



Supervision Of The Implementation Of Cloud Technology In Administrative Management Of Islamic Boarding School

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Abstract : This research explores the implementation of cloud technology in administrative management at Pondok Pesantren Nurul Jadid, Jalaluddin Ar-Rumi Region. The use of cloud technology in educational and administrative contexts is crucial for enhancing operational efficiency and service quality. However, Islamic boarding schools often face challenges related to technology infrastructure, data security, and complex system integration. The research methodology employed a qualitative approach with a case study framework. Participants included administrators, treasurers, and managers involved in administrative processes. Data was collected through in-depth interviews, direct observation, and analysis of policy documents and technical evaluations. The findings indicate that the implementation of cloud technology at Pondok Pesantren Nurul Jadid has successfully improved efficiency in data management, accelerated access to information, and enhanced interdepartmental collaboration. Nevertheless, challenges include the need for adequate technology infrastructure and ensured data security. Discussions encompass implications of the findings for policy development and strategic recommendations for educational institutions seeking to adopt cloud technology to enhance administrative quality and efficiency.

Keywords : Cloud Technology, Administrative Management, Islamic Boarding Schools.

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INTRODUCTION

The increasingly rapid development of Information and Communication Technology is encouraging Islamic boarding schools to be more open to technological advances.(Navastara et al., 2020)The importance of effective information management is a crucial factor in maintaining and improving the progress of educational institutions.(Key, nd)In this case, educational institutions are faced with the demand to develop management information systems to increase competitiveness in the education sector.(Chusnul Chotimah et al., 2023).

The use of information technology, especially cloud technology, has become a major driver in digital transformation in various sectors of life, including in the context of education and institutional management.(Irawati et al., 2024). Digital transformation in educational institutions occurs when information technology is used not only to digitize processes, but also to generate new innovations and create added value for the organization.(Khozaini & Mundiri, 2024). So the implementation of this technology not only reduces costs and significantly increases process efficiency, but also improves the ability to make more accurate and efficient decisions through the use of big data and analytics.(Muzakky et al., nd).

However, the reality is that many Islamic boarding schools, including the Nurul Jadid Islamic Boarding School in the Jalaluddin Ar-Rumi region, face significant challenges in managing their finances. These challenges include manual processes that are prone to errors, a lack of transparency and accountability, and limited human resources and technological infrastructure. In this modern era, cloud computing technology offers a highly promising solution to improve the efficiency and effectiveness of Islamic boarding school financial administration.

Biological(Hayati et al., 2021)He stated that the implementation of the Islamic Boarding School Payment Management Information System is expected to resolve all the challenges encountered with the previous system, both in terms of data accuracy and transaction processing speed. Meanwhile, Susyanto(Susyanto, 2022)This shows that in facing the digital era, there is a need for changes in the implementation of systems in Islamic educational institutions towards digital transformation. In addition to core competencies, educators are also required to have supporting qualifications and competencies including: agility, innovation, creativity, anticipation, experimentation, open-mindedness, and networking. Irawati(Irawati et al., 2024)confirmed that there was a significant improvement in operating Google Drive as a digital archive, while the posttest results showed that participants were able to operate Google Drive well.(Jumrah, 2023)Supratman

explained that the administrative management at MTs Al-Ihsan Tanah Grogot was running well in improving the quality of the madrasah.(Supratman, 2023)that understanding of general village administration, population administration, village financial administration, village development administration, and other administration has increased significantly.

The integration of cloud technology into administrative management is an attractive and relevant solution for modernizing critical processes in Islamic boarding schools. By centrally storing data and applications in the cloud, Islamic boarding schools can optimize information management, improve accessibility, and strengthen overall data security. Furthermore, this technology reduces infrastructure costs and accelerates response to daily administrative needs.

The goal of this community service (PkM) is to improve the efficiency and quality of administrative management at the Nurul Jadid Islamic Boarding School through the implementation of cloud technology. We aim to speed up administrative processes and simplify data management by utilizing cloud tools such as Google Sheets and Google Drive. To achieve this goal, we will provide training and technical support to the treasurer and board members of the Islamic boarding school, ensuring they have the necessary skills to effectively utilize new technologies.

METHOD

This program's methodology is designed to provide systematic and holistic support in implementing cloud technology for financial administration management at the Nurul Jadid Islamic Boarding School. The process begins with a needs assessment, in which the PKM team conducts a thorough audit of existing financial administration processes. This step involves identifying the challenges facing the Islamic boarding school and determining the most appropriate cloud technology solutions to address those issues. Once the needs are clarified, the next phase involves training and workshops. During this phase, members of the Islamic boarding school's treasurer team will participate in a series of training sessions designed to introduce cloud technology concepts, teach the use of relevant applications, and share best practices in financial administration management.

Following the training, the program moves on to system implementation. The PKM team will assist with the installation, configuration, and integration of the cloud-based financial administration system with the existing processes at the Islamic boarding school. During this transition period, a mentoring and evaluation phase will be conducted to provide technical support and guidance to treasurer members in operating the new system. Periodic evaluations will be conducted to monitor implementation progress, identify emerging issues, and make necessary adjustments. Finally, reporting and dissemination will

include documentation of the results and lessons learned from the PKM activities, which will be shared with relevant parties through written reports and live presentations. The goal of this phase is to share the experiences and knowledge gained during the program and provide guidance for other institutions that may wish to adopt cloud technology in their administration.

RESULT AND DISCUSSION

Activities This Community Service (PKM) is conducted by postgraduate students at Nurul Jadid University. This activity is not only a student obligation to periodically fulfill the Tri Dharma of Higher Education (TRIDHARMA) for the community each year, but also aims to improve community knowledge and skills. The stages of the Community Service (PKM) are as follows:

1. Planning Stages

Planning is the process of determining the goals or targets to be achieved or the targets to be achieved and determining the paths and resources needed to achieve the goals effectively and efficiently. (Arifudin, 2021) In this case, the planning stage for implementing cloud technology assistance in financial administration management at the Nurul Jadid Islamic Boarding School in the Jalaluddin Ar-Rumi area. This stage involves a series of activities aimed at deeply understanding the challenges faced, formulating clear objectives, and planning appropriate strategies and steps to achieve them. The following are the broader planning stages:

1. Identifying Needs and Challenges

Identifying the needs and challenges faced by the Jalaluddin Ar-Rumi region in managing financial administration. This involved interviews with the regional head, treasurer, and administrator to comprehensively understand the ongoing financial administration process. The identification results revealed several key needs and challenges faced in managing financial administration. From a needs perspective, an integrated financial system capable of managing all financial aspects, from receipts to expenditures, is required, along with several computer units and hardware to support financial applications. Furthermore, members of the treasurer section require regular training on the use of a cloud-enabled financial system. Additional members are needed to handle the increasing workload in the administrative section. A challenge faced is the maintenance of several tools used to operate the cloud within the financial system. This challenge is common among regional administrators, where regular maintenance of facilities and infrastructure is still relatively weak. Another challenge identified is the limited existing technological infrastructure, which is inadequate to support the implementation of a more sophisticated and integrated financial system.

The setting of goals and objectives was carried out by involving all relevant parties, such as the regional head, treasurer, and treasurer members, in discussions to gain a comprehensive perspective and ensure their commitment to achieving the stated objectives. During the discussions, the facilitator and several other involved parties identified the general objective of improving efficiency and accuracy in financial administration. Then, the facilitator and related parties established specific targets, such as increasing the transparency of financial reporting by providing monthly financial reports to all stakeholders, in this case, the guardians of the students.

2. Setting Goals and Objectives

Setting goals and objectives for implementing cloud technology at the Jalaluddin Ar-Rumi Islamic boarding school involved several structured steps to ensure the end result was effective and aligned with the school's needs. These objectives included:

a. Needs Analysis

The needs analysis phase is conducted to understand the challenges and opportunities that exist. This involves the support team, treasurer, and team members.administration. This analysis aims to identify specific needs that can be addressed with cloud technology.

b. Discussion and Brainstorming

Discussions and brainstorming sessions are held, involving the regional head team, treasurer, IT staff, and possibly a technology consultant. These meetings gather ideas and suggestions to determine how cloud technology can be effectively integrated into the administration system.

c. Goal Setting

The main goal-setting stage is carried out. The regional head and treasurer jointly formulate strategic objectives that reflect the desired outcomes of implementing cloud technology, ensuring that these objectives align with the Islamic boarding school's vision and mission.

d. SMART Goal Development

Regional heads, treasurers, administrators, and assistants develop specific, measurable, achievable, relevant, and time-bound goals. These goals must be clear and measurable to assess implementation success.

e. Validation and Approval

At this stage, relevant parties such as the Regional Supervisor verify and approve the goals and objectives to ensure that they are aligned with the overall strategy of the Islamic boarding school.

3. Situational and Environmental Analysis

After establishing the objectives, an in-depth analysis of the situation and environment in the Jalaluddin Ar-Rumi region was conducted. The parties involved

in the situation and environment analysis process, as well as the results of the analysis, were as follows:

Table 1: Parties Involved

Parties Involved	Job Description and Roles
Support Team	Directing and guiding the analysis process. Developing analysis methodologies and ensuring best practices are followed.
Treasurer	Provides Islamic boarding school financial data, including budgets, financial reports, and potential investment constraints.
Administrator	Analyze existing technology infrastructure, including hardware, software, and communications networks.
Regional Head	Provide strategic perspective, ensure that the analysis is aligned with the vision and mission of the Islamic boarding school, and provide final approval.

Table 2: Results of Situational and Environmental Analysis

Aspect	Description	Findings
Technology Infrastructure	Evaluation of hardware, software, and communication networks in Islamic boarding schools.	1. Hardware: Computers and servers are outdated and need updating. 2. Software: Manual accounting system that needs upgrading. 3. Network: Internet connection is slow and unstable.
Human Resources	Staff ability to use information technology and the necessary training needs.	1. Skills: Administrative staff have basic computer skills, but lack experience with cloud technologies. 2. Training: Training on new cloud systems and software is required.
Financial Condition	The financial condition of the Islamic boarding school and the ability of the surrounding	1. Islamic Boarding School Budget: Limited for investment in new technology.

	community to support technology investment.	2. Community Support: Limited external financial support, with other more pressing priorities.
Community Needs	The needs of the surrounding community can influence support and adoption of technology.	1. Access to Education: The need for access to technology education in society. 2. Support: Limited support from the community due to different priorities.

4. Preparation of Work Plan

Based on the results of the situation and needs analysis that has been conducted, the next step is to prepare a detailed work plan. The work plan is prepared by the Regional Head and treasurer who are discussed with the deputy supervisor, which is then submitted to the regional supervisor for approval. In supporting the implementation of cloud technology in administrative management in the Jalaluddin Ar-Rumi Region of Nurul Jadid Islamic Boarding School, PKM facilitators have an important role in ensuring that this program runs effectively. The following is the PKM facilitator work plan specifically for the program of implementing cloud technology in administrative management:

Table 3: Work Program

CATEGORY	PROGRAM	JOB DESCRIPTION	SUCCESS INDICATORS
Implementation Preparation	Cloud Technology Socialization	1. Hold orientation sessions regarding the benefits and use of cloud technology for staff and treasurers.	1. Participants understand the benefits of cloud technology. 2. Increased interest in the use of cloud technologies
	System Requirements Analysis	1. Identifying the specific needs of Islamic boarding schools related to	3. System requirements are clearly identified. 4. The required data is

		administrative management. 2. Collecting data and feedback.	collected completely.
	Technology Selection and Procurement	1. Develop technical specifications and select a cloud service provider. 2. Manage technology procurement.	3. Cloud technology is selected according to needs. 4. Procurement was carried out on time.
Implementation and Training	Cloud Technology User Training	1. Organize training for staff and treasurers on the use of cloud systems. 2. Provide materials and guidance.	3. All participants followed the training well. 4. Knowledge of using cloud technology increases.
	Cloud System Implementation	1. Accompanying the process of implementing cloud technology in Islamic boarding schools. 2. Ensure the system runs smoothly.	3. The cloud system is installed and working properly. 4. Technical issues were resolved quickly.
	Monitoring and Support	1. Monitor cloud system usage and provide technical support if needed.	3. Effective use of cloud systems. 4. Positive feedback and issues resolved well.

		2. Collecting feedback.	
Evaluation and Improvement	Cloud System Performance Evaluation	1. Conduct an evaluation of the cloud system performance after several months. 2. Compile an evaluation report.	3. Cloud system performance meets expectations. 4. Evaluation reports are prepared and communicated.
	System Improvements and Adjustments	1. Identify areas for system improvement. 2. Make adjustments and improvements based on evaluation.	3. System improvements are carried out effectively. 4. Adjustments address existing problems.
	Documentation and Final Report	1. Compile final documentation on cloud system implementation . 2. Compile the final report of the PKM program.	3. Complete and structured documentation . 4. The final report was accepted and positively assessed by the relevant parties.

5. Identifying Appropriate Cloud Technologies

As part of the planning process, it's important to identify cloud technologies that align with the needs and capabilities of the Islamic boarding school. This includes considering various factors such as the scale of the Islamic boarding school, available budget, feature requirements, as well as the ease of use and technical support available from the cloud service provider. Examples of easy-to-use cloud technologies include Google Sheets, Google Drive, and Google Forms.

- a. Google Drive is a cloud storage service that allows users to store, share, and manage documents online. Google Drive offers flexible storage capacity and can be accessed from a variety of devices.
- b. Google Sheets is a spreadsheet application that allows real-time creation, editing, and collaboration on spreadsheet documents. It's especially useful for managing financial data, reporting, and analysis.
- c. Google Forms is a tool for creating online forms and surveys. It's ideal for collecting student data, such as registration, feedback, or financial surveys.

6. Communication and Education Preparation

The final stage in planning is preparing communication and education for all parties involved. This includes communicating the mentoring plan to the treasurer, the financial administration treasurer, and the IT team. Furthermore, educational preparation is also carried out to prepare the financial administration treasurer for changes and develop new skills needed to utilize cloud technology. Materials that can be used in preparation:

a) Presentation and Communication Materials:

Presentation materials containing information on the benefits of cloud technology, implementation plans, and its impact on financial administration. These materials were used in meetings with Islamic boarding school administrators and relevant parties to ensure a shared understanding of the project.

b) Video Tutorial:

A video demonstrating how to use the cloud system, including key features, data entry, and report generation. This video is useful for visualizing and better understanding the application's usage.

c) Training Schedule and Consultation Sessions:

A schedule includes training times and locations, as well as consultation sessions to provide additional support. This schedule aids in planning and ensures that all parties can attend relevant sessions.

Figure 1: SocializationCloud Technology



2. Implementation Stages

After thorough planning, the next step is implementation. Organizing is the ability of management to motivate, direct, communicate, and influence subordinates. (Jamrizal, 2022). Assistance with the implementation of cloud technology in financial administration management in the Jalaluddin Ar-Rumi region. This implementation phase includes various activities carried out systematically and coordinated to ensure the smooth implementation of cloud technology and achieve the stated objectives. The following is a detailed description of the broad implementation phases:

1. Technology Infrastructure Preparation

The first step is to identify in detail the hardware and software requirements required by the treasurer. This includes the type and number of computers, servers, network devices such as routers and switches, and the software to be used. The technical specifications of each device are formulated based on operational needs and compatibility with the cloud system to be implemented. Based on the identified needs, the treasurer and the administrator develop a procurement budget that includes estimated costs for each type of hardware and software, as well as additional costs such as installation and training.

Once the budget and requirements specifications are prepared, these documents are submitted to the regional supervisor for approval. The regional supervisor reviews the procurement plan to ensure that the expenditure aligns with the Islamic boarding school's strategy and financial capabilities. Approval from the regional supervisor also includes confirmation that the procurement aligns with the goal of improving the efficiency and accuracy of financial administration. After obtaining approval, the next step is to select a vendor to provide the hardware and software. The vendor position in this region is entrusted directly by the regional supervisor, Mr. Badrud Tamam. The treasurer evaluates the bids based on predetermined criteria, such as price, quality, and after-sales service.

Installation and Configuration

Once the equipment procurement is complete, the next step is installation and configuration. The technical team will install the necessary hardware and software, as well as configure the network system to ensure it is ready to access and use cloud services. This also includes network security settings to protect data from unauthorized access.

2. Training and Provisioning

The next stage after hardware and software procurement was training and provision of training to financial administration treasurer members in the Jalaluddin Ar-rumi region. This training was led directly by a mentor, ensuring that all treasurer members understood and could use cloud technology effectively.

The training began with an introduction to the basic concepts of cloud technology for members of the Islamic boarding school's financial administration

treasurers. In this session, the mentor explained the basics of cloud computing, how this technology works, and the benefits it can provide to streamline financial administration systems. This basic understanding is essential for treasurers to appreciate the potential and function of cloud technology in improving the efficiency and accuracy of financial management.

After an introduction to the basic concepts, the next step is training on how to use the selected cloud application. The mentor teaches the financial administration treasurer members how to use the application through practical sessions involving simulations of its use in real-world scenarios. Treasurer members are trained to enter financial data and generate reports using cloud applications. Mentors provide concrete examples to ensure treasurer members can apply the knowledge gained to their daily tasks. The training also includes step-by-step guides, tips, and tricks for optimizing the use of cloud applications.

In addition to initial training, ongoing coaching is also essential. Mentors provide ongoing support to help treasurer members address any issues that may arise while using cloud technology. This coaching includes regular consultation sessions, workshops to deepen knowledge and skills, and ongoing technical support. Mentors ensure that treasurer members have access to the resources and assistance they need to maximize cloud technology.

3. System Implementation

a. Data Migration

Before the new system can be deployed, the region's existing financial data needs to be migrated to the cloud. This data migration process must be carried out meticulously to ensure that all critical data is transferred correctly and that nothing is lost or corrupted. Data backups should also be performed as a precaution.

b. Integration with Existing Systems

If the Islamic boarding school already has another management system running, integration between the cloud system and the existing system is necessary. This integration aims to ensure that all data and processes run smoothly without duplication or inconsistencies in information.

c. Trial (simulation) and Adjustment

After the migration and integration are complete, a comprehensive system trial is conducted. The assistants try to involve all treasurer members and the treasurer himself in the cloud system trial, including data input, data processing, and report output. During the trial, the treasurer and his members will work together to identify and fix any obstacles or issues that arise. The trial is being conducted by the Jalaluddin Ar-Rumi IT team.

Figure 2: Cloud Technology Training with IT Team



3. Evaluation and Monitoring Stages

Evaluation is the final part which is important to carry out to find out the progress of an institution. (Setyaningsih, 2022) Evaluation and monitoring are crucial stages in assisting the implementation of cloud technology in financial administration management at the Nurul Jadid Islamic Boarding School in the Jalaluddin Ar-Rumi area. These stages aim to ensure that the implemented system is running smoothly, achieving its stated goals, and positively impacting the Islamic boarding school. The following is a detailed description of the evaluation and monitoring stages in general:

1. System Usage Monitoring

a. Daily Monitoring

After the cloud system is implemented, the first step in monitoring is conducting daily system usage. This monitoring involves checking user activity, ensuring that all system features are being used as planned, and identifying any potential issues. The Islamic boarding school's IT team, with support from the support team, is responsible for carrying out this daily monitoring.

Daily monitoring results indicate that treasurer members involved in operating the cloud system remain confused due to their lack of experience. Some identified issues include errors in entering financial data, difficulty navigating the application interface, and confusion in generating accurate financial reports. This significantly impacts the effectiveness and efficiency of student financial administration services. Many staff members spend more time than necessary completing administrative tasks, resulting in delays in financial reporting and student service delivery.

To address this issue, several solutions are needed, such as conducting hands-on workshops that provide more detailed explanations and intensive training on using specific cloud system features. Furthermore, it's important to

implement a mentoring system where staff with more experience in cloud system use can assist their colleagues who are still experiencing difficulties. These mentors can provide hands-on guidance, tips, and tricks based on their own experience. This will not only accelerate the learning process but also build confidence among staff.

System Performance Monitoring

In addition to user activity, system performance monitoring is also crucial. This includes checking server performance, access speed, and cloud service availability. If there are any indications of decreased performance or system disruptions, corrective action can be taken immediately to prevent further impact.

2. Data Collection and Feedback

a. User Survey

One method for gathering feedback is through user surveys. These surveys are designed to obtain input from members of the financial administration treasurer and other involved users regarding their experiences using the cloud system. Questions in the survey can cover aspects of ease of use, system reliability, and overall satisfaction.

b. Interviews and Group Discussions

In addition to surveys, in-depth interviews and focus groups can also be conducted to gain deeper insights. These interviews involve representatives from various financial administration departments to understand the challenges they face and provide suggestions for improvement. Focus groups can also provide a forum for sharing experiences and solutions to problems encountered.

3. Data Analysis and Performance Assessment

a. Evaluation of the Set Goals

Data collected through monitoring and feedback is then analyzed to evaluate the achievement of the objectives established in the planning stage. This assessment includes measuring key performance indicators such as process efficiency, financial data accuracy, and reporting transparency.

b. Quantitative and Qualitative Analysis

Data analysis was conducted both quantitatively and qualitatively. Quantitative analysis involved measuring performance metrics such as the time required to complete administrative tasks, the number of errors in data input, and the frequency of use of certain features. Qualitative analysis involved assessing user feedback regarding their satisfaction with and perceptions of the cloud system.

4. Problem Identification and Solutions

a. Identifying Key Problems

From the data analysis, key issues hindering optimal use of cloud systems were identified. These issues could be technical, such as software bugs, or non-technical, such as a lack of user skills in using the system.

b. Solution Development and Recommendations

Based on the identified issues, the support team collaborates with the Islamic boarding school to develop solutions and recommendations for improvement. These solutions could include software updates, additional training for treasurers, or network infrastructure improvements. The recommendations also include preventative measures to prevent similar issues in the future.

5. Implementation of Improvements

a. Action Plan

Once solutions and recommendations have been developed, the next step is to develop an action plan for implementing the improvements. This action plan includes the concrete steps to be taken, a schedule for implementation, and the parties responsible for each step.

b. Implementation of Improvements

Improvements are then implemented according to the established action plan. This could include updating the cloud system, adding new features, fixing bugs, or retraining financial administration treasurers. Throughout the improvement process, ongoing monitoring is conducted to ensure that the improvements are running smoothly and delivering the desired results.

6. Re-evaluation and Closure

a. Re-evaluation

After improvements are implemented, a re-evaluation is conducted to assess the effectiveness of the implemented solutions. This re-evaluation includes checking system performance after improvements, re-measuring key performance indicators, and gathering user feedback on perceived changes.

b. Documentation and Reporting

The entire evaluation and monitoring process, including analysis results, implemented solutions, and re-evaluation results, is well documented. This documentation serves as a reference for future system management and as reporting material to Islamic boarding school leaders and other stakeholders.

7. Closing of the Evaluation Phase

The evaluation phase concludes with the preparation of a final report that encompasses all findings, analysis, and results from the evaluation process. This report is submitted to the Islamic boarding school leadership and used as a basis for strategic decision-making regarding cloud-based financial administration.

Figure 3: Cloud Technology Assistance Evaluation

4. Planning Results



1. Needs Analysis

a. Initial Survey

The first step in planning is to conduct an initial survey. According to Cohen and Nomion in Darmadi (2014), survey research is a research activity that collects data at a certain time which is carried out with three important objectives, namely: a) Describing the natural conditions that exist at that time, b) Identifying the current conditions in a measurable way so that they can be compared, and c) Determining the relationship of something that exists between specific events.(Megawati & Daryanto, 2022)The survey results show that the administrative system used in the Jalaluddin Ar-Rumi area was initially manual. Recording was done physically in ledgers and paper documents, which required extra time and effort. In terms of financial administration, transaction recording and financial reporting were also done manually, which was highly error-prone and required considerable time to compile reports.

b. Interview and Discussion

Paulo Freire considered interviews and discussions to be essential tools in a dialogical and egalitarian educational process. According to Freire, these interactions should allow both interviewer and interviewee to actively participate in the construction of knowledge through reciprocal conversation. Freire emphasized the importance of respect and equality in communication, where all participants are valued for their experiences and perspectives. In interviews and discussions, this principle encourages reflective and critical exploration of experiences and social contexts, enabling participants to think more deeply and identify ways to address relevant social or political issues.(Aimar & Azwar, 2024)The support team conducted interviews with regional heads, financial managers (treasurers), and members of the administrative treasurer team to gain deeper insights. These interviews revealed concerns about adapting to new technology, but also enthusiasm and support

from managers for modernizing the financial administration system. Treasurers also recognized that modernizing the financial administration system would facilitate more transparent and accurate budget management.

c. Infrastructure Evaluation

The Balanced Scorecard, introduced by Kaplan and Norton, measures organizational performance from multiple perspectives, including IT infrastructure. In infrastructure evaluation, this approach helps assess how well the infrastructure supports organizational goals and improves overall performance.(Andari, 2016)An evaluation of the technology infrastructure shows that the Islamic boarding school has several computers with adequate basic specifications. However, the existing internet network still needs to be improved to support optimal use of cloud technology. This infrastructure must be able to support the use of cloud applications for general administration and, in particular, financial administration.

2. Preparation of Implementation Plan

The main goal of this program is to improve administrative efficiency and accuracy at Islamic boarding schools, including financial administration. Specific objectives include improving the information technology skills of administrative treasurers, migrating data to a cloud system, and reducing the time required to complete administrative tasks. For financial administration, the primary goal is to create a transparent and accurate financial recording system and facilitate the preparation of financial reports.

3. Cloud Technology Selection

Marc Benioff, stated, "Cloud computing is about more flexibility and less management." This shows how cloud computing can simplify the management of financial data and applications.(Anggeriana et al., 2011)After considering various options, we decided to use Google Workspace, specifically Google Sheets and Google Drive, for general administration and financial management. The reason for choosing this was its flexibility, ease of integration with various applications, and strong support for educational institutions.

4. Budget Planning

The budget prepared includes Google Workspace subscription fees, internet network upgrades (non-intranet), and consumption costs and training support tools for administrative treasurer members. In this budget planning, the theory *Cost-Benefit Analysis*(Cost-Benefit Analysis) is applied to evaluate the costs involved in the context of the benefits to be gained.(Prihandrijanti et al., 2008)This theory helps in identifying and evaluating direct costs, such as subscription and training fees, as well as the potential benefits expected from implementing cloud technology, such as increased efficiency and accuracy in managing financial administration.

The implementation schedule is divided into three main phases: training treasurer members, installing and configuring the cloud system, and implementing and using it with intensive support for the first three months. For financial administration, the implementation schedule includes additional training in the use of the system. Google Sheets for financial record keeping and Google Forms for financial data collection.

5. Implementation Results

1. Training and Capacity Development

a. Cloud Technology Basic Training

The first training provided was basic cloud technology. The material covered an introduction to cloud computing concepts and how to access and use Google Workspace applications. All members of the administrative treasurer team attended the training and received a very positive response. Participants began to understand the basics of cloud technology and how its use can improve their work efficiency.

b. Specific Application Training

The next training focused on specific applications such as Google Docs, Google Sheets, and Google Drive. This training was more in-depth and technical, helping administrative treasurer members understand how to use these applications for daily tasks such as document management, reporting, and data storage. Participants demonstrated significant skill improvements after this training.

c. Financial Administration Training

Specifically for financial administration, additional training was provided on using Google Sheets for recording financial transactions and generating financial reports. Financial administration treasurers were trained to create and manage complex spreadsheets, including using formulas for automated calculations and creating graphs for data visualization. Google Forms was also taught for use in financial data collection, such as expense submissions and donation data collection.

d. Practical Workshop: To ensure a solid understanding, a practical workshop was held where participants could directly put what they had learned into practice. They were trained to manage documents and data online, create spreadsheets, and organize folders and files in Google Drive. This workshop helped strengthen their skills and ensure they were ready to implement the new system. A dedicated workshop for financial administration was also held, where participants could practice recording financial transactions and preparing reports firsthand.

2. Installation and Configuration

a. Data Migration

The next step was migrating data from the manual system to the cloud. This process involved uploading important documents, student data, financial records, and other information to Google Drive. A support team helped ensure all data was uploaded securely and properly organized.

b. System Configuration

After the data has been successfully migrated, the cloud system is configured according to the needs of the Islamic boarding school. This includes setting access rights, where only authorized parties can...Authorized personnel can access sensitive information. Data security settings have also been tightened to ensure student data and other information are properly protected. For financial administration, specific configurations are implemented in Google Sheets, including the creation of templates for recording transactions and financial reports.

c. System Testing: Before the cloud system was fully implemented, a trial was conducted to ensure all functions were working properly. Some adjustments were made based on feedback from the administrative treasurer. Overall, the system functioned well and was ready for full use. A specific trial was also conducted for financial administration, ensuring that the financial recording and reporting system was running smoothly and as needed.

3. Implementation and Use

a. Assistance in Use

The cloud system implementation was carried out by providing intensive mentoring to administrative treasurers for the first three months. This mentoring ensured a smooth transition and assisted treasurers in overcoming any technical challenges that might arise.

b. Technical Problem Solution

During the initial phase of use, some technical issues arose, such as difficulty accessing the internet at certain times. These issues were resolved by upgrading the internet network and providing additional training as needed.

c. Initial Monitoring

The use of the cloud system is being closely monitored to ensure there are no major issues and the system is running according to plan. Initial monitoring indicates that the administrative treasurer is becoming more familiar with the new system and that the efficiency of administrative tasks has increased. For financial administration, initial monitoring indicates that the treasurer is effectively using Google Sheets and Google Forms, and that financial reports can be prepared more quickly and accurately.

6. Monitoring and Evaluation Results

1. Periodic Evaluation

a. Feedback Collection

Feedback was gathered from administrative treasurer members regarding their experience with the new system. The majority of treasurers stated that they felt more efficient and that their work was easier with the cloud system. The training provided was also deemed very helpful in understanding and using the new technology. Financial administration treasurer members provided positive feedback regarding the ease of use of Google Sheets and Google Forms for financial recording and reporting.

b. Performance assessment

The performance of the cloud system was assessed based on established success indicators. The assessment results showed that using the cloud system reduced the time required for administrative tasks by up to 30%. Furthermore, data accuracy improved due to a reduction in manual errors. For financial administration, the assessment results showed that the time required to prepare financial reports was significantly reduced, and report accuracy increased.

c. Identifying Constraints

Some challenges identified during implementation included minor technical issues and the need for additional training on using certain Google Workspace features. These challenges were quickly resolved and did not disrupt overall operations. For financial administration, challenges related to the complexity of formulas in Google Sheets were addressed through additional training.

2. Continuous Monitoring

a. System Performance Monitoring

Cloud system performance is monitored continuously to detect and resolve potential technical issues. Continuous monitoring ensures the system continues to function properly and delivers the expected benefits. In terms of financial administration, continuous monitoring helps ensure accurate and transparent financial records.

b. Monthly Review

Monthly reviews were held with the treasurer administration team to discuss progress, challenges, and accomplishments. During the reviews, the treasurer administration team demonstrated increased confidence and skills in using the cloud system. Several suggestions for further improvement were also received and acted upon. The treasurer administration team reported that they were becoming more familiar with Google Sheets and felt more confident in preparing financial reports.

c. Sustainable Development

Based on needs that emerge during monthly reviews, additional training is provided. Furthermore, system updates are conducted in line with technological developments and the needs of the Islamic boarding school.

Continuous development ensures that administrative treasurer members are always prepared and skilled in using cloud technology.

3. Final Report and Recommendations

a. Implementation Summary

The final report presents a summary of all implementation stages, including activities undertaken, results achieved, and challenges encountered. The program successfully achieved its primary objective of improving administrative efficiency and accuracy at the Nurul Jadid Islamic Boarding School.

b. Success Analysis

Analysis shows that the program successfully improved the information technology skills of administrative treasurer members, successfully implemented a cloud system, and increased administrative management efficiency. Success indicators demonstrated significant improvements in various operational aspects. In financial administration, results demonstrated increased transparency, accuracy, and efficiency in financial recording and reporting.

7. Theoretical Structure of the Mentoring Process and Results

1. Kurt Lewin's Theory of Change Management

Lewin's model theory is an early fundamental model of planned change by explaining the forces of struggle to maintain the status quo and pushing for change.(Sa'idu, 2021). The analogy of Lewin's theory in change management as a block process to be formed as desired, it needs to be melted first (Unfreeze), then put into a mold according to the desired shape (Change) and frozen again into a different block.

In implementing the cloud system in the Jalaluddin Ar-Rumi region, the process begins with the stage *unfreeze*, where the support team conducts initial surveys and interviews to assess readiness and resistance to new technology, and conducts outreach to alleviate concerns. In the change phase, implementation is carried out through intensive training that introduces Google Workspace, including Google Sheets and Google Drive, with opportunities for participants to practice directly in the context of their work. Finally, in the refreeze phase, new procedures are implemented and the system is monitored and evaluated periodically to ensure acceptance and consistent use in day-to-day administration.

Thus, changes in the administrative system were well-received, reducing resistance to new technology and integrating the new system into the Islamic boarding school's administrative routine. The use of new technology became part of the established operational norms.

2. Information Technology Theory (Technology Acceptance Model)

Fred D. Davis (1989) assumes that the Technology Acceptance Model originates from consumer behavior theory, which argues that individual acceptance

of technology is influenced by two variables, namely perceived usefulness and perceived ease of use. Davis suggests that a person's acceptance of technology is influenced by two constructs, namely perceived ease of use and perceived usefulness.(Ichwan, 2020)As a theory, TAM is used to determine the level of acceptance of information systems by using a behavioral approach to examine the process of accepting information technology.(Fahlevi & Dewi, 2020).

In implementing the cloud system in the Jalaluddin Ar-Rumi Region, the main focus was on ease of use and the benefits of the new technology. Training focused on the use of Google Sheets and Google Drive, with demonstrations and practical sessions that help members become comfortable and familiar with the application interface. To enhance the perceived benefits, the training also includes clear examples and case studies that demonstrate how Google Workspace improves administrative efficiency and financial reporting accuracy, encouraging participants to quickly adopt and effectively utilize new technologies.

Adoption of cloud technology was rapid and smooth, as Islamic boarding school members found the new technology easy to use and very useful in their administrative tasks. This positive acceptance of the new technology contributed to its effective and efficient use.

3. Adult Learning Theory (Andragogy)

Malcolm Knowles was the first person to make the term “andragogy” widely used among adult educators in North America in 1968. Malcolm Knowles explained that andragogy is an attempt to develop a theory specifically intended for the learning or teaching of adults. Malcolm Knowles also emphasized that adults can be independent and are expected to take responsibility for their own decisions.(Dewi & Primayana, 2021).

The training materials are tailored to the needs of Islamic boarding school administration and focus on practical Google Workspace applications directly relevant to the daily work of treasurer members. The training uses case studies and scenarios based on members' real-life experiences in financial and general administration, enabling participants to directly apply what they learn in their own context. This approach makes the training more relevant and effective, accelerates the mastery of new technologies by Islamic boarding school members, and increases the success of technology adoption.

4. Evaluation and Monitoring Theory

Kirkpatrick evaluation is a classic evaluation framework for assessing the effectiveness of training in organizations. Therefore, the Kirkpatrick evaluation model is highly suitable for evaluating training. In this model, training program evaluation is divided into four levels: reaction, learning, behavior, and outcomes. Each level of evaluation has its own tools and varying degrees of difficulty in

implementation.(Sari, 2021). Evaluation of competency development programs using the Kirkpatrick Model can provide feedback on training effectiveness that can be used to improve previous designs.(Susanty, 2022)

Training evaluation involves several key aspects. Reaction is measured by gathering feedback from participants to assess their satisfaction with the materials and methods used. Learning is assessed through pre- and post-training tests and evaluations to gauge improvements in participants' skills and knowledge. Behavior is monitored by observing how new skills are applied in daily administration to understand the practical implementation of new technologies. Finally, results are evaluated by assessing the impact of new technology implementation on administrative efficiency and financial reporting accuracy.

Evaluations showed significant improvements in participant satisfaction, skills, and adoption of new technologies. Positive impacts were seen on the efficiency and accuracy of financial administration, as well as a reduction in the time required to complete administrative tasks.

CONCLUSION

Based on guidance on the implementation of cloud technology in administrative management at the Nurul Jadid Islamic Boarding School in the Jalaluddin Ar-Rumi area, it can be concluded that the use of this technology has had a significant positive impact. Cloud technology improves efficiency in data management, accelerates access to information, and enables more effective collaboration between departments. However, the implementation process is not without challenges, such as the need for adequate technological infrastructure, guaranteed data security, and complex integration with existing systems.

This study highlights the importance of a deep understanding of Islamic boarding schools' internal needs and dynamics in selecting, implementing, and managing cloud technology. By considering the challenges faced, such as the need for treasurer training and security risk management, Islamic boarding schools can take strategic steps to optimize the benefits of this technology in improving the efficiency and quality of administrative services.

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