

Implementation of Technology-Based Learning (Utilization Of Technology In Smart Digital Class and Regular Class at MA Sunniyyah Selo)

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Abstract

Digitalization of education is now unavoidable. The use of digital media in learning is one way that can be done in the process of digitizing education. The aim of this research is to explore the application of technology-based learning in smart digital classes and regular MA Sunniyyah Selo classes. This research uses a qualitative method with a case study approach. The case study in this research is used to compare technology-based learning in the two different classes. Observations, documentation and interviews were carried out to collect data before analysis was carried out by sorting, grouping, coding, looking for appropriate themes for later interpretation. The research results show that differences in digital media access in the learning process are not a differentiating factor in learning outcomes between smart digital classes and regular classes. Even some of the advantages of learning in smart digital classes are weaknesses in regular classes. Likewise, the advantages of the regular class are the weaknesses of the smart digital class. This shows that the effectiveness of technology-based learning in smart digital classes and regular classes influences the strategies, methods and approaches in the learning process. So that this can be used as a reference in developing technology-based learning in two different classes at once.

Keywords: Learning, Technology, Smart Digital Classes, Regular Classes

Abstrak

Digitalisasi pendidikan saat ini sudah tidak bisa dihindarkan lagi. Penggunaan media digital dalam pembelajaran merupakan salah satu cara yang bisa dilakukan dalam proses digitalisasi pendidikan. Tujuan penelitian ini adalah untuk melakukan eksplorasi penerapan pembelajaran berbasis teknologi di kelas smart digital dan kelas regular MA Sunniyyah Selo. penelitian ini menggunakan metode kualitatif dengan pendekatan studi kasus, studi kasus dalam penelitian ini digunakan untuk melakukan perbandingan pembelajaran berbasis teknologi di kedua kelas yang berbeda tersebut. Observasi, dokumentasi dan wawancara dilakukan untuk mengumpulkan data sebelum dilakukan analisis dengan cara, mengurutkan, mengelompokkan, memberi kode, mencari tema yang sesuai untuk kemudian dilakukan interpretasi. Hasil penelitian menunjukkan bahwa perbedaan akses media digital dalam proses pembelajaran tidak menjadi factor pembeda hasil pembelajaran antara kelas smart digital dan kelas regular. Bahkan dalam beberapa keunggulan pembelajaran di kelas smart digital merupakan kelemahan di kelas regular. Demikian juga dengan kelebihan yang dimiliki oleh kelas regular merupakan kelemahan yang dimiliki oleh kelas smart digital. Hal ini menunjukkan bahwa keefektifan pembelajaran berbasis teknologi di kelas smart digital dan kelas regular terpengaruh dengan strategi dan metode dan pendekatan dalam proses pembelajarannya. Sehingga dari hal tersebut dapat dijadikan acuan dalam pengembangan pembelajaran berbasis teknologi di dua kelas yang berbeda sekaligus.

Kata kunci: Pembelajaran, Teknologi, Kelas Smarat Digital, Kelas Regular

INTRODUCTION

The use of appropriate learning media can foster student activeness in following the learning process. Nurdianzah argues that learning media has the same role when compared to learning methods and techniques. Moreover, in this digital era, the role of learning media is getting bigger in achieving learning goals. (Nurdianzah, Azizah, & Zulfa, 2024). As one of the important components in realizing learning objectives, educational media is always related to other components, such as: teachers, students, approaches, strategies, methods, learning techniques. This further emphasizes that digital media is very necessary in the learning process of the digital era. This is in line with the principle of industrialization of education put forward by Sallis that in maintaining the quality of educational institutions, industrialization of education that has technological prerequisites must first be fulfilled by educational institutions (Sallis, 2012). The use of technology in learning is in line with the needs of students in facing increasingly complex global challenges, where the ability to access information and adapt to technology is very important. One form of technology application in the world of education is through technology-based learning.

Technology-based learning is usually based on the use of digital media in the learning process. This concept provides an opportunity for educators to integrate various digital learning resources into the learning process (Muhammad Yusuf, Dwi Julianingsih, & Tarisya Ramadhani, 2023). So that the learning is digitalized, teachers and students both have the opportunity to explore various information from various sources as a form of contextualization of learning. This is very important to do, because contextualization of learning can bring students into various issues that are in accordance with their times. Toheri et al. in this case convince us that contextual learning can make students think critically (Toheri, Winarso, & Haqq, 2020).

Based on existing research, the application of technology in learning has been proven to have a positive impact in increasing the effectiveness and quality of learning. (Barhoumi, 2020; Lin, Hsiao, Chang, Chien, & Wu, 2018; Rahmelina,

Firdian, Maulana, Aisyah, & Na'am, 2019). However, successful technology implementation is highly dependent on factors such as teacher readiness, available infrastructure, and student engagement. In the context of MA Sunniyyah Selo, this study is expected to provide new insights into the differences in the effectiveness of technology-based learning in Smart Digital classes and Regular classes, as well as how technology can be optimally utilized to support successful learning in both types of classes.

At MA Sunniyyah Selo, there are two types of classes implemented, namely Smart Digital classes and Regular classes. Smart Digital classes utilize various sophisticated technological devices, such as laptops, projectors, and internet access, which allow students to learn with more innovative and technology-based methods. Meanwhile, Regular classes rely more on traditional learning methods with more limited media, although they still have the same internet access. The difference between the two should be a point of differentiation in quality between the two classes. However, in the context of learning success, there is no significant difference between the two, and even tends to be balanced (Documentation). Thus, a comparison of the implementation of technology-based learning in these two types of classes is interesting to study.

This study aims to; 1) Exploring the application of technology-based learning in Smart Digital classes and Regular classes at MA Sunniyyah Selo. 2) In addition, this study is also directed to explore the challenges and benefits faced by teachers and students in using technology in learning. 3) And to what extent technology can improve the effectiveness of the learning process in smart digital classes and regular classes. So that the results of this study are expected to provide broad insights to students and educators in using technology in the learning process in the digital era.

METHOD

The research method used in this study is qualitative research with a case study approach. The use of qualitative methods carried out uses procedures in accordance with those in the research process by producing deductive data that is

described with various descriptions or various opinions of people, taking various events related to research and observing objects in depth in behaviors related to those studied. In addition, the case study approach can help researchers in observing in depth every current event related to the focus of the research (Yin, 2003).

The subjects to be taken in this study were the head of the madrasah, 8 teachers, 16 regular and digital class students and 8 guardians. The data collection techniques used in this study were observation, interviews and documentation. Observations were carried out to obtain data related to condition activities. Interviews were conducted with teachers, students and also guardians at MA Sunniyyah Selo, to obtain comparative data on the implementation of learning in the Smart digital class and regular class, the reasons teachers use the media, and responses from students and guardians regarding the smart digital class and digital class. Documentation was carried out to document learning activities in the Smart digital class and regular class. In addition, this documentation technique can help researchers in observing student growth and development graphs over time. Furthermore, the data obtained from the field were tested for validity using technical validity and source validity, to then be analyzed and interpreted.

Data analysis was carried out by preparing and managing data related to the use of technology in the Smart Digital class and Regular Class at MA Sunniyyah Selo which were then analyzed. The data obtained were then reduced through summarization and then presented in the form of analysis and discussion (Miles, 2014).

RESULTS AND DISCUSSION

Implementation of Technology-Based Learning in Smart Digital Class And Regular Class at MA Sunniyyah Selo

The difference in class types in learning also has an impact on learning outcomes, however, this is not the main benchmark for determining learning outcomes at MA Sunniyyah Selo. At MA Sunniyyah Selo, there are two types of

classes that differ in the use of technology, namely the Smart Digital class and the Regular class. The two classes have their own characteristics, namely: 1) the smart digital class depends on the use of digital technology in its learning process. 2) While the regular class does not depend on digital technology, although in interknit access learning in both classes is equally open (Observation). In this discussion, it will be analyzed how technology-based learning is implemented in both types of classes.

Smart Digital Class: Intensive Implementation of Technology

Smart Digital Class at MA Sunniyah Selo is a class that integrates technology in every aspect of learning. The use of sophisticated digital devices such as laptops, projectors, internet access, and interactive learning applications facilitate students to learn more innovatively and dynamically (Observation). Technology in this class is not only used to deliver learning materials, but also to create a more interactive, collaborative, and activity-based learning experience that can motivate students. Sung et al. said that the use of technology can increase student motivation and facilitate more flexible learning, so that students can learn in a more independent way and at their own pace (Sung, Chang, & Liu, 2016). Therefore, in the Smart Digital class at MA Sunniyah Selo, learning is carried out in a more creative way, using learning videos, simulations, or learning applications that can facilitate students' understanding of more complex materials. Moreover, with technology, there is access to more diverse and more learning resources, both from inside and outside the classroom. This can enrich students' knowledge and give them the opportunity to learn outside the boundaries of the existing curriculum. So with technology, it can help students create a learning experience that is more based on students' needs and interests. (Bates, 2019). Mr. Zaini said that:

“This digital class is intended for students who have been interested in the digital world from the start. While regular classes are usually intended for students who are less familiar with the use of digital tools. Digital classes are usually of interest to students who do not come from Islamic boarding schools. While regular classes are usually taken by students who are also students at Islamic boarding schools around the madrasah” (Interview).

Although technology in smart digital classes can provide many benefits, there are also challenges faced, namely the readiness of students and teachers in using technology effectively. Because without effective readiness from teachers and students, the digital technology that is prepared will be meaningless and can actually hinder the learning process. So the main prerequisite for effective use of technology in learning is about technical skills from both teachers and students in utilizing digital technology (Lacka & Wong, 2021). This was said by Mr. Zaini that:

“We have prepared IT experts and we also require every teacher who teaches in the digital class to be able to master the technical use of existing digital tools. Therefore, usually teachers who teach in digital classes are those who are still young and do understand technology” (interview)

Regular Class: Limited *Application* of Technology

In contrast to the Smart Digital class, the Regular class at MA Sunniyyah Selo relies more on traditional learning methods with limited use of technology. Although technology can be used to support learning, such as using projectors or online learning platforms, the Regular class does not have the same access as the Smart Digital class in terms of sophisticated devices or applications (Documentation). This creates a difference in the learning experience received by students. However, even so, the learning process in the regular class runs conductively (Observation). This shows that limited access to digital media for regular class students is not a barrier to undergoing the learning process properly. Thus, Harris et al. said that even though technology is used limitedly in regular classes, the use of technology can still have a positive impact on student learning outcomes. For example, the use of technology-based learning media can help improve students' understanding of difficult concepts, although not as comprehensive as in the Smart Digital class. The use of simpler software, such as learning videos or digital presentations, can still provide additional stimulation for students and encourage them to be more active in learning (Mishra, Koehler, & Harris, 2009). Mrs. Aufa said that:

There is a big difference in the use of technology when comparing regular classes and digital classes. In digital classes, all learning is digital, while in regular

classes, the use of projectors and internet access is only as a support in finding information about learning materials with current conditions. However, even so, the learning process in regular classes is running well, even the majority of Quran memorizers are in regular classes (Interview).

The difference in the learning process between digital classes and regular classes is: *First*, digital classes: all learning series use digital devices, starting from attendance, learning processes and also research and evaluation processes. *Second*, regular classes: learning does not depend on digital devices, but the presence of the internet and projectors in regular classes can help the learning process run well and be more informative.

Challenges and Benefits Faced by Teachers and Students in Using Technology

Challenges in Using Technology in Smart Digital Classrooms

Limited Resources

Digital classes at MA Sunniah Selo have utilized sophisticated devices such as laptops, projectors, internet access, digital Smart TV (Observation). These digital devices have been completely and adequately owned by MA Sunniah Selo to support the learning process. However, the existence of electricity and internet networks that are sometimes unstable is an obstacle to the learning process in digital classes. Mr. Labib said that: Learning in digital classes starting from the infrastructure and facilities is complete, but the obstacle is the network and electricity is sometimes unstable. This clearly disrupts the learning process for students in digital classes (Interview). Chen and Lin in this case said that technology in education is highly dependent on the availability of supporting resources and networks that are able to connect devices to the digital world (Chen, Chen, & Lin, 2020).

Uneven Technology Skills

The use of technology in Smart Digital classes also requires mastery of technical skills from both teachers and students. At MA Sunniah Selo, learning in digital classes has been carried out by teachers who are competent in using digital

devices. However, even so, the unevenness of students' abilities in operating digital devices often becomes an obstacle in the learning process. Mr. Labib said:

“Kami akui kemampuan siswa berbeda-beda. Tentu saja hal ini menjadi tantangan bagi kami sebagai pengelola kelas digital pintar. Masalahnya kalau seperti ini pasti membuat kelas menjadi tidak kondusif, karena ada siswa yang ingin belajar cepat, namun ada siswa yang tidak bisa diajak belajar cepat” (Wawancara).

So a teacher needs to have skills in managing the devices used in the classroom. This can be done by integrating digital applications and tools in teaching, as well as overcoming technical problems that may occur during learning, so that each student can rationalize the device and do their respective assignments.

Challenges in Using Technology in Regular Classrooms

Technology and Resource Limitations

Unlike the Smart Digital class, the Regular class at MA Sunniyyah Selo only has limited modern learning media, namely: projectors and internet access. These technological limitations make the learning process oriented towards the textuality of the learning material. However, in the implementation of learning, the class always looks active and full of interaction between students and students and students and teachers (Observation). Learning without digital devices can increase interaction in the learning process, making the learning process in the classroom interactive (Utomo, 2023).

Limitations of Teacher Experience in Technology

Unlike the Smart Digital class, the Regular class at MA Sunniyyah Selo has limitations in the use of technology. Although technology is still used, such as projectors and internet access, this is rarely used, and is only used in certain subjects, and by certain teachers who do master internet-based devices and media (Observation). Jamun said that although technology can increase productivity in learning, this can have an impact on decreasing social communication in the learning process. (Jamun, 2018).

Benefits of Using Technology in Smart Digital Classrooms

Increasing Student Motivation

The implementation of class choices between smart digital classes and regular classes at MA Sunniyah Selo simultaneously has provided an opportunity for students to choose according to their interests and desires. This is certainly very good in shaping student motivation, because student learning choices that are in accordance with their desires can help increase student motivation in learning. (Lince, 2022; Nurdianzah, 2024). Likewise, in MA Sunniyah Selo, Smart Digital class learning always runs in a disciplined and enthusiastic manner. Even on every occasion, almost no students are late or absent from school, except for clear and reasonable reasons (Documentation). So that the Smart Digital class at MA Sunniyah Selo is also able to increase student involvement and motivation in learning. Bates shows that the use of multimedia, videos, and learning applications can make learning more interesting and enjoyable. Students are more likely to be actively involved in learning that uses interactive and innovative technological tools. With more varied learning, students are more motivated to understand the material and participate in class activities (Bates, 2019).

Access to Unlimited Learning Resources

Another benefit that smart digital classes have in the learning process is having access to various digital learning resources, such as learning videos, e-books, online learning platforms, and online discussion forums. This wider access allows students to explore the material in more depth, enrich their knowledge, and give them more opportunities to learn independently. (Timotheou et al., 2023). So that this can make students at MA Sunniyah Selo more contextual in their learning. Ilham Syaputra said that:

“Pembelajaran di kelas kami tidak monoton mendengarkan guru menyampaikan materi pembelajaran, namun lebih sering berdiskusi dengan tema yang telah ditentukan. Kami memiliki akses ke berbagai sumber, sehingga kami dapat dengan mudah merangkum berbagai informasi terkait tema yang kami bahas di kelas” (Wawancara).

Technology provides flexibility in learning, allowing students to access learning materials anytime and anywhere. With technology, students can study the material more deeply, discuss with their friends through online platforms, or access various learning resources that are not available in traditional classes. Flexible learning allows students to learn according to their own pace and learning style, which can improve understanding and learning outcomes (Fhatiah Adiba, Andayani, Andi Akram Nur Risal, Edy, & Surianto, 2023).

Benefits of Using Technology in Regular Classes

Despite the limitations in the use of technology, the Regular class of MA Sunniah Selo can still utilize technology in its learning. So, even though it is not a digital class, laptops, internet and projectors are still provided in the class that can be used by teachers in their learning process (Observation). Saiful Ilham said that:

In our class, the use of laptops, computers is limited to teachers. Usually the teacher will present the discussion theme and provide materials that can be used as discussion material for us. Although our class is limited in the use of digital media, our class is no less good than the smart digital class (Interview).

Although in the regular class the use of technology is more limited, these limitations can still help improve students' understanding of difficult concepts. For example, the use of learning videos or digital presentations can provide visual explanations that make it easier for students to understand the material in more depth (Opoh, Haris, & Tune Sumar, 2021). Thus, the limited use of digital technology in regular classes at MA Sunniah Selo does not become a barrier to the implementation of effective learning.

Increasing the intensity of interaction in the classroom

The limited use of technology in the Regular class of MA Sunniah Selo can actually increase the intensity of interaction between students and teachers. This can be seen from the activeness of students in discussing in a group and also expressing their opinions in the discussion process in the classroom (Observation). This is because the regular class does not depend on the use of digital technology, so that

teachers can focus more on direct interaction with students, provide direct feedback, and help students understand the material better. With a high level of more intense direct interaction in the classroom, it can improve student understanding and build stronger relationships between teachers and students. (Yulianingsih & Lumban Gaol, 2019). This is related to the limited use of digital media. So that teachers must be more creative in utilizing existing resources. Teachers with limited resources can encourage teachers to be more innovative in creating effective learning strategies without relying entirely on technology. This can train teachers to further optimize traditional teaching techniques that remain relevant in the digital era. (Fauzi, 2023).

Effectiveness of Learning Process in Smart Digital Class and Regular Class

An effective learning process requires strategies that can support student involvement in improving their understanding of the material, as well as accommodate various types of student learning. (Astutik & Nurdianzah, 2024). The Smart Digital Class and the Regular Class of MA Sunniyah Selo have different advantages and challenges in achieving these goals. Here is an analysis of the effectiveness of the learning process in both types of classes:

Smart Digital Class

The advantages of the learning process in the smart digital class of MA Sunniyah Selo include several items, the following is an explanation: First; Increasing Student Involvement and Motivation, the use of interactive technology, such as multimedia, learning applications, and online learning platforms in the Smart Digital Class can significantly increase student involvement. As in the learning process, students always use digital media as a means to find information, so that students' enthusiasm in discussing goes well (Observation). Visual and multimedia elements in learning can make the material more interesting and easier to understand, so that students are more motivated to actively participate (Khamid & Umam, 2021).

Second; Flexibility in Learning, with technology, students can access learning materials anytime and anywhere. This is very beneficial because students can learn at their own pace. This has become a tradition in smart class learning at MA Sunniyah

Selo, where each student is given the freedom to use a smartphone in their learning process (Observation). The use of smartphones in learning can facilitate students in finding various information during the learning process. (Rochmad, 2021). So this also makes students have wide access to various learning resources. As in the smart digital class of MA Sunniyah Selo, students' access to information is not only in textbooks. Textbooks for learning materials are used as navigation to determine the direction and objectives of learning (Documentation). Students can use learning videos, e-books, online articles, and even discuss with friends through online forums. This provides an opportunity for students to explore the material more deeply and independently, which cannot be obtained in traditional classroom settings. (Nugraha et al., 2024).

The challenges of the learning process in the smart digital class of MA Sunniyah Selo include several items, the following is an explanation: First; Dependence on Technology, although the Smart Digital class offers many advantages, dependence on technology can be a challenge for teachers and students at MA Sunniyah Selo. Technical problems, such as damaged devices or limited internet access, electricity constraints can hinder the learning process (Kurniadi, 2022). As also stated by Mr. Zaini that Smart Digital Class is very dependent on the stability of the internet and electricity. That is the obstacle that we might experience. Several times also sometimes learning is disrupted because the internet is unstable and also the electricity is not on (Interview).

Second, Lack of Personal Interaction: although technology allows for more flexible learning, it can also reduce face-to-face interaction between students and teachers and even between students. This is certainly not something that is okay, because the essence of forming character can be hampered (Afifah, 2023; Nurdianzah, Ma'arif, & Junaedi, 2024). Likewise in smart digital class learning at MA Sunniyah Selo, that in some cases, less interaction has occurred as a result of students focusing on individual information searches (Observation). This can certainly reduce personal relationships between students and even with teachers. This can also have

an impact on decreasing student motivation and understanding, especially for those who need more intensive guidance. (Nurdianzah, Mirza, & Anas, 2023).

Regular Class

The advantages of the learning process in the regular class of MA Sunniyah Selo include several items, here is the explanation: First, Better Personal Interaction, one of the main advantages of the regular class is direct interaction between teachers and students and students with students. Interaction like this can make students have solidarity among students and build good relationships between students and teachers (Azizah, Nurdianzah, Wijaya, Azami, & Rohman, 2023). Likewise with learning in the regular class of MA Suniyah Selo, the limited use of digital devices makes the regular class have intense interaction in the learning process. However, this does not mean that the regular class is a traditional and backward class, but this regular class often makes noisy discussions that can be heard outside the classroom (Observation). This kind of interaction makes it easier for teachers to provide direct feedback and adjust teaching methods to the needs of individual students. It also strengthens the relationship between students and teachers, which can increase motivation and engagement (Inayah, 2021).

Second, Simple in Implementation: regular classes do not require sophisticated technology and can be run with existing resources. This makes the learning process easier to implement, especially in areas that may not yet be fully accessible to technology. (Ramadhani, 2018). Thus in the regular class of MA Sunniyah Selo, the limitations in the use of digital devices make the learning process directed at the use of whiteboards, textbooks, and other physical learning aids (Observation). However, this is still very effective in supporting the understanding of regular class students. This can be seen from the regular class report card scores which are no different from the smart class (Documentation). In regular classes, digital technology is used not as the main focus, but as a supporting tool for learning success.

The challenge of the learning process in the regular class of MA Sunniyah Selo is the Limited Access to Learning Resources:

The main weakness of the regular class is the limited learning resources. As a supporting tool, the use of digital technology is still very limited in the regular class of MA Sunniyah Selo. Thus, learning often depends on textbooks and materials distributed by teachers (Observation). This makes the learning process not entirely contextual. In fact, this contextual learning is very important for student development. With contextual learning, students can learn directly about the issues and problems that currently exist in society or the global world today. This is useful for developing and training students' problem-solving thinking skills. (Hasyim, 2019).

Technology-based learning in two different classes makes the learning process in each class have different strategies in achieving learning objectives. Therefore, the implementation of technology-based learning in MA Sunniyyah Selo is expected to be the basis for the development of educational institutions in implementing technology-based learning. So that this can improve the overall quality of education and help students to be better prepared to face the challenges of the digital world in the future.

CONCLUSION

Learning using technology in two different class groups is the topic of this discussion. This raises the finding that the difference in access to digital media in the learning process is not a differentiating factor in learning outcomes between smart digital classes and regular classes. Although smart digital classes have free access to the use of digital technology, this does not determine the success of learning when compared to regular classes that only use digital technology as a supporting medium for learning in regular classes at MA Sunniyah Selo. Even in some discussions, the advantages of learning in smart digital classes are weaknesses in regular classes. Likewise, the advantages of regular classes are weaknesses of smart digital classes at MA Sunniyah Selo. Overall, the effectiveness of technology-based learning in smart digital classes and regular classes is influenced by strategies,

methods and approaches in the learning process. So that from this it can be used as a reference in developing technology-based learning in two different classes at once. From this, class conditioning and also fulfilling student motivation are important, in addition to providing digital educational technology devices.

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