

## Implementation of Educational Technology in Learning at Madrasah Aliyah Negeri 2 Palembang

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**ABSTRACT:** *The purpose of this research is to determine how educational technology is implemented in the learning process at Madrasah Aliyah Negeri 2 Palembang. This research is a type of qualitative research with a descriptive approach. In this study, the informants were school principals, students, education staff, and others related to this research. Data collection techniques, namely through the method of observation, interviews, and documentation. Data analysis techniques in this study used data reduction, data presentation, and verification, and also, there was a technique for checking the validity of data through triangulation. The results of this study indicate that the educational technology used in learning covers all subjects, and all teachers are free to use existing educational technology and can even develop it according to the needs of existing learning. In implementing educational technology in learning, MAN 2 Palembang has implemented a systems approach as an integral part of the education process. This system is well built in the learning process by utilizing educational technology. Besides that, MAN 2 Palembang has also carried out a learning process oriented towards students. This is important to implement so that what is the need of students can be adequately accommodated by madrasahs. What is no less important is the use of good learning resources to achieve educational goals.*

Tujuan dari penelitian ini adalah untuk mengetahui bagaimana implementasi teknologi pendidikan dalam proses pembelajaran di Madrasah Aliyah Negeri 2 Palembang. Penelitian ini merupakan jenis penelitian kualitatif, dengan pendekatan deskriptif. Dalam penelitian ini informannya adalah kepala sekolah, kesiswaan, tenaga kependidikan, dan lainnya yang berhubungan dengan penelitian ini. Teknik pengumpulan data yakni melalui metode observasi, wawancara, dan dokumentasi. Teknik analisis data dalam peneliti ini menggunakan reduksi data, penyajian data, verifikasi, juga dalam penelitian ini ada teknik pemeriksaan data keabsahan data melalui triangulasi. Hasil penelitian ini menunjukkan bahwa teknologi pendidikan yang digunakan dalam pembelajaran mencakup semua mata pelajaran, semua guru diberikan kebebasan dalam menggunakan teknologi pendidikan yang ada dan bahkan bisa mengembangkan sesuai dengan kebutuhan dari pembelajaran yang ada. Dalam proses implementasi teknologi Pendidikan dalam pembelajaran, MAN 2 Palembang sudah menerapkan pendekatan sistem, sebagai bagian yang tidak terpisahkan dalam proses pendidikan, sistem ini dibangun dengan baik dalam proses pembelajaran

dengan memanfaatkan teknologi pendidikan, selain itu MAN 2 Palembang juga sudah melaksanakan proses pembelajaran dengan berorientasi pada peserta didik, ini penting dilaksanakan agar apa yang menjadi kebutuhan dari siswa bisa diakomodir dengan baik oleh madrasah dan yang tidak kalah penting adalah memanfaatkan sumber belajar yang baik untuk mencapai tujuan pendidikan.

**Keywords:** *Education Technology, Learning Technologies, Implementation of Technology.*

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## I. INTRODUCTION

Educational technology is the study and practice to help the learning process and improve performance by creating, using, and managing adequate technological processes and resources. Educational technology is often associated with the theory of learning and learning. While learning and learning theory includes methods and systems in education and learning, educational technology includes other systems used to develop human abilities (Ma'mur, 2018).

Educational technology tools can change the role of teachers. Technological tools will make it easier for teachers to help convey messages in the learning process. But the part of the teacher will not be eliminated and will always be necessary. Marrying 'technology' with 'education' can surprise the teaching profession because technology is associated with machines that can pose a danger of "dehumanization" of education, that is, an all-machine "mechanical" education, which removes the human element that is always present in the social interaction between teacher and student and between students and learners.

Learning is a teaching and learning process that involves learning activities, where the meaning of the teaching and learning process must be able to work out how students learn. Because the core of the teaching and learning process is student learning, its effectiveness depends mainly on the student's learning points. Because the nature of the teaching and learning process is student learning, its effectiveness depends primarily on students' learning energy. Such is the importance of learning activities. Learning is necessary for education because the most significant part of the educational process is directed at achieving change in people (Ikhwan, 2021b).

The effectiveness of the learning process emphasizes an effort that will birth practical learning activities. Effective learning is an optimal learning activity for students. The application of teaching and learning strategies that emphasize the effectiveness of students in learning will cause students to be able to use all the basic skills they have to carry out various required learning activities. Technology ushers in fundamental structural changes that can be integral to achieving significant productivity improvements (Miasari et al., 2022).

Teaching from a Process point of view (by Proceed) is a teaching that is categorized as effective if the learning takes place in a dynamic interactive manner that allows students to develop their potential through learning activities based on predetermined goals. Teaching from a result point of view (by Product) is a teaching that is said to be effective if students can realize teaching goals both in terms of quality and quantity.

Technology-based education is one of the inevitable impacts of globalization, technological advances coupled with the quality of education based on Pancasila is a combination that deserves to be implemented in the education system in Indonesia to make our human resources become one of the agents of change (Aisyah, Maulana, Rahmelina, & Firdian, 2020).

The above statement shows that effective teaching focuses on creating student learning activities as optimally as possible. Teachers must always take the trouble to facilitate or create conducive conditions so that students can actively learn on their awareness and will.

Along with the development of educational technology and its supporting infrastructure, efforts to improve the quality of education can be carried out through the use of educational technology in learning activities. Educational technology is a system that can facilitate educators and students to learn more comprehensively, more and also varied. Through the facilities provided by the system, students can learn independently, anytime and anywhere, without being limited by time and space. The materials they can learn are also more varied, not only in the form of word presentations but can be more affluent with variations in text, visual, audio and animation.

Entering the current century of Information and Communication Technology, the importance of improving the quality of learning is felt. Through the use of educational technology, we can improve the quality of learning, namely by opening wide to access to science and the implementation of quality education. Especially the application of high-tech and high-touch approaches. Information technology systems in education provide a broad, fast, effective, and efficient reach to disseminate information to various parts of the world. Information technology develops in line with communication theory and technology that supports learning activities. Multimedia-based learning, such as computer marching learning (PBK), and web marching learning (e-learning), is a form of ICT utilization that needs to be implemented in today's world of education (Rahim et al., 2019).

Today's educators can tap into a fascinating set of technological tools to enhance classroom learning. More than two decades ago, the technology available to educators who wanted to use not only chalk could only use overhead projectors, 16 mm film projectors, tape recorders, and televisions (Awaluddin, Ramadan, Charty, Salsabila, & Firmansyah, 2021).

One of the educational problems that are a priority to find a solution immediately is the problem of the quality of education, especially the quality of learning. From the various conditions and potentials that exist, efforts to improve the quality of education are to develop learning technology that is oriented towards the interests of students and facilitates the need for cognitive, affective and psychomotor development (Ikhwan, 2017).

Educational problems that arise today include equal distribution of opportunities to obtain an education and improving the quality or quality, relevance, and efficiency of education. The severe pain still felt in education ranging from primary to higher education is the problem of quality, and it is hoped that this can be solved through an educational technology approach.

Ideally, educators can innovate and be creative in teaching so that students can learn the substance of the field of knowledge to be studied. The way educators teach will be easier for learners to remember in the long run than the importance of the material being introduced (Erihadiana & Rahman, 2021).

The application of learning technology can be said to be the use of technology in solving purposeful and controlled learning problems by utilizing and utilizing various learning resources as much as possible through specific procedures ranging from analysis, selection of alternatives, implementation, and evaluation of problem-solving and its management (Abidin, 2016). Technology is a process to get added value. That process does result in a helpful product. Meanwhile, the use of the product is inseparable from other cultural elements or existing systems (Budiyono, 2019).

This article examines the implementation of educational technology in learning. MAN 2 Palembang has been named a pilot madrasa, interesting to study because the development of the times in the era of the industrial revolution 5.0 all use technology, including education. The use of technology in education has been proven to facilitate various jobs in education, even becoming a solution in distance learning, web-based instruction, and e-learning activities that allow knowledge transfer to be done anywhere.

Some of the benefits that can be obtained from the implementation of technology in learning include information being faster obtained and accessed for educational purposes, the emergence of e-learning to support the ease of the educational process, Subject matter can be made more exciting and interactive, Learners quickly obtaining knowledge and information, also offer an easily accessible digital library.

## II. METHOD

This research was carried out at MAN 2 Palembang, Jenderal Sudirman KM. 3.5 Palembang. MAN 2 is a madrasa with a model or example for other madrasahs. Of course, this is interesting to research related to the educational process and learning using technology. The type of research in this research is qualitative field research. Data were obtained directly from the field through observations, interviews or documents. Qualitative is field research using theory without using statistical formulas (Moleong, 2014). The informants in the research were school principals and students or teachers who were believed to have extensive knowledge of the problems being studied. The qualitative research process begins with determining people who are vital informants and supporting informants who are trusted informants (Rukin, 2019).

Data analysis techniques involve taking and collating data from interviews, field notes and documents, grouping data into categories, describing it in units, and selecting important content that you and others can understand. Data reduction is a summarizing activity where only the important ones are chosen. To reduce data by providing precise shading and making it easier for researchers to collect further research. After the problem is found in the observation stage, the problem is included in this stage so that the investigation is more targeted by studying data, organizing and arranging it in such a way that it is easy to understand and conclude. The final step in the qualitative data analysis process is finishing. Furthermore, the conclusion of the qualitative research process is to classify the results of interviews as unimportant with the results of

information about research conducted by researchers, taking into account several factors needed for the study (Ikhwan, 2021a).

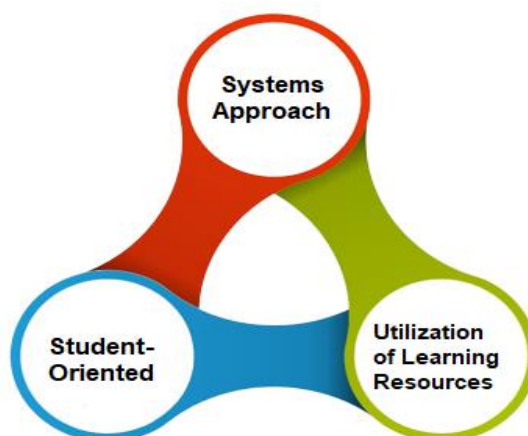
### III. RESULT AND DISCUSSION

Implementing educational technology in learning is a teaching and learning process with learning activities, in the sense that the teaching and learning process must be able to work on how students learn. Because the core of the teaching and learning process is student learning, its effectiveness depends mainly on the students' learning points. Such is the importance of learning activities, so Muhibbin Shah stated that without learning, there is never education because the most significant part of the educational process is directed at achieving the process of change in humans (Nasution, 2018).

Educational problems that arise today include equal distribution of opportunities to obtain an education and improving the quality or quality, relevance, and efficiency of education. The severe problem still felt by education ranging from primary to higher education is the problem of quality, and it is hoped that this can be solved through an educational technology approach (Munir, 2018). The role of technology in learning is to facilitate the formation of relationships collaboratively and build meaning in a more understandable context (Agustian & Salsabila, 2021).

Thus, technology in education is part of educational technology in the form of educational media to facilitate learning activities. The potential for increasing educational productivity allows teaching to be individualized, fast, broad, and equitable. Technology implementation in education should be adjusted to the context and characteristics of learners and their cognitive abilities. (Sudjarwo, 2014) With this technology, education staff can be as creative as possible to create a learning module that is not boring for students (Parikesit, Adha, Hartino, & Ulpa, 2021).

Several indicators must be considered in implementing educational technology in learning, including a system approach, orientation to students, and utilization of learning resources at MAN 2 Palembang. The systems approach is any collection of interconnected parts that form a more prominent and influential unity in learning. The implementation of education and learning needs to be designed or designed using a systems approach. Student-oriented is a learning process used to develop students' activeness in understanding concepts and theories through experiential activities in various learning environments. Meanwhile, using learning resources means that students should be able to utilize learning resources to access the knowledge and skills they need.



*Figure 1. Indicators of Implementation of Educational Technology in Learning*

### **Systems Approach in the Application of Educational Technology in Learning**

The systems approach is a philosophical view of subject matter, which must be taught and subsequently give birth to teaching methods (Salim & Kurniawan, 2018). The term system is an abstract concept. The traditional definition states that a system is a set of components or elements that interact with each other to achieve a goal is any collection of interconnected parts that together form a greater unity and influence learning. The implementation of education and learning needs to be designed or designed using a systems approach. In developing understanding, procedural steps are required, including problem identification, state analysis, goal identification, learning management, method determination, media determination, and learning evaluation.

The systems approach applied in learning is not only by the development of science and technology but also by developments in the psychology of systematic education, which is based on behavioristic and humanistic psychology principles. Aspects of the learning system approach include philosophical aspects and process aspects.

The philosophical aspect is the view of life that underlies the designer's attitude, a system directed towards reality. At the same time, the process aspect is a process and a conceptual tool. In educational technology, the systems approach is any collection of interconnected parts that form a more significant and influential whole in learning.

The components of the system are interrelated so that any change in one or more elements affects the state of the system as a whole. But the degree of interdependence between such components is different. Some are more dependent on other parts, and some are fewer. These components can break down into several more minor elements referred to as sub-systems.

The process of education and learning is a complex system. Input/input in the learning system consists of people, information and other sources. At the same time, the output consists of people with a more refined appearance in various aspects. The learning process can also be so complex in a system like this. Thus, it leads to a systems approach in designing lessons based on existing knowledge of how students learn.

This system approach tries to incorporate input into a specific learning process to obtain the optimal assimilation of knowledge and skills needed in the learning process. An approach like this also means maximizing output quality.

The application of educational technology in education should make the educational process, in general, and the teaching and learning process, in particular, more efficient and effective and provide positive added value. Effective and efficient means that the educational efforts undertaken should be able to achieve the goals outlined with little cost, effort, and time (Asmani, 2017). The use of technology in education is none other than to improve the quality of education (Suminar, 2019). Education, as an open system, needs a systems approach in its development. Because, with that available system, education will always try to update itself to remain relevant and relevant. The risk of this open system is that education will always encounter problems with every change made, so it needs a robust systems approach to find solutions (Adnan, 2018).

The system approach is also based on systems management, namely the application of systems theory in processing organizational systems. These results relate to observations or a general model of the transformation of inputs into results, which implies that systems approaches are rooted and sourced in a wide variety of fields of science, such as Logic, Philosophy, Communication theory, Psychology and other areas of science (Rambe, 2011).

The systems approach was initially used in mechanical engineering to design electronic, mechanical and military systems. Then the systems approach involves machine-man techniques and is further implemented in the field of organization and management (Kiman & Yasin, 2021).

From the statement above, procedural steps are needed in implementing educational technology in learning, including problem identification, state analysis, goal identification, learning management, method determination, media determination, and learning evaluation. Aspects of the learning system approach include philosophical aspects and process aspects. The intellectual part is the view of life that underlies the designer's attitude, a system directed towards reality. At the same time, the process aspect is a process and a conceptual tool in the same direction as the systems approach in designing lessons based on existing knowledge of how students learn. This system approach tries to incorporate input into a particular learning process to obtain the optimal assimilation of knowledge and skills needed in the learning process by maximizing the output quality.

### **Student-Oriented in the Application of Educational Technology in Learning**

Student-oriented is a learning process used to develop students' activeness in understanding concepts and theories through experiential activities in various learning environments (Hamalik, 2016). Learning should focus on the learner by paying attention to the student's characteristics, interests, and potential of the student. Learning is a system consisting of various components that are interconnected with each other. Learning should focus on the learner by paying attention to the student's characteristics, interests, and potential of the student. Learning is a system consisting of various components that are interconnected with each other (Sanjaya, 2018).

Realizing the importance of the process of improving the quality of human resources, the government, together with the private sector, continue to strive to learn the improvement the quality of higher-quality education. To improve the quality of

learning, an educator must have the ability to develop learning strategies and be able to choose the right plan for learning activities (Hutauruk, Turnip, & Sembiring, 2021). When viewed from the learning outcomes achieved by students through student activity-oriented learning (PBAS) makes students motivated to follow the learning material and students do not feel saturated in following a subject, especially physics subjects, because students are active in the teaching and learning process (A, Subaer, & Samad, 2011).

From the statement above, it can be concluded that the orientation in students must focus on students, including the characteristics, interests, and potentials of students by paying attention to the four components of goals, materials, methods, and evaluations by determining the appropriate approaches, learning models used in learning activities.

### **Utilization of Learning Resources in the Application of Educational Technology in Learning**

Using learning resources means that students should be able to utilize learning resources to access the knowledge and skills they need. One more thing is that educational technology is one area that emphasizes the learning aspect of students. Learning resources can solve academic or teaching problems both in the micro and macro spheres. Learning resources can provide positive motivation, especially if they are arranged and planned for their use appropriately. Learning resources can stimulate to think, behave and develop further (Daryanto & Rahardjo, 2017). Miarso explained that learning is an activity both with the guidance of teaching staff and with his own efforts. The presence of teaching staff in learning activities is intended to make learning smoother, more accessible, more fun, and more successful (Miarso, 2016).

As for students, learning is basically to acquire knowledge, skills, and attitudes anywhere, anytime, and with anything because learning resources are available anywhere, and there are various types with the occurrence of interaction between learning processes. The quality of student interaction with learning resources affects learning outcomes. Thus, there is a very big difference between students with high intensity in the use of learning resources and those with low power in utilizing insufficient learning resources to achieve their learning outcomes (Molenda, 2008). The diverse learning resources around the lives of learners, both designed and operated in general, have yet to be utilized to the fullest, but their use is still limited to textbooks (Supriadi, 2015).

Based on the above statement, quality is one of the problems in educational technology. Technology in education is part of educational technology in the form of educational media to facilitate learning activities. The potential for increased educational productivity allows instruction to be individualized, fast, broad, and equitable. Technology implementation in education should be adjusted to learners' context and characteristics and cognitive abilities' level.

The innovations carried out are disseminated through several channels or media (Hidayat & Gafur, 2015). The dissemination of creation is important before innovative products can be used and provide optimal benefits in achieving learning objectives.



#### IV. CONCLUSION

Based on the research results above, implementing educational technology in learning at MAN 2 Palembang has been done well. There are various indicators, including a system approach, orientation to students, and utilization of learning resources in MAN 2 Palembang. Implementing the system approach as an essential part of supporting learning outcomes and using educational technology in the learning process has become a must. MAN 2 Palembang has utilized and facilitated the learning process well. In addition, it is also to the developments in the psychology of systematic learning, which is based on the principles of behavioristic and humanistic psychology. Furthermore, student-oriented is a learning process used to develop participants' activeness. Students are given flexibility in developing their abilities by utilizing educational technology. In the learning process, the use of learning resources has been well implemented at MAN 2 Palembang. Students should use learning resources to access the knowledge and skills they need. Technology in education is part of educational technology in the form of educational media to facilitate learning activities. The potential for increasing educational productivity allows teaching to be individualized, fast, broad, and equitable. Technology implementation in education should be adjusted to learners' context and characteristics and cognitive abilities level.

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