



## Application of Technological Pedagogical Content Knowledge (TPACK) learning by al-Qur'an hadith teachers to the learning outcomes of al-Qur'an hadith at MAS DDI Tellu Limpoe, Sidrap Regency

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### ABSTRACT

This research aims to determine the results of implementing the Technological Pedagogical Content Knowledge (TPACK) learning model on student learning outcomes, especially in the Al-Qur'an Hadith subject at MAS DDI Tellu Limpoe, Sidrap Regency.

The research method used in this research is a quantitative experiment, where this method is a research method used to examine certain populations and samples. The type of research used in this research is a quasi-experimental design, where the groups are not chosen randomly but use two groups, namely the experimental group, namely the group that was given scientific Technological Pedagogical Content Knowledge (TPACK) treatment, and the control group, namely the group that was treated with conventional learning. . The class selected as the experimental group was class XI IIS A with a total of 20 students, and the class selected for the control group was class XI IIS B with a total of 20 students.

The results of the research show that the application of Technological Pedagogical Content Knowledge (TPACK) learning by al-Qur'an hadith teachers to the learning outcomes of al-Qur'an hadith at MAS DDI Tellu Limpoe, Sidrap Regency has increased. From the research results from samples from each experimental class and control class, it shows that the learning outcomes of the Al-Qur'an hadith from the experimental class which was given the application of Technological Pedagogical Content Knowledge (TPACK) were much higher than the control class which was not given the application of Technological Pedagogical Content Knowledge (TPACK). This is shown by the results of data analysis obtained from the experimental class and control class. The experimental class had an average pretest score of 81.05 and a posttest score with an average of 85.1, while the average pretest score of the control class was 81.00 and the posttest score was 83.15 on average. Thus, it is proven that classes with the application of Technological Pedagogical Content Knowledge (TPACK) experience increased learning outcomes compared to classes that are not given the application of Technological Pedagogical Content Knowledge (TPACK).

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## INTRODUCTION

Learning is the process of student interaction with educators and learning resources in a learning environment. Learning is assistance provided by educators so that the process of acquiring science and knowledge, mastering skills and habits, as well as forming attitudes and beliefs in students can occur. In other words, learning is a process to help students learn well. Learning is a complex internal process. What is involved in this internal process is the entire mental domain which includes the cognitive, affective and psychomotor domains. The learning process is experienced throughout a human's life and can occur anywhere and at any time. Learning has a similar meaning to teaching, although it has different connotations. In the educational context, teachers teach so that students can learn and master the content of the lesson until they achieve a specified objective (cognitive aspect), and can also influence changes in attitudes (affective aspect) and skills (psychomotor aspect) of a student. This learning process is a whole activity designed to teach students. In educational units, the learning process is carried out in an interactive, inspiring, fun and challenging manner, motivating students to participate actively in accordance with the students' talents, interests and physical and psychological development. Learning is essentially not just conveying messages but is also a professional activity that requires teachers to be able to use basic teaching skills in an integrated manner and create efficient situations. Therefore, in learning teachers need to create a conducive atmosphere and learning strategies that attract students' interest.

Quality learning is learning that is able to position educators appropriately so that educators are able to play their role appropriately according to students' learning needs. Quality learning really depends on the creative motivation of educators. Highly motivated learning supported by teaching that is able to facilitate this will lead to successful achievement of learning targets. Learning targets are a learning process with a typical pattern so that a goal can be achieved. Learning targets can be measured through changes in students' attitudes and abilities through the learning process. Good learning design, supported by adequate facilities, coupled with teacher creativity will make it easier for students to achieve their learning targets.

Teachers, as the spearhead in the world of education, are required to always be responsive and sensitive to various updates that occur around them. The teacher's job is to always increase scientific insight and improve the quality of education, so that what the teacher conveys to students is not out of date. Thus, teachers must be able to keep up with the rapid development of science, technology and information. Teachers are not only required to have Pedagogical Content Knowledge (PCK) skills but also apply technology in learning, so that technology, pedagogy and content have become one part of the teacher education program to prepare prospective teachers who apply technology in their teaching process.

Currently, technology in learning is developing very rapidly, this development is felt by both teachers and students. It is not surprising that the learning process in schools cannot be separated from the role of information technology. This can be seen from the activities of teachers and students in using computers and the internet at school, both for writing reports, creating exam questions, collecting assignments and as part of learning strategy models. The implementation of information technology makes the learning process more interesting, active and creative. The aim is to encourage the implementation of effective learning as stated in the contents of Minister of Education and Culture Regulation no. 65 of 2013 states that every teacher is obliged to apply information and communication technology in an integrated, systematic and effective manner according to the situation and conditions. In Permendikbud Number 22 of 2016 concerning Process Standards for Primary and Secondary Education, it is stated that process standards are criteria regarding the implementation of learning in basic education units in secondary education units to achieve graduate competency.

Seeing the importance of the teacher's position in improving the quality of education, teaching is also a profession that directly demands the professionalism of an educator to master the ability to teach a concept so that it is not only in the form of material but rather in the meaning of knowledge to students. This means that a teacher is not only required to master the content but also must be able to master how to teach that content to students. A teacher should have professional teaching skills so that the process of transferring knowledge to students can be accepted and understood by students well.

In implementing the independent curriculum, teachers are required to master pedagogical content and are also expected to be able to apply technology in learning. In realizing quality learning, a framework is needed to develop technology, pedagogy and learning materials. Several approach models that can be used in learning are Technological Pedagogical Content Knowledge (TPACK)

Technological Pedagogical Content Knowledge (TPACK) is a framework developed to describe the knowledge and skills required by teachers to effectively integrate technology in teaching and learning. Technological Pedagogical Content Knowledge (TPACK) is a conceptual framework that shows the integration of three knowledge that must be mastered by teachers, namely technology, pedagogy, and content. The principle of Technological Pedagogical Content Knowledge (TPACK) is the combination of technological, pedagogical and content knowledge that is applied according to the context. What this means is that quality teaching requires complex and interconnected nuances of understanding between the three main sources of knowledge, namely technology, pedagogy, content and how these three sources are applied

according to the context.

Technological Pedagogical Content Knowledge (TPACK) is a framework for integrating technology into the learning process. In line with this explanation. Technological Pedagogical Content Knowledge (TPACK) is the knowledge needed to integrate technology into the learning process. The professionalism inherent in teachers requires mastery both theoretically and practically in organizing technology, pedagogy and learning content. Based on the explanations outlined by several experts above, it can be concluded that Technological Pedagogical Content Knowledge (TPACK) is knowledge about how existing technology can be used to support the learning process so as to reduce students' academic procrastination attitudes. Through Technological Pedagogical Content Knowledge (TPACK), the teacher's ability to master learning technology can be seen.

The teacher's Technological Pedagogical Content Knowledge (TPACK) ability can be seen from the preparation of the Learning Implementation Plan (RPP) because it contains pedagogic elements, which can be seen from the methods used, content elements seen from the material and technological elements seen from the media used. Teachers' Technological Pedagogical Content Knowledge (TPACK) abilities must be adapted to technological developments and students' needs.

In connection with all of this, the big challenge for the world of Indonesian education, especially for schools and teachers, is to develop mastery of media or technology (media and technology literacy) to encourage increased learning in education. Regarding the global context, there is also the development of a pattern of teacher competency development, which is often referred to as "TPACK" or Technological Pedagogical Content Knowledge. In general, an educator is required to have comprehensive skills and extensive and holistic knowledge regarding material or content, science or pedagogy and maintaining technology in learning. The application of technology in learning is the existence of theory and practice in design, development, utilization, management, and evaluation of processes and resources for learning. This is a complete unit to improve student learning outcomes in the learning process in educational units.

## METHODOLOGY

The research method used in this research is a quantitative experiment, where this method is a research method used to examine certain populations and samples. The type of research used in this research is a quasi-experimental design, where the groups are not chosen randomly but use two groups, namely the experimental group, namely the group that was given scientific Technological Pedagogical Content Knowledge (TPACK) treatment, and the control group, namely the group that was treated with conventional learning. . The class selected as the experimental group was class XI IIS A with a total of 20 students, and the class selected for the control group was class XI IIS B with a total of 20 students.

## RESULTS AND DISCUSSION

### **Technological Pedagogical Content Knowledge (TPACK) abilities of Al-Qur'an Hadith teachers at MAS DDI Tellu Limpoe Sidrap Regency**

Technological Pedagogical Content Knowledge (TPACK) capabilities refer to the effective integration of technological knowledge (IT), pedagogical knowledge (P), and content knowledge (C) by an educator in a teaching context. Technological Pedagogical Content Knowledge (TPACK) is a conceptual framework designed to explain how educators can use technology effectively to support student learning. It is the same as at MAS DDI Tellu Limpoe, Sidrap Regency in the application of Technological Pedagogical Content Knowledge (TPACK) which is applied in learning the Al-Qur'an and Hadith. In this application there are several components related to the mastery and application of Technological Pedagogical Content Knowledge (TPACK) that must be known and mastered, namely:

Technological Knowledge, namely educators understand available technology and how to effectively use it in the teaching context. For example, the ability to use hardware, software and other digital tools to support learning.

Pedagogical Knowledge, namely educators know effective teaching strategies and methods so that they can master the class in terms of students' learning models, the teaching strategies that need to be given and what approaches to take so that students can easily understand the teaching material, especially in this Al-Qur'an hadith lesson .

Content Knowledge, namely educators mastering the material to be taught to students. in-depth understanding of the subject matter or curriculum being taught. Teachers need to have strong knowledge about the particular topic or subject they teach.

Technological Pedagogical Content Knowledge (TPACK) capabilities are not only about mastering technology alone, but also about how to combine technology with effective teaching strategies and in-depth content knowledge. It helps educators create meaningful learning experiences and expands educational possibilities in the classroom.

From the results of the research carried out, in this discussion it will be explained that in principle classroom action research is carried out to obtain an overview of the quality of learning and the quality of

results through the application of Technological Pedagogical Content Knowledge (TPACK) learning by al-Qur'an hadith teachers to al-Qur'an learning outcomes. Qur'an hadith at MAS DDI Tellu Limpoe Sidrap Regency which was achieved through a series of actions. The quality of learning is indicated by the tendency of teacher and student activities in the learning process, and the quality of learning outcomes which can be seen from the students' classical learning completeness.

The application of Technological Pedagogical Content Knowledge (TPACK) can cover 8 domains covering 5 areas, namely field of study, students, curriculum, assessment, and teaching practice. The eight domains for practical application of Technological Pedagogical Content Knowledge (TPACK) are:

a. Using ICT to assess students. Examples include using Microsoft Excel to process grades, using online quizzes to assess student participation, using chat groups to understand how to communicate via social media and so on.

Using ICT to understand learning material. For example, packaging abstract material into video animation, simulating machine working principles using animation, providing reference links for further learning and so on.

Integrating ICT to understand students. For example, asking students to visualize their ideas using Corel Draw, using WhatsApp or email to accommodate student complaints, providing online consultation forums and so on.

Integrating ICT in curriculum design including policies. For example, involving teachers in developing digital learning resources, regular discussions on digital content development, including programs to increase ICT literacy for teachers and so on

Integrating ICT to present data. For example, using ICT to present academic data, student master data, student transfer data, create graphs and so on

Integrating ICT in learning strategies. For example, developing web-based learning, managing online discussion forums, conducting teleconferences, using learning videos to motivate students and so on.

Applying ICT for learning management. For example, using ICT for online attendance, entering and processing student grades, using academic information systems and so on.

Integrating ICT in teaching contexts. For example, providing online-based learning options, creating a learning environment rich in digital resources, utilizing technology-based learning resources and so on.

In improving student learning outcomes, the Technological Pedagogical Content Knowledge (TPACK) learning model is the most appropriate thing to do because the learning system uses technology. Apart from that, several studies have proven that there is an increase in learning outcomes for students.

At Madrasah Aliyah DDI Tellu Limpoe, Sidrap Regency, the Technological Pedagogical Content Knowledge (TPACK) learning model is also implemented by educators at the Madrasah, including in the Al-Qur'an Hadith subject which is the object of this research. By implementing the Technological Pedagogical Content Knowledge (TPACK) learning model, it makes it easier for educators to integrate technology with pedagogical content.

In implementing the Technological Pedagogical Content Knowledge (TPACK) learning model at Madrasah Aliyah DDI Tellu Limpoe, Sidrap Regency, one of them was in the subject of Al-Qur'an Hadith, the efforts made by the head of the madrasah for teaching staff were to provide training to improve Educators' skills and knowledge in using IT in the learning process, one of which is the application of Technological Pedagogical Content Knowledge (TPACK) learning.

### **Effectiveness of the application of Technological Pedagogical Content Knowledge (TPACK) by al-Qur'an hadith teachers at MAS DDI Tellu Limpoe, Sidrap Regency**

Effectiveness is generally viewed as the level of achievement of operational and operational goals. Basically, effectiveness is the level of achievement of assigned tasks and targets. Effectiveness is how well the work is done, the extent to which someone produces output as expected. In this research, to be able to see the results of the application of Technological Pedagogical Content Knowledge (TPACK) learning in Al-Qur'an hadith learning at MAS DDI Tellu Limpoe, Sidrap Regency, the researcher took two classes to serve as samples in this research, namely the experimental class and control class. The experimental class is the class that is given learning using the Technological Pedagogical Content Knowledge (TPACK) system, while the control class is the class with the conventional learning system.

In the application of Technological Pedagogical Content Knowledge (TPACK) learning in the Al-Qur'an Hadith subject at MAS DDI Tellu Limpoe, there are 4 main things which are the basis for the application of Technological Pedagogical Content Knowledge (TPACK), namely:

#### **Technological Knowledge (TK)**

In the application of this technological knowledge, in its implementation educators use digital technology in the learning process. And in this research, the learning process in the experimental class, educators used learning videos by showing and illustrating complex concepts in the form of learning videos broadcast live or from the YouTube application that were easy for students to understand. Apart from

learning videos, educators also use the Google Classroom application as a tool in online learning to provide assignment learning materials and additional resources to students.

### **Pedagogical Knowledge (PK)**

Related to this pedagogical knowledge, educators are able to choose learning theories in designing learning strategies according to students' needs, manage effective classes, create learning designs according to teaching materials, have diverse teaching skills in the classroom, as well as a student-based approach so that educators are able to understand the needs and interests of students and respond to them in learning design.

### **Pedagogical Content Knowledge (PCK)**

In this example of the application of Pedagogical Content Knowledge (PCK) by educators, educators are directly involved and assist students in the content and learning process of students. Educators are able to overcome students' difficulties in understanding difficult teaching material, are able to adapt learning materials so that students are able to understand teaching materials well, adjust evaluations and prepare learning plans.

### **Technological Content Knowledge (TCK)**

In Technological Content Knowledge (TCK), educators know about how material is accessed, organized and presented using technology. Educators are able to integrate technology in learning so that it makes it easier for students to understand teaching materials, use learning aids, develop technology-based teaching materials and have technical skills in using technology.

To apply the results of experiments carried out by researchers in implementing Technological Pedagogical Content Knowledge (TPACK) learning in learning is not an easy thing to do because educators are required to be able to master things related to the discussion above. Likewise in learning the Al-Qur'an hadith which is the main thing in this research. With different implementations of the control class and experimental class. The application carried out by educators in the control class is a conventional teaching system as usual, where in the learning process educators mostly explain the material using the lecture method, give assignments in the form of memorizing verses and hadith, answering multiple choice questions and essays, as well as group discussions according to the teaching material. However, on the contrary, in the experimental class, educators apply Technological Pedagogical Content Knowledge (TPACK) in learning where educators integrate teaching materials with technology in the form of learning videos, online applications, and other technological media platforms. With the aim that students are much more interested and able to understand the material quickly when the learning process is related to or assisted by technology, as we know that humans now live side by side with technology in everyday life. Therefore, the learning process should be integrated with technology.

### **Implementation of Technological Pedagogical Content Knowledge (TPACK) learning in Al-Qur'an Hadith subjects at MAS DDI Tellu Limpoe Sidrap Regency**

Technological Pedagogical Content Knowledge (TPACK) is a framework for educators to understand the type of knowledge needed to optimize teaching practices and understand models for integrating technology into the learning environment.

As an educator, the most important thing you need to pay attention to is how to organize strategies so that students are interested in the learning process and are able to understand the teaching material being presented. In the world of education today, something that cannot be separated from education is the use of technology in learning. The application of TPACK in learning is the most appropriate thing for an educator to do, especially in the subject of Al-Qur'an Hadith which is the object of current research.

From the research results obtained from the test evaluation results, the level of student learning outcomes in the Al-Qur'an Hadith subject at MAS DDI Tellu Limpoe, Sidrap Regency increased from the experimental class which was used as the research sample.

### **CONCLUSION**

1. Mastery of Technological Pedagogical Content Knowledge (TPACK) for an educator is very necessary so that the learning process can take place well and can be understood by students.
2. There was an increase in learning outcomes in the Al-Qur'an Hadith subject after the researchers took samples of 2 classes, each of which was used as an experimental class and a control class. The increase in learning outcomes was obtained by the experimental class, where this class was the object of implementing TPACK learning.

## RECOMMENDATION

Head of MAS DDI Tellu Limpoe Kanupaten Sidrap to be able to control educators and students so that they are able to think critically and master TPACK so that all educators in the madrasah environment can apply TPACK learning to improve student learning outcomes.

Educators at MAS DDI Tellu Limpoe Sidrap Regency are expected to be able to realize the pedagogical competencies they already possess in carrying out their duties as educators in educating the nation's next generation.

To the students of MAS DDI Tellu Limpoe Sidrap Regency to be active and responsive to the teacher's guidance and direction in delivering teaching material so that an active learning process can be created.

Remembering that researchers are just ordinary people who are not free from shortcomings and errors and this research is still very far from perfect so what the author produces is not the final result, so further research needs to be conducted, especially regarding the application of Technological Pedagogical Content Knowledge (TPACK) learning. ) al-Qur'an hadith teacher on the results of studying al-Qur'an hadith at MAS DDI Tellu Limpoe, Sidrap Regency.

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