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CHALLENGES AND SOLUTIONS FOR THE IMPLEMENTATION OF DIGITAL-BASED LEARNING IN MADRASA

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Abstract

This study focuses on the implementation of learning evaluation through the Madrasah e-Learning application during the Covid-19 pandemic at Madrasah Aliyah Negeri in Palopo City. The main objective of this research is to understand how the online learning evaluation process is conducted using the application, as well as to identify the challenges and solutions encountered by teachers, students, and parents during its implementation. This study employs a qualitative approach with a case study design. Data were collected through in-depth interviews with teachers, students, and parents; participant observation during the online learning process; and analysis of relevant documents such as grade reports and learning schedules. Data analysis was conducted thematically by identifying patterns and relationships relevant to the effectiveness of online evaluation, technological readiness, implementation barriers, and parental involvement. The findings indicate that the Madrasah e-Learning application facilitates integrated and automated learning evaluations through features such as Computer-Based Tests (CBT), knowledge assessments, and skills assessments, providing convenience for teachers. However, its effectiveness is highly influenced by the digital literacy readiness of human resources, the availability of adequate internet infrastructure, and the capacity of the application server. Challenges such as limited internet access, reduced application speed, and the need for system updates remain obstacles. The implications of this research recommend improvements in technological infrastructure, continuous digital literacy training, and the establishment of effective feedback mechanisms. Future studies are encouraged to analyze the quantitative impact of the application on learning outcomes, the effectiveness of its evaluation features, and strategies to enhance parental engagement in online learning.

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INTRODUCTION

The rapid advancement of technology has significantly accelerated cross-cultural exchanges among nations (Huang, 2024; Shadiev, et al., 2021; Shadiev, & Huang, 2020). Furthermore, the capacity to produce and utilize technological tools is increasingly seen as a marker of a nation's progress and civilization in the millennial age. This technological development has reshaped human paradigms, induced cultural transformations, and influenced national governance systems, particularly in managerial aspects. In today's digital age, where technology enables instant access to global trends and lifestyles, education has not been exempt from its influence. The Covid-19 pandemic forced educational institutions to adapt rapidly, pushing teachers, students, and parents into digital-based learning environments (Aldhafeeri, & Alotaibi, 2023). As a result, many struggled with the sudden shift, exposing widespread unpreparedness in using digital learning tools.

Schools that aspire to operate at an international standard must prioritize continuous improvements in service quality, student achievement strategies, and learning models. These improvements not only enhance competitiveness but may also contribute to the institution's financial sustainability. A well-articulated school vision that aligns with students' future needs is crucial. High-quality educational services are vital to producing graduates who are academically competent, competitive, and possess strong character (Ali, et al., 2020; Korechkov, 2021). Schools that consistently commit to delivering excellent services will build a strong reputation. The integration of digital systems in

education should thus be part of an ongoing effort to stay aligned with technological progress and improve both student and staff performance.

Given the profound impact of digitalization on economics, behavior, and organizational strategies, schools are expected to enhance the quality of their service delivery (Timotheou, et al., 2023; Mohamed Hashim, et al., 2022; McCarthy, et al., 2023). Technology evolves rapidly, often introducing new systems annually or even semi-annually. To ensure effective and efficient education, program planning must be clear, comprehensive, and integrated with other initiatives to create synergistic outcomes.

As the world enters the era of Industry 4.0 and globalization, human resources play a pivotal role in national development, particularly in the education sector (Tri, et al., 2021; Li, 2024). High-quality human resources, especially in technology, are essential to improving Indonesia's educational standards. A Management Information System (MIS), combining human and machine-based processes, supports operational, managerial, and decision-making functions within educational institutions. Effective MIS implementation relies on several core components; hardware, software, well-organized data, system procedures, and qualified personnel.

School management serves as a cornerstone for delivering educational services and achieving student success. To reach institutional goals, schools must align with educational development guidelines. In today's competitive environment, digitalization plays a critical role in school management (Bucăţa, & Tileagă, 2024; Bygstad, et al., 2022). The provision of timely and accurate information is now indispensable to both institutions and individuals. Digital school management systems-accessible via smartphones or tablets, can significantly improve communication between schools, teachers, parents, and students, thereby increasing efficiency and transparency in operations.

Modern school management must involve all stakeholders, including teachers, administrative staff, parents, students, and the wider community. Their optimal function depends on effective leadership policies and performance (Ciulla, & Ciulla, 2020; Demerouti, & Bakker, 2023). To address educational quality, governments have enacted various policies such as teacher certification, school operational assistance, and the establishment of national education standards (as stipulated in Government Regulation No. 19/2005), which encompass curriculum, processes, staff qualifications, infrastructure, management, assessments, funding, and graduate competencies.

Amid these challenges, digital applications are necessary to enhance academic administration such as grade processing, payments, and enrollment-through mobile platforms like Android. Many schools still rely on manual processes, leading to inefficiencies in administrative reporting, counseling services, and student progress monitoring. Observations at Madrasah Aliyah Negeri Palopo City indicate several issues: the lack of access to reliable digital systems during the pandemic, the absence of a comprehensive MIS that serves all stakeholders, and the unavailability of platforms for parents to monitor students' academic and psychological development.

To address this, a real-time, user-friendly digital system is proposed to help parents track their children's progress in both online and offline learning environments. Integrated messaging features can streamline communication, prevent the spread of sensitive data, and maintain student privacy. For instance, disciplinary records would be accessible only to the respective parents, ensuring confidentiality.

While madrasahs benefit from practical and empirical technological tools, these advancements also present challenges. On one hand, they facilitate educational processes; on the other hand, they risk diminishing students' spiritual values, promoting materialism, individualism, and a detachment from the spiritual dimensions of life.

RESEARCH METHODS

This study employs a qualitative approach using a case study design, aimed at gaining an in-depth understanding of the learning evaluation process through the Madrasah e-Learning application during the Covid-19 pandemic, as well as the challenges and solutions encountered by teachers, students, and parents in its implementation. This approach was chosen because it allows the researcher to explore the meanings, perceptions, and experiences of educational stakeholders within a real and complex context (Xu, & Zammit, 2020).

The units of analysis in this study are teachers, students, and parents who were actively involved in the online learning process using the Madrasah e-Learning application in Madrasah Aliyah Negeri (State Islamic Senior High School) in the city of Palopo. These

units were selected purposively based on the consideration that they are the primary actors in the online learning process who directly experienced changes in the educational system and the implementation of evaluation during the pandemic.

Data collection was carried out using in-depth interviews, participatory observation, and documentation (Kang, & Hwang, 2021). Interviews were conducted with teachers, students, and parents to gain insights into how the learning evaluation process was implemented through the Madrasah e-Learning application, as well as the challenges faced in terms of infrastructure, technological skills, and parental involvement. Participatory observation was conducted during the learning process to directly observe the interaction between teachers and students in using features such as the Computer-Based Test (CBT), knowledge assessment, and skills assessment. Additionally, documentation was collected by gathering documents such as system-generated grade reports, learning schedules, and parental consent letters related to online learning (Maqsudov, et al., 2020; Cindi, 2021).

The data collection process began with coordination with the madrasah authorities to obtain research permission, followed by the selection of key informants based on their roles in the online learning process. Interviews were conducted in stages using semi-structured interview guidelines that allowed for in-depth exploration. Observations were carried out at specific times that coincided with learning or evaluation activities. Documentation was obtained from the madrasah after receiving written consent.

Data analysis was carried out thematically, referring to the interactive model of Miles and Huberman, which includes data reduction, data display, and conclusion drawing (Mezmir, 2020; Monaro, et al., 2022). Interview and observation data were coded and categorized based on key themes such as evaluation effectiveness, technological readiness, implementation barriers, and parental involvement. Each theme was then analyzed to identify patterns and relationships that reflect the dynamics of online learning using the Madrasah e-Learning application. The analysis results were used to explain how digital learning evaluation was conducted, the extent to which learning outcomes were achieved, and how infrastructural and digital literacy challenges affected the effectiveness of the learning process.

Through this method, the study is expected to provide a comprehensive picture of the implementation of e-learning-based evaluation in madrasahs, and contribute to the development of more adaptive and inclusive online learning systems.

FINDINGS AND DISCUSSION

After the learning process is carried out and is still in a series of activities implementing the Madrasah e-learning application, teachers can evaluate their learning to students. Learning evaluation is the process of determining the level of achievement of goals. Learning evaluation aims to collect information that is the basis for measuring the level of progress, development, and learning of students, as well as the effectiveness of teachers in the learning process. Evaluation can provide motivation for teachers and students who can improve their creative thinking process. This is in line with the definition of evaluating, which is the process of preparing consideration materials as the basis for planning preparation (Ayuningsih, & Syafaruddin, 2020; Nurtanto, et al., 2021; Atkin, & Brooks, 2021).

This process includes: setting goals, gathering evidence of growth towards goals, and drawing conclusions. With evaluation, teachers can see and measure the learning methods applied and the results obtained by students. Meanwhile, for students, the results of the evaluation can be a motivation to be more active in their studies.

Evaluation in Madrasah eLearning uses the Computer Based Test (CBT), Knowledge Assessment and Skills Assessment menus. In the CBT menu, teachers can create exams in this menu, both daily exams and Final Semester exams with multiple choice, true/false, matching and essay types. This Knowledge Assessment is based on the Basic Competencies listed in the learning plan. Teachers can create it with an assessment scheme in the form of written, oral or assignment tests (Handayani, et al., 2021; Said, & Muslimah, 2021).

The evaluation of the learning process using Madrasah e-Learning has been integrated between questions, assessments and results automatically which can be seen from the Grade Recap. It is easy and simple for teachers, who usually do it manually, so with Madrasah e-Learning, the system automatically processes their scores. In order to evaluate distance learning, madrasas carry out academic supervision, supervision is the

provision of direction and critical assessment of activities. The task of supervision is a continuous assessment process for teachers. Academic supervision can measure the extent to which learning objectives have been achieved and can analyze the shortcomings of learning activities to find strategies to improve the quality of learning (Yani, et al., 2024; Setyaningsih, & Suchyadi, 2021).

The use of information technology begins with the readiness of human resources, namely teachers and students. Teachers and students are expected to be literate in information technology. The most basic thing is whether all teachers and students have compatible laptops and mobile phones and are able to operate them. These two things (owning and operating facilities) are the main foundations for the sustainability of the learning process using e-learning madrasas. If one of these two things does not complement each other, it will be an obstacle in achieving the goal of online-based learning. In addition to human resources, Madrasah e-learning is learning using infrastructure in the form of an internet network (Hoerudin, et al., 2023; Santosa, & Jazuli, 2022). It is undeniable that the readiness of internet access is urgently needed. The general reality is that the quality of internet access coverage in Indonesia is still uneven and the high cost is an obstacle to Madrasah e-learning learning. The Madrasah e-learning application system can be accessed directly to the central server or the madrasah can create its own madrasah server.

There are many users accessing the Madrasah e-learning application. This will be an obstacle, especially if they use it simultaneously throughout Indonesia (Sihombing, A. & Fatra, 2021; Syaipudin, & Aziz, 2024). Access to the application becomes slow (down), the process of uploading teaching materials or student assignments is also slow due to limited storage capacity. When the Madrasah e-Learning learning process takes place, there is a possibility that the process will be slow to be accessed by teachers and students, so that the learning objectives are not optimally achieved. Not to mention, update the latest version of Madrasah e-Learning. So teachers and students must always download the update system so that it can be used optimally. Things like these are some of the obstacles that must be overcome to achieve learning goals.(Iskandar, 2020)

Educational challenges regarding teachers' readiness to face technological developments must be accompanied by solutions to overcome existing problems. One of the things that must be prepared in facing technology-based education is the preparation of responsive, adaptive and reliable human resources. Therefore, in this discussion, the solution to educational challenges is to prepare teachers to utilize current technology and maximize teachers' ability to use the latest technological equipment. The ability in question is the ability to use technology so that it is able to accompany and teach students by utilizing technology. Having technology skills must also be accompanied by an understanding that technology must be used to obtain positive learning outcomes.

The learning modification referred to in this case is a change in the learning system to adjust to the conditions of the Covid-19 pandemic. Modification does not mean a total change, but rather a change in one part or a few parts only. This is intended to adjust to the conditions of the current outbreak that is spreading which cannot make learning carried out face-to-face. Here are some of the learning modifications referenced;

Online Discussion Learning

Online discussion learning is carried out using applications such as WhatsApp. Online discussion learning is carried out as a form of interaction between teachers and students during the Covid-19 pandemic. And this online discussion learning is a replacement for learning that has been carried out face-to-face.

Online discussions are carried out in groups or also carried out on a large scale between several students or even carried out as a whole in one class. Online discussion learning is not always done every day but is carried out on certain materials that do require students to have discussions to further sharpen their analysis and prioritize students in problem solving.

Online discussions often color learning during the Covid-19 pandemic, but in practice there are still obstacles even though they have been done frequently, such as the inability of students to respond to problems presented by teachers or the inability of students to present arguments to problems raised by teachers in learning. This condition certainly interferes with learning which ultimately leads to suboptimal learning achievement.

Online discussion learning is inevitable because the atmosphere of the Covid-19

outbreak does not allow students to conduct face-to-face learning. And it is also impossible for students to always have to do task-based learning, given the need for students to interact. So the choice of online discussion is inevitable.

Learn Through Online Assignments

Learning with an assignment model is also an alternative to learning during the Covid-19 pandemic. The assignment model is carried out online, starting from instructions for assigning tasks, completing tasks, to collecting and evaluating tasks. The online assignment was carried out as a form of anticipation of the spread of the Covid-19 virus. In addition, assignments are also carried out as a form of learning modification that does not allow teachers and students to meet face-to-face. Learning assignments are given to students in several forms such as multiple-choice, essay tests, or Project class-based assignments. In contrast to online discussion learning, online assignments are carried out almost every time a meeting is held, even if online discussion learning is not possible, learning is transferred to online task-based learning.

Learning With Parental Guidance

Learning during Covid-19 does require parental guidance, without parental guidance it is difficult to do learning, face-to-face learning does not require parental guidance, but in online learning parents have a very important role in helping students. Online learning is also called distance learning because learning is carried out without face-to-face, and teachers are not close to students, so parental guidance is a must. Parental guidance is carried out in various ways such as accompanying children in discussions with teachers, accompanying children in doing tasks given by teachers, assisting children's psychology during online learning, controlling children's emotions during online learning.

Although basically this is not the main task for parents, but with the conditions of the spread of Covid-19, of course, learning modifications like this will choose one of the alternatives to prevent the spread of the Covid-19 virus. But of course, in this mentoring, parents of course work together with teachers, in this case providing input or direction to parents regarding what they should do while accompanying their children to study at home.

Related to online learning, it has an impact on the quality of student learning. Parents with good perceptions or who consider online learning effective certainly have an impact on the quality of learning. Similarly, the perception of parents who think that learning from ineffectiveness certainly has an impact on the poor quality of learning. Parents who consider online learning effective during the Covid-19 pandemic certainly immediately support the learning implemented by educational institutions.

In response to this, Palopo City State Islamic High School provides an alternative to students' parents regarding the learning process. The school invites parents of students before learning at the beginning of the semester to start discussing the learning system that will be implemented for the next semester, in this case the school asks parents to make a statement and sign it regarding the willingness of parents to participate in online learning.

Regarding the online learning system, it is not uncommon for parents to criticize or protest the learning system implemented by the Palopo City State Islamic High School. This condition certainly interferes with the learning process because schools must provide two learning models, parents who agree with face-to-face learning with health protocols then carry out learning according to health protocols, but for parents who do not agree to have to do online learning, of course this condition has an impact on the more difficult work of teachers. In fact, the learning outcomes will be different between students who do face-to-face learning and students who do online learning.

CONCLUSION

Based on the findings of the research on the implementation of learning evaluation through the Madrasah e-Learning application during the Covid-19 pandemic at Madrasah Aliyah Negeri in Palopo City, it can be concluded that this application has facilitated the evaluation process of learning, including the implementation of Computer-Based Tests (CBT), knowledge assessments, and skills assessments in an integrated and automated manner. This convenience was especially appreciated by teachers who previously conducted evaluations manually. However, the effectiveness of this application's

implementation is significantly influenced by the readiness of human resources (teachers and students in terms of technological literacy), the availability of adequate internet infrastructure, and the application server's capacity. Challenges such as limited internet access, decreased application speed due to high user traffic, and the need for regular system updates remain obstacles that must be addressed to ensure the optimal achievement of online learning goals.

The implications of this research provide both specific and general recommendations. Specifically, it is recommended that the madrasah continue to improve its information technology infrastructure, including strengthening internet connectivity and the capacity of the Madrasah e-Learning application server, as well as offering ongoing training for teachers and students to enhance their digital literacy. In addition, an effective feedback mechanism between the school, teachers, students, and parents regarding the use of this application is necessary. Generally, these findings highlight the importance of technological and human resource readiness in implementing online learning systems at various levels of education. For future research, it is recommended to further explore the quantitative impact of e-Learning application usage on student learning outcomes, analyze the effectiveness of various evaluation features within the application, and investigate strategies to enhance parental engagement in the online learning and evaluation process. Further studies could also focus on developing a more adaptive and inclusive e-Learning implementation model, taking into account the diversity of infrastructure conditions and levels of digital literacy in different regions.

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