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ICT-BASED LEARNING MANAGEMENT AT AL-HIKMAH INTEGRATED ISLAMIC HIGH SCHOOL, MAROS DISTRICT

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Abstract

This study is motivated by the importance of technology-based learning management in the digital era, which presents challenges for schools in integrating ICT. The aim of this research is to analyze the planning, implementation, and evaluation of technology-based learning management at SMAS Islam Terpadu Al-Hikmah Maros Regency. This research uses a descriptive qualitative approach to illustrate the application of technology-based learning management at the school. Data were collected through observations, interviews, and documentation involving school principals, vice principals, teachers, staff, and students. The data were analyzed through reduction, presentation, and conclusion drawing. The results show that planning is conducted by identifying technological needs, planning learning strategies that integrate ICT, and developing ICT infrastructure, including devices and networks. Implementation involves infrastructure, using digital platforms, and providing training teachers to optimize technology in learning, including ICT-based exams. Evaluation is carried out through classroom observations, analysis of student learning outcomes, and evaluation meetings to gather feedback and formulate follow-up actions. In conclusion, this study contributes to the development of ICT-based education management, with the implication that school principals need to support technology development and training for educators, educators must be creative in using ICT, students need to be more independent, and parents are expected to support by providing devices and participating in school activities.
Keywords:ICT-based Learning Management, ICT Management, ICT-based education.

Abstrak

Penelitian ini dilatarbelakangi oleh pentingnya pengelolaan pembelajaran berbasis TIK di era digital, yang menjadi tantangan bagi sekolah dalam mengintegrasikan TIK. Tujuan penelitian ini adalah untuk menganalisis perencanaan, implementasi, dan evaluasi manajemen pembelajaran berbasis TIK di SMAS Islam Terpadu Al-Hikmah Kabupaten Maros. Penelitian ini menggunakan pendekatan kualitatif deskriptif untuk menggambarkan penerapan manajemen pembelajaran berbasis TIK di sekolah tersebut. Data diperoleh melalui observasi, wawancara, dan dokumentasi yang melibatkan kepala sekolah, wakil kepala sekolah, guru, staf, dan siswa. Data dianalisis melalui reduksi, penyajian, dan penarikan kesimpulan. Hasil penelitian menunjukkan bahwa perencanaan dilakukan dengan mengidentifikasi kebutuhan TIK, merencanakan strategi pembelajaran yang mengintegrasikan TIK, serta mengembangkan infrastruktur TIK yang meliputi perangkat dan jaringan. Implementasi mencakup penyediaan infrastruktur, penggunaan platform digital, dan pelatihan guru untuk memaksimalkan TIK dalam pembelajaran, termasuk ujian berbasis TIK. Evaluasi dilakukan melalui observasi kelas, analisis hasil belajar siswa, serta pertemuan evaluasi untuk mengumpulkan umpan balik dan merumuskan tindak lanjut. Kesimpulannya, penelitian ini memberikan kontribusi terhadap pengembangan manajemen pendidikan berbasis TIK, dengan implikasi bahwa kepala sekolah perlu mendukung pengembangan teknologi dan pelatihan bagi pendidik, pendidik harus kreatif memanfaatkan TIK, siswa harus lebih mandiri, dan orang tua perlu mendukung dengan menyediakan perangkat serta berpartisipasi dalam kegiatan sekolah.
Kata kunci: Manajemen Pembelajaran, Manajemen TIK, Pembelajaran Berbasis TIK.

INTRODUCTION

The application of technology in education has become very important in this digital era. Technology has not only revolutionized the way we work, but also profoundly changed the world of education. The use of technology in learning provides an opportunity to create more diverse, effective, and easily accessible educational resources. At SMAS IT Al-Hikmah Maros, the implementation of Information and Communication Technology (ICT)-based learning policies is a strategic step to overcome the challenges of education in the 21st century.

According to several studies, technological developments in the 20th century have had a significant impact on the world of education. Educators are now required to master technology and develop learning media that are not only effective in improving student understanding, but also relevant to the needs of the digital world. This is supported by Prensky's view that the digital generation, which are today's students, need a new approach to learning that utilizes technology to increase the appeal and effectiveness of teaching. Therefore, students need to be equipped with the skills to use technology wisely and effectively.[1]

Digital technology has begun to be used in educational institutions as an information tool and learning tool.[2] Thus, Educational Technology is not only the result of education, but also serves to enrich and support the learning process itself. Educational Technology focuses on the use of technology to plan, implement, and evaluate teaching activities by utilizing available human and technical resources.

More specifically, according to Mayer, the development of technology-based learning media can improve students' understanding in a more interactive and in-depth way. In this context, Educational Technology aims to create a more effective and efficient learning system by utilizing various technologies, such as multimedia, online learning platforms, and educational applications.[3]

The importance of improving the quality of education is in line with the need to improve the intelligence of students. Good education should not only focus on mastering knowledge, but also on the formation of strong character and morals. Quality education is education that can shape

[1]Prensky, Marc. "Digital Natives, Digital Immigrants." On the Horizon 9, no. 5 (2001): 1-6. https://doi.org/10.1108/10748120110424843.

[2]Tondeur, J., et al. "Teachers' Integration of ICT in the Classroom: Three Decades of Research." Educational Technology Research and Development 65, no. 3 (2017): 555-575. https://doi.org/10.1007/s11423-016-9475-3

[3]Mayer, Richard E. Multimedia Learning. New York: Cambridge University Press, 2005.

students into individuals who are not only intellectually intelligent, but also wise in acting.[4] Therefore, developing learning that focuses on moral values and character is very important to prepare students to face future challenges.

Students' interest in learning also plays an important role in the success of the learning process. Many studies show that high interest in learning will motivate students to be more involved in learning activities and optimize their learning outcomes.[5] Therefore, it is important for principals and educators to create policies and learning approaches that can foster students' interest in learning. These policies not only include the use of technology, but also resource management, development of teacher professional skills, and the application of innovative learning methods.

The role of the principal is very important in directing educational policies in schools, including in terms of technology implementation. As a leader, the principal is responsible for ensuring that technology is used optimally in the learning process. The principal must also develop policies that support the development of professional skills of educators, as well as provide the necessary training so that they can use technology effectively in learning. This is in line with Fullan's view that the principal must be an agent of change that encourages innovation and improvement in the learning process.[6]

Principals also act as leaders who support the integration of technology into every aspect of learning. In this context, principals must create an environment that supports the use of technology, including by providing online learning platforms, educational applications, and multimedia tools. Effective principals can create policies that link the use of technology to broader educational goals, namely creating students who are not only academically competent, but also have the social, moral, and emotional skills needed in the workplace and everyday life.[7]

Along with technological advances, education must be able to accommodate these changes. At SMAS IT Al-Hikmah Maros, the implementation of ICT-based learning aims to create a more efficient, interactive, and interesting learning method for students. The use of technology in education can increase the effectiveness of teaching, accelerate learning, and facilitate more personal and targeted learning.[8] Through the application of ICT, SMAS IT Al-Hikmah Maros hopes

[4]Noddings, Nel. The Challenge to Care in Schools: An Alternative Approach to Education. 2nd ed. New York: Teachers College Press, 2005.

[5]Schunk, Dale H., Paul R. Pintrich, and Judith L. Meece. Motivation in Education: Theory, Research, and Applications. 3rd ed. Upper Saddle River: Pearson/Merrill Prentice Hall, 2008.

[6]Fullan, Michael. The New Meaning of Educational Change. 4th ed. New York: Teachers College Press, 2007.

[7]Zhao, Yong, and Kenneth A. Frank. "Factors Affecting Technology Uses in Schools: An Ecological Perspective." American Educational Research Journal 40, no. 4 (2003): 807-840. https://doi.org/10.3102/00028312040004807.

[8]Hattie, John. Visible Learning: A Synthesis of Over 800 Meta-Analyses Relating to Achievement. London: Routledge, 2009.

to provide learning that not only focuses on mastering the material, but also on developing skills that are relevant to the needs of the world of work and the future.

ICT-based learning management at SMAS IT Al-Hikmah Maros aims to create a more effective and relevant education system with the development of the times. In this case, the principal has an important role in designing policies that ensure that ICT-based education can support broader educational goals, namely not only mastery of technology, but also character development of students. This is in accordance with what was stated by Jonassen, who stated that technology should be used to encourage critical and collaborative thinking among students.[9]

The role of the principal in designing ICT-based policies is very important, not only to ensure that technology is used effectively, but also to ensure that the education provided can prepare students for future life. This is very relevant to the broader goal of education, namely to form individuals who are not only academically intelligent, but also wise in acting and have strong characters.

Evaluation of the implementation of ICT-based learning management at SMAS IT Al-Hikmah Maros was conducted to assess the effectiveness of the use of technology in learning. This evaluation includes an assessment of students' abilities in mastering learning materials, their technological skills, and character development that reflects the values taught in schools. Based on the evaluation results, the principal can determine steps for improvement and further development to ensure that the implementation of ICT has a positive impact on the quality of education in schools.

The application of ICT in learning provides many benefits, including increasing access to a wider variety of educational resources. In addition, ICT allows students to learn in a more interactive and interesting way, and access information from various sources that can be adjusted to each student's learning style.[10] Technology can also enrich students' learning experiences, increase their participation in the learning process, and encourage them to think critically and creatively.

Overall, ICT-based education management at SMAS IT Al-Hikmah Maros aims to create a more effective and relevant education system with the development of the times. By integrating technology into the learning process, the principal hopes to produce students who not only master science, but also have the skills needed to face changes in the future.

This study aims to examine more deeply the implementation of ICT-based learning at SMAS IT Al-Hikmah Maros, with a focus on planning, implementation, and evaluation of the

[9]Jonassen, David H. Computers as Mindtools for Schools: Engaging Critical Thinking. 2nd ed. Upper Saddle River: Prentice Hall, 2000.

[10]Anderson, Terry, and Jon Dron. "Three Generations of Distance Education Technology." The International Review of Research in Open and Distributed Learning 12, no. 3 (2011): 80–97.

implementation. The results of this study are expected to provide useful recommendations for schools in developing more effective ICT-based learning, as well as improving the overall quality of education.

LITERATURE REVIEW

ICT Based Learning Concept

Information and Communication Technology (ICT) is an important component in the development of education in the digital era. The use of ICT in schools aims to improve learning efficiency, provide wider access to learning resources, and encourage students to be more active and creative in the learning process. ICT is a systematic process that supports solving learning problems through technology integration. This implementation includes the use of software, hardware, and other digital platforms.[11]

ICT-based learning management at SMAS IT Al-Hikmah Maros is focused on three main stages, namely planning, implementation, and evaluation. Planning involves the preparation of technology integration strategies according to the school's vision and mission. Implementation is oriented towards the application of technology in daily learning activities, such as the use of online learning platforms and multimedia. Evaluation aims to assess the extent to which ICT implementation improves student learning outcomes, both in academic and skills aspects.

The Role of the Principal in ICT-Based Learning

The principal has a strategic role in ensuring the success of ICT implementation in schools. As an educational leader, the principal is responsible for formulating policies that support the use of ICT, allocating resources, and facilitating training for educators. This is in line with Mulyasa's opinion that the principal acts as an educator, innovator, and motivator in creating a learning environment that supports technology integration.[12]

Previous studies have shown that principal support for the implementation of ICT not only increases the effectiveness of learning but also creates a school culture that is adaptive to technological developments. An example is a study by Muhammad Yusqi Shoubil Haq (2020), which highlights the importance of principal managerial skills in designing digital learning strategies to achieve optimal results.

[11]Yusuf, M. "ICT in Education: A Systematic Approach." Education Studies (2011).
[12] Mulyasa. *Menjadi Kepala Sekolah Profesional.* Bandung: Remaja Rosdakarya, 2007.

Challenges of Implementing ICT-Based Learning

Despite its many benefits, the implementation of ICT-based learning also faces a number of challenges. Research by Inom Nasution identified major obstacles, such as lack of infrastructure support, budget constraints, and resistance to change among educators. These obstacles affect the success of technology integration programs in learning. To overcome these challenges, a strategic approach is needed that involves all stakeholders, from principals, teachers, students, to parents. Continuous evaluation of ICT policies and program implementation is also an important step in ensuring sustainable implementation and positive impacts for the entire school community.[13]

Impact of ICT-Based Learning Implementation

The results of the study show that the application of ICT in learning has a positive impact on improving students' digital skills, the effectiveness of the learning process, and the achievement of educational goals. For example, a study by Ahmad Suriansyah emphasized that continuous training for teachers and the provision of adequate technological devices are key factors in improving the quality of ICT-based learning. Thus, the development of ICT-based learning management at SMAS IT Al-Hikmah Maros not only aims to improve students' academic competence, but also build 21st century skills that are relevant to the needs of the times.[14]

RESEARCH METHODS

This study is a descriptive qualitative study that aims to describe the phenomenon related to the implementation of ICT-based learning management at SMAS IT Al-Hikmah Maros. Qualitative research aims to explore reality by paying attention to the process and authenticity of the data. Sugiyono added that qualitative data is presented in the form of words, sentences, or images. The descriptive approach is used to systematically describe how information and communication technology (ICT) is applied in learning at the school.[15]

The research location is at SMAS IT Al-Hikmah Maros, South Sulawesi, which was chosen because of its relevance in integrating ICT-based education with Islamic values. This study involved the principal, vice principal, educators, and students as primary data sources through interviews, observations, and documentation. Secondary data were obtained from school documents and related literature to support further understanding.

[13] Inom Nasution et al., "Tantangan Kepala Sekolah dalam Implementasi Teknologi Pendidikan di Era Digital Di Sekolah Nadrisatul Ikbar, *JUPE" Jurnal Pendidikan Mandala*, (2021): 120- 130.

[14] Suriansyah, Ahmad. "Pengembangan pembelajaran berbasis tik (proses dan permasalahannya)." *Paradigma* 10.2 (2019).

[15] Sugiyono. *Metode Penelitian Kuantitatif, Kualitatif*, dan R&D**.** Bandung: Alfabeta, 2016.

Data collection methods include observation, interviews, and documentation. Observations were conducted to directly understand the conditions of ICT-based learning, while interviews provided deeper insight into the implementation of learning management applied by the principal and teaching staff. Documentation was used to support the results of observations and interviews, including policy documents and school development plans.

The instruments used in this study included observation guidelines, interview guidelines, and recording tools such as mobile phones and cameras. The observation guidelines focused on ICT-based learning management strategies, while the interview guidelines explored information from principals, educators, and students regarding their experiences in using ICT in learning. The recording tools helped document interviews and observations for data analysis.

The data analysis technique used is descriptive qualitative with the process of data condensation, data presentation, and drawing conclusions. Data condensation is done by summarizing the results of interviews, observations, and documentation according to the focus of the research. Data presentation is presented in narrative form to facilitate understanding, while drawing conclusions is done in stages after the data is verified.

The validity of the data is checked through a credibility test with triangulation techniques, which involve checking data from various sources and techniques. Source triangulation tests the credibility of data from the same source, technique triangulation tests data with different techniques, and time triangulation tests data at different times. In addition, transferability, confirmability, and dependability tests are also carried out to ensure that research findings can be applied to other contexts, are objective, and consistent.[16]

With this approach, the research is expected to provide a deep understanding of the implementation of ICT-based learning management at SMAS IT Al-Hikmah Maros, as well as provide a meaningful contribution to the development of technology-based education in schools.

RESULTS AND DISCUSSION

ICT-Based Learning Planning at SMAS IT Al-Hikmah Maros

ICT-based teaching planning at SMAS IT Al-Hikmah Maros is carried out systematically and involves various parties. Planning is a very important first step in learning management, because it determines the direction and success of the implementation of activities. This step involves formulating strategies to meet the needs of ICT-based education, taking into account the resources and goals to be achieved.[17]

[16] Miles, Matthew B., and A. Michael Huberman. *Qualitative Data Analysis: An Expanded Sourcebook***.** 2nd ed. Thousand Oaks: SAGE Publications, 1994.

[17] Daryanto. *Administrasi Pendidikan***.** Bandung: Alfabeta, 2013.

SMAS IT Al-Hikmah Maros realizes that the use of technology is no longer just an option, but an important need for students and teachers to support an effective teaching and learning process. In the context of the Independent Curriculum, one effort that can be implemented is the use of the Teaching Module as a learning guide that is more flexible and integrated with technology. This Teaching Module provides space for teachers to design relevant learning, such as the use of ICT devices in learning. Schools must continue to adapt to technological developments in order to maximize educational potential and remain relevant to the challenges of the times.

The school decided to combine traditional learning methods with an ICT-based approach. This step aims to provide a richer and more relevant learning experience to the needs of the times. This condition emphasizes the importance of equipping students with relevant digital skills, technological knowledge, and literacy skills so that they are ready to face challenges in the digital era. Mastery of technology allows students to learn more creatively, independently, and effectively. In addition, they can access various global learning resources that broaden their horizons and improve the quality of education.

Furthermore, in supporting ICT-based learning, the Principal of SMAS IT Al-Hikmah Maros conducted a needs identification process through several strategic steps. One of them is by conducting direct observation of the use of ICT in the classroom to understand how teachers and students utilize technology in daily learning. The results of this observation provide a real picture of the challenges faced and the potential that can be developed. In addition, a literature review on the benefits of ICT-based learning was also conducted as a reference in developing strategies, such as increasing student learning motivation, supporting independent learning, and expanding access to global learning resources.

The evaluation results of various ICT trainings that have been attended by teachers are also taken into consideration. This training provides insight into the extent of teacher competence in using technology to support the teaching and learning process. By combining the results of observations, literature reviews, and training evaluations, schools can identify needs comprehensively, both in terms of infrastructure, teacher skills, and the development of digital-based teaching materials.

As part of efforts to support ICT-based learning, SMAS IT Al-Hikmah Maros has implemented a policy that allows students to bring gadgets to school. This policy aims to utilize technology positively in the teaching and learning process, while equipping students with relevant digital skills. The use of gadgets in class is strictly monitored by teachers to ensure that it remains in accordance with learning needs, such as accessing digital materials, searching for information, or completing application-based assignments.

In the foundation's circular, it is emphasized that cellphones are no longer just communication tools, but also have many features that can support learning. However, students need to understand that cellphones can have both positive and negative impacts. Therefore, schools are responsible for providing education on the responsible use of gadgets and ensuring that the devices are used only for educational purposes. With this policy, SMAS IT Al-Hikmah Maros is committed to creating a conducive, innovative, and relevant learning environment to the needs of the digital era.

Allowing students to bring mobile phones to school is one of the strategies adopted by SMAS IT Al-Hikmah Maros to overcome the limitations of available infrastructure. With this policy, students can utilize their personal devices as supporting tools for ICT-based learning, such as accessing digital materials, searching for information, or using educational applications. This approach not only provides a practical solution to the limitations of technological facilities in schools, but also gets students used to using technological devices responsibly and productively. This policy is designed so that the devices owned by students can contribute directly to increasing the effectiveness of learning and creating a more active and independent learning atmosphere.

In addition, in the implementation of this management, standards are also needed as a reference, with clear references, schools can ensure that the use of technology in learning runs in a structured and effective manner. This reference provides guidance for teachers and students in using technology optimally, supporting the achievement of educational goals, and improving the quality of learning.

The Principal stated that, this planning refers to the policy of the Ministry of Education which emphasizes the importance of using technology in education, as has been successfully implemented through the Merdeka Belajar platform.[18]

The success of the platform in encouraging the use of technology for flexible learning has inspired schools to integrate ICT devices and digital applications into learning. By using this policy as a guide, schools are committed to creating an educational ecosystem that is relevant to the needs of the digital era, while maximizing the potential of technology to support the achievement of educational goals.

In this effort, ICT-based planning at SMAS IT Al-Hikmah Maros is also based on various relevant educational regulations, such as Law Number 20 of 2003 concerning the National Education System Article 3 and Permendikbud Number 65 of 2013 concerning Process Standards, which emphasize the importance of technology integration in learning. In addition, the school refers to Permendikbud Number 37 of 2018, which emphasizes the importance of digital literacy as an

[18] Arif Muhammad. Kepala Sekolah SMAS IT Al-Hikmah Kabupaten Maros. Wawancara, 18 November 2024, Ruang Kepala Sekolah SMA.

integral part of the curriculum. The school's policy regarding the use of this technology is stated in the SMAS IT Al-Hikmah Maros regulations, which regulate the use of ICT devices wisely and productively to support learning.[19]

The planning of ICT-based learning management at SMAS IT Al-Hikmah Maros is expected to strengthen the school's vision in forming students with Islamic character and global competence in 2029. By referring to relevant education regulations and the school's mission that emphasizes the application of Islamic values and technology, this planning seeks to create more effective and relevant learning with the development of the times. Wise and productive implementation of ICT, which is reflected in the school's rules and regulations, will support the achievement of these goals.

Implementation of ICT-Based Learning in Al-Hikmah Islamic High School Maros

The implementation of ICT-based learning management at SMAS IT Al-Hikmah Maros is a concrete effort to integrate technology into the educational process. Robbins and Coulter stated that implementation includes human resource management, performance control, and efficient coordination to achieve the desired results.[20]This step was taken in response to the rapid development of technology and the need for mastery of digital skills in the modern era. The steps for implementing ICT-based learning management in this school include:

1. **Provision of Technology Infrastructure**

   The first step in implementing ICT-based learning management at SMAS IT Al-Hikmah Maros is to ensure the availability of adequate technological infrastructure. The school gradually continues to improve its ICT infrastructure by updating the hardware and software used in the learning process. In addition, the school strives to ensure that each classroom is equipped with technology that supports digital learning, such as computers, projectors, and a stable internet connection. By fulfilling this infrastructure, it is hoped that students can access learning materials effectively and efficiently, and can follow technological developments well.

   The results of the study show that SMAS IT Al-Hikmah Maros has made gradual efforts in providing adequate ICT infrastructure. Until now, the school has had 15 Chromebooks as assistance from the Education Office, 2 LCD projectors, and 2 Wi-Fi devices. The availability of these devices helps support digital-based learning activities,

[19] Surat Keputusan Kepala Sekolah SMAS IT Al-Hikmah Amanah Ummah Nomor: 082/SK.TATIB/SMAITAH-AU/VII/2024 tentang Penetapan Tata Tertib SMAS IT Al-Hikmah Amanah Ummah Tahun Pelajaran 2024/2025.

[20] Robbins, Stephen P., and Mary Coulter. Management. 12th ed. Upper Saddle River: Prentice Hall, 2014.

especially to support students who do not have personal devices such as laptops or cellphones.

However, the number of devices available at SMAS IT Al-Hikmah Maros is still insufficient to meet the needs of all students. As a solution to the limited infrastructure, the school implements a policy of using students' personal mobile phones in learning. With this policy, students are given permission to use their mobile phones as a tool in the teaching and learning process, so that it can facilitate the implementation of learning, especially in accessing the necessary digital learning materials and resources.[21]

These efforts show that SMAS IT Al-Hikmah Maros does not only focus on providing hardware, but also includes the involvement of educators and parents of students to maximize the use of technology in learning. Collaboration between schools, educators, and parents is very important to create a conducive learning ecosystem and support the success of ICT-based education.

2. Use of Digital Platforms and Applications

The implementation of ICT-based learning at SMAS IT Al-Hikmah Maros includes various innovations carried out by educators through digital platforms. According to Sartika, ICT-based learning strategies can improve the quality of teaching and learning by creating a creative learning environment and supporting student-centered learning. This is in line with the implementation of ICT-based learning management at SMAS IT Al-Hikmah Maros, where educators utilize various digital applications and platforms to create a more interactive, interesting, and relevant learning atmosphere with the development of modern technology.

Some ICT-based learning activities are as follows:

a. Gimkit for Arabic Language Learning Educators in Arabic language subjects use Gimkit to test and improve students' vocabulary mastery. The platform offers a game-based approach that allows students to actively participate through quizzes designed like games.
b. Quizizz in Islamic Religious Education Islamic Religious Education educators use Quizizz to test students' understanding of the history of the prophets. This platform also makes learning more competitive and fun.

[21]SIT Al-Hikmah Maros Foundation, Cover Letter Number K.022/YAAUM/MRS/XI/2023 concerning the Use of Cell Phones in the SIT Al-Hikmah Environment, Maros, November 29, 2023.

c. Using Google Classroom Google Classroom is a solution when educators are unable to attend. Educators can give assignments, deliver materials, and continue to monitor learning effectively without any obstacles.
d. YouTube as a Learning Media for Crafts Craft educators use videos on YouTube to show examples of plant cultivation in practical materials. This visualization makes the material easier for students to understand and apply.
e. Canva for Biology Presentations Biology educators ask students to create presentations using Canva to visualize marine animal material in an engaging and creative way.
f. Microsoft Word for Indonesian Language Skills Indonesian language educators teach students to create job application letters using Microsoft Word to improve their formal letter writing skills.
g. PowerPoint for PJOK Presentations PJOK educators ask students to create group presentations using PowerPoint, practicing public speaking and group collaboration skills.
h. PowerPoint Design for Chemistry Subjects Chemistry educators use PowerPoint to design chemical reaction material slides, with attractive designs to facilitate understanding of complex concepts.
i. Google Form for English UTBK Simulation English educators use Google Form to provide UTBK simulation questions to students, making it easier to test their abilities.
j. E-Books for History Learning History educators utilize e-books to provide flexible and easily accessible learning materials to students at any time.

3. Educator Training and Workshop

SMAS IT Al-Hikmah Maros realizes that educators' understanding of technology is an important foundation for the success of ICT programs. Therefore, the school regularly holds training and workshops to improve the competence of educators. These workshops include technical training on the use of software such as Microsoft Office, Learning Management System (LMS), and technology integration strategies in learning.

The Vice Principal explained that we strive to provide training that is not only focused on the technical, but also teaches how technology can be used to improve the effectiveness of learning. Educators are encouraged to apply interactive methods that utilize modern technology.[22]

[22] Arif Muhammad. Principal of SMAS IT Al-Hikmah, Maros Regency. Interview, November 18, 2024, Principal's Room of SMA

Google Form and Canva training was also conducted as part of efforts to improve the quality of ICT-based learning at SMAS IT Al-Hikmah Maros. Educators were given training to optimize the use of this technology so that teaching materials could be more interesting and effective.

4. **Digital Based Assessment**

In supporting the implementation of ICT, a digital-based assessment system is also implemented. Educators use applications such as Google Forms to create technology-based quizzes, assignments, and evaluations. This facilitates the assessment process and introduces students to online exams that are increasingly common in the digital era.

By implementing ICT-based assessments, SMAS IT Al-Hikmah Maros hopes to create an evaluation system that is more efficient and relevant to technological developments, as well as improve students' digital skills.

ICT Based Learning Evaluation at Al-Hikmah Maros IT High School

Evaluation of ICT-based learning management at SMAS IT Al-Hikmah Maros is carried out comprehensively to measure the achievement of program objectives and identify potential improvements. Evaluation is a process that assesses the extent to which a program has succeeded in achieving its objectives, and assists in improvement and decision making.[23]

The evaluation stages of ICT-based learning management at SMAS IT Al-Hikmah Maros are as follows:

1. **Observation**

The first stage of evaluation is observation conducted by the principal or vice principal. Observations are conducted in the classroom and field to assess how technology is applied in the learning process. This observation aims to see how technology is used by teachers, how students interact with ICT-based materials, and its impact on everyday life. The principal stated that the main indicator in evaluating the effectiveness of ICT-based learning is the frequency of ICT use in the classroom, which shows how consistently technology is used in learning. In addition, the application of ICT has been proven to create a more interactive classroom atmosphere and increase student involvement in the learning process. Other positive impacts are seen in the increase in student confidence in participating in digital-based competitions, as well as the achievements achieved by students in these competitions, such as 1st place in the short film making competition and 3rd place in the poster design competition.

[23]Stufflebeam, Daniel L. "The CIPP Model for Evaluation." In International Handbook of Educational Evaluation, edited by T. Kellaghan and DL Stufflebeam, 31-62. Dordrecht: Springer, 2003.

2. Analysis of Student Learning Outcomes

The second step in the evaluation is the analysis of student learning outcomes, which is done by comparing student scores on the end-of-semester summative exam. The principal explained that improving student scores is an important indicator in evaluating the effectiveness of ICT implementation. Educators also reported that the use of ICT applications, such as GeoGebra, helped improve students' understanding of geometry materials. This evaluation shows that the implementation of ICT-based learning makes a significant contribution to students' understanding in various subjects and their readiness for digital-based exams.

3. Evaluation Meeting

Evaluation meetings are held at the end of each semester and involve the principal, educators, and staff. The purpose of this meeting is to provide an opportunity for all parties to discuss the implementation and results that have been achieved. The principal leads this meeting attentively, emphasizing the importance of input from all meeting participants. The results of this meeting are used to plan steps to improve and perfect the ICT program in the following semester. In this way, SMAS IT Al-Hikmah Maros continues to strive to improve the quality of ICT-based learning with the aim of creating a generation that is ready to face the development of digital technology.

This comprehensive and collaborative evaluation shows that the implementation of ICT at SMAS IT Al-Hikmah Maros has had a significant positive impact in improving the quality of learning and student achievement.

CONCLUSION

Based on the results of research on ICT-based learning management at SMAS IT Al-Hikmah Maros, it can be concluded that planning is carried out in a structured manner and involves various parties such as the principal, teachers, students, and parents. The school identifies the need for technological devices and develops strategies for utilizing technology in learning, including training to improve educators' ICT skills.

The implementation of ICT-based learning management shows the commitment of all elements of the school, with teachers utilizing digital platforms to deliver materials and conduct assessments. The school also provides training for educators to improve their competence in using technology. In addition, the policy of using students' personal devices such as smartphones is also implemented to support interactive learning.

Evaluation of the implementation of ICT-based learning was conducted through classroom observation, analysis of student learning outcomes, and evaluation meetings. The evaluation results

showed a positive impact on classroom interactivity and student learning outcomes, although there are still challenges such as limited infrastructure and the need for more intensive educator training.

The implication of this study is the need for principals to continue to support the development of technology infrastructure and training for educators. Educators are expected to be more creative and innovative in utilizing technology, as well as updating their knowledge regularly. Students need to be more independent in using technology for learning, while parents are expected to provide support by providing technological devices and participating in school activities that support the improvement of educational infrastructure.

Continuous collaboration between all parties is expected to improve the quality of education and prepare students with adequate digital competencies to face future challenges.

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