session. The evaluation results were used to improve the technical implementation in the following sessions. Teachers not only served as supervisors, but also played an active role in recording any obstacles and receiving direct feedback from students. This data then becomes the material for the implementation team's reflection in improving systems and procedures in the following days.

Digital transformation in education not only touches on the aspect of learning, but also extends to the assessment system. The implementation of Android-based End-of-Year Assessment at MTsN 1 Buton is one of the strategic steps that reflects the readiness of educational institutions to adopt technology as an evaluative instrument. Based on the research results, the implementation process is divided into three main stages: planning, development and implementation. These three stages are important foundations that determine the success of digital-based assessment innovation.

In the planning stage, the madrasah collaboratively strategized the implementation of the digital end-of-year assessment. This activity involved the madrasah head, curriculum team, teachers, and IT team to agree on the platform to be used, determine the schedule, and map the devices available to students. This step is in line with Ningsih's (2020) opinion, which emphasizes that planning in the application of educational technology must consider the readiness of human resources, infrastructure, and communication patterns between stakeholders.

The final stage was implementation, where the Android-based end-of-year assessment was run in stages with a session system to avoid network spikes. Although the implementation on the first day experienced some technical problems such as login failure and network instability, the quick response from the madrasah IT team was able to reduce the impact of the disruption. Supervision by teachers was conducted directly in the classroom, while the exam application was equipped with features such as automatic timing and question randomization to maintain assessment fairness. This supports the statement from Arifin & Wahyuni (2022), that the success of e-assessment implementation is largely determined by the flexibility of the system, quick response to obstacles, and active involvement of teachers in the supervision process.

Overall, the two stages carried out by MTsN 1 Buton show a strong synergy between system readiness, human resources, and managerial strategies. This process is proof that with careful planning and cross-functional collaboration, the digitalization of assessment in the madrasah environment can run effectively, efficiently, and oriented towards the future of technology-based education.

Digital transformation in educational assessment is one manifestation of the utilization of information technology to

improve efficiency, objectivity and flexibility in the evaluation of learning outcomes. In the context of MTsN 1 Buton, the implementation of Android-based End-of-Year Assessment shows a complex dynamic between supporting and inhibiting factors that mutually influence the success of the program.

Supporting and Hindering Factors in the Implementation Process of Android-Based End-of-Year Assessment

Implementation of Year-End Assessment. based on Android at MTsN 1 Buton is part of the digital transformation of madrasah in responding to technological developments in the world of education. The implementation of this digital end-of-year assessment certainly cannot be separated from a number of factors that act as supporters and inhibitors. The results revealed that the successes and challenges in this process were influenced by a combination of technical, managerial, cultural, and pedagogical factors.

1. Supporting Factors

Some of the main supporting factors found in the implementation of the Android-based end-of-year assessment include: 1). Leadership Support and Teacher Commitment The madrasah head provides full support for the digitalization of assessments as part of the education quality strengthening program. Teachers' commitment in adapting to technology is also very helpful for smooth implementation, especially in preparing digital questions and accompanying students during the exam. 2). Availability of Information Technology Team. The existence of a competent internal IT team is a key factor. This team assisted in the installation of the exam application, training on its use, and handling technical problems during the implementation of the end-of-year assessment. 3). Student Enthusiasm and Technology Adaptation Most students showed enthusiasm and readiness to use Android devices. They adapted more quickly because they were used to using devices in their daily lives, making digital exams more interesting and efficient. 4). Responsive and Practical Exam System. The exam application used supports randomized questions, time limits, and automatic answer storage. This greatly facilitates the implementation of year-end assessments and speeds up the correction process, especially for objective questions.

2. Inhibiting Factors

Although supported by several aspects, the implementation of Android-based end-of-year assessment also faces a number of challenges that become inhibiting factors, including: 1) Device and Network Limitations Not all students have adequate Android devices. Some use their parents' devices, which have limited battery and memory capacity. In addition, the unstable internet network, both in the madrasah environment and at students' homes, is a serious obstacle; 2) Uneven Digital Literacy. Some students and teachers still have limitations in operating the exam application optimally. Technical errors such as pressing the wrong submit button, forgetting to log in, or not understanding the exam flow often occur at the beginning of the implementation; 3) Lack of Simulation and

Early   Assistance Time constraints meant that exam simulations could not be conducted thoroughly for all classes. As a result, some students felt confused the first time they used the digital exam system; 4) Concerns about Academic Cheating. Since students took the exam through their own devices, teachers found it difficult to ensure students' overall honesty, despite rotating supervision and strict time restrictions.

Madrasahs' Responses and Strategies to Face these Challenges

In facing these obstacles, the madrasah showed an adaptive response. The provision of spare devices, the division of exam sessions, and the presence of an information technology team during the exam are real solutions that are effective. In addition, daily post-exam reflections are conducted by teachers to record obstacles and improve the implementation the following day.

The main supporting factors in the implementation of digital end-of-year assessment include the full support of madrasah leaders, teachers' commitment and readiness, and students' enthusiasm in using technology. This finding is in line with the results of Aini's research (2021), which states that institutional commitment and teacher digital literacy are important foundations in the success of education digital transformation. The availability of a competent internal information technology team also proved to be a crucial element in assisting with technical training and troubleshooting during exams, as mentioned

by Rahman & Aziz (2022), that adequate technical support can accelerate the adoption of digital systems in schools.

In addition, students' enthusiasm in using Android devices shows that this approach has great potential to increase students' participation and convenience in taking the exam. The use of user-friendly applications with question randomization features, automatic time limits, and real-time storage of answers strengthens the efficiency and technical integrity of the assessment. This supports the view of Purwanto et al (2020). which emphasizes the importance of technology compatibility with user characteristics in the implementation of e-assessment.

On the other hand, this study also found a number of inhibiting factors, such as limited devices and internet access, uneven digital literacy, and concerns about potential academic fraud. This indicates that technical aspects and infrastructure readiness are still significant challenges in implementing digital systems in the madrasah environment. As Handayani (2019) points out, infrastructure gaps and digital literacy are often the main obstacles to the integration of educational technology, especially in areas that are not yet fully covered by digital facilities.

This condition is exacerbated by the lack of training or simulation time, which causes some students to feel confused in using the application. The lack of simulation and initial assistance increases the potential for technical problems during the exam. Therefore, training and simulation are important   prerequisites   in   the

implementation of educational technology innovation, as emphasized by Sugiyono (2022).

Nevertheless, MTsN 1 Buton showed an adaptive and solutive managerial response. The madrasah provides backup devices, divides the exam schedule into sessions, and conducts daily evaluations to respond quickly to constraints . This strategy shows that the success of digital transformation in assessment is not only determined by technological readiness, but also by the institution's ability to manage change collaboratively and reflectively.

Considering the overall findings, it can be concluded that the implementation of Android-based end-of-year assessment at MTsN 1 Buton is on a progressive path, although it is still faced with structural and technical challenges. The synergy between commitment, digital literacy and adaptive management is key in ensuring the sustainability of effective digital assessment in the madrasah environment.

CONCLUSIONS

Digital transformation in madrasah assessment at MTsN 1 Buton through the implementation of Android-based End-of-Year Assessment shows that this process has been designed and implemented quite well. The stages of planning, development, and implementation are carried out in a structured manner, involving all elements of the madrasah, and supported by technical guidelines and training for teachers. Key supporting factors include leadership commitment, teacher readiness, and active participation of students and parents, while

constraints such as device limitations and technical glitches are overcome through the support of the information technology team and daily evaluation. Overall, this implementation reflects the madrasah's readiness to adopt technology to improve the quality of assessment in a more efficient and adaptive manner.

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