

Analysis of the Application of Technological Pedagogical And Content Knowledge (TPACK) in Learning Islamic Cultural History in class X Madrasah Aliyah

Analisis Penerapan *Technological Pedagogical And Content Knowledge* (TPACK) dalam Pembelajaran Sejarah Kebudayaan Islam di kelas X Madrasah Aliyah

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Cisia Padila¹, Pela Safni¹, Sasmi Nelwati¹, Misra¹

¹Universitas Islam Negeri Imam Bonjol Padang, Indonesia

*E-mail: 2320010009@uinib.ac.id

Abstract

This research aims to analyze the application of Technological Pedagogical and Content Knowledge (TPACK) in the context of learning the History of Islamic Culture in class X Madrasah Aliyah. By considering the complexity of Islamic cultural history material and the need for technology integration in modern learning, this research explains how teachers can optimize technology, pedagogy and content knowledge to increase learning effectiveness. The research methods used include observation, interviews with teachers, and documentation. The research results show that teachers in class are more or less different from K13. Analysis of TPACK at the teacher level proves that pedagogical and content knowledge is good, but there is room for improvement in integrating technology more effectively. It was found that teachers who can manage technology well can create a more dynamic and exciting learning environment for students. The conclusions of this research emphasize the importance of teacher training and professional development in terms of TPACK. Recommendations include providing adequate resources and support to help teachers overcome barriers in adopting this approach. Overall, this research provides in-depth insight into the challenges and potential of implementation.

Keywords: TPACK, history of islamic culture, madrasah

Abstrak

Penelitian ini bertujuan untuk menganalisis penerapan *Technological Pedagogical And Content Knowledge* (TPACK) dalam konteks pembelajaran Sejarah Kebudayaan Islam di kelas X Madrasah Aliyah. Untuk mempertimbangkan kompleksitas materi sejarah kebudayaan islam dan kebutuhan integrasi teknologi dalam pembelajaran modern, penelitian ini menjelaskan bagaimana guru dapat mengoptimalkan pengetahuan teknologi, pedagogi, dan konten untuk meningkatkan efektivitas pembelajaran. Metode penelitian yang digunakan mencakup observasi, wawancara dengan guru, dan dokumentasi. Hasil penelitian menunjukkan bahwa guru di kelas X Madrasah Aliyah telah mencoba menerapkan TPACK, tetapi masih ditemui beberapa kendala, terutama terkait dengan kurangnya waktu pembelajaran sehingga beberapa materi kurang mendalam disampaikan dan kesulitan guru dalam penilaian karena ada beberapa aspek baru yang dipakai dalam kurikulum merdeka ini yang sedikit banyaknya berbeda dengan K13. Analisis TPACK pada tingkat guru membuktikan bahwa pengetahuan pedagogi dan konten sudah cukup baik, namun ada ruang untuk peningkatan dalam mengintegrasikan teknologi secara lebih efektif. Ditemukan bahwa guru yang dapat mengelola teknologi dengan baik mampu menciptakan lingkungan pembelajaran yang lebih dinamis dan menarik bagi siswa. Kesimpulan dari penelitian ini menekankan pentingnya pelatihan dan pengembangan profesional guru dalam hal TPACK. Rekomendasi termasuk penyediaan sumber daya dan dukungan yang memadai untuk membantu guru mengatasi hambatan yang mungkin muncul dalam mengadopsi pendekatan ini. Secara keseluruhan, penelitian ini memberikan wawasan mendalam tentang tantangan dan potensi penerapan

Kata Kunci: TPACK, sejarah kebudayaan islam, madrasah

1. Introduction

Education involves all elements that affect every individual's growth, change, and state. This transformation consists of developing learners' potential, including improving their knowledge, skills, and attitudes in everyday life (Pristiwanti et al., 2022). The development of science and technology has significantly impacted various aspects of human life, including the education sector. As these developments are constantly changing and dynamic, expertise in using media in an educational context is crucial for every educator. In line with the advancement of science and technology, the teaching and learning process at all levels of education continues to evolve, demanding various educational media to achieve optimal learning outcomes. In achieving effectiveness and efficiency in the teaching and learning process, using multiple media or tools in teaching supports teachers in delivering material so that students can easily understand the material (Nurmadiyah, 2016).

Learning is a series of activities to help learners achieve optimal learning outcomes. Learners' success in learning can be measured through changes in their attitudes and abilities. Learning effectiveness occurs when learners are actively involved in learning activities, experience first-hand, and gain understanding through the learning process. The quality of the learning process can be measured through the involvement of human elements (students and teachers), materials (such as books, blackboards, chalk, and learning equipment), facilities (rooms, classrooms, audio-visual media), and interactions that affect the achievement of learning objectives (Manidhom & Rahmawati, 2022).

In line with the definition of learning above, of course, behind learning, some media supports the success of learning. When talking about educational media, it relates to the tools used by teachers during the teaching process in the classroom. Learning tools are closely related to student learning methods because students also use the devices teachers use to receive the material being taught. The level of student success in understanding the subject matter depends on the completeness and accuracy of the learning tools used. If students can easily understand and master the material, their learning process will become more active and developed. Efforts are essential to provide good and comprehensive learning tools so that teachers can teach effectively and students can learn well. Collaboration between teachers and educational media is needed to facilitate students' learning process. Teachers can provide individualized training and guidance, while educational media can deliver information clearly, interestingly and thoroughly. (Nurmadiyah, 2016).

The subject of Islamic Cultural History (SKI) is an integral part of the curriculum in Islamic religious-based schools or madrasah. Many students find SKI less attractive because it is often associated with history, which is considered monotonous and passive during the learning process. These factors lead to a lack of attractiveness in SKI subjects (Manidhom & Rahmawati, 2022).

Understanding Islam's role and contribution to world history is exceptional in the curriculum, especially in Islamic Cultural History. In the modern era characterized by technological advances, the application of Technological Pedagogical and Content Knowledge (TPACK) becomes very important to improve the quality of learning. This article aims to evaluate how grade X teachers at Madrasah Aliyah Negeri 1 Kota Padang implement TPACK in the context of learning Islamic Cultural History (SKI).

In looking at the evolution of technology, both analogue and digital, and how incorporating technology in pedagogy adds complexity to the teaching process. The TPACK framework, which refers to Technological Content Pedagogical Knowledge, is described as a complex relationship between three knowledge domains: content, pedagogy and technology. The interaction between

these three knowledge domains, both theoretically and in implementation, results in the kind of adaptive knowledge required to integrate technology in teaching successfully. (Koehler et al., 2013)

The TPACK framework aims to extend this tradition of research and scholarship by incorporating technology into the types of knowledge that teachers should consider during the teaching process. The TPACK framework seeks to aid the development of more effective methods to discover and explain how technology-related professional knowledge is implemented and applied in teaching practice. By detailing the types of knowledge required by teachers, including content, pedagogy, technology, context, and the interactions between them, educators can understand the differences in the level of technology integration. Furthermore, the TPACK framework opens up various opportunities to foster research in teacher education, professional development, and teacher utilization of technology. (Koehler et al., 2013).

Technological Pedagogical and Content Knowledge (TPACK) in the context of Islamic Cultural History (IH) learning involves using media that integrates content, technology and pedagogical understanding. This model can be used as a framework for teachers in designing learning materials, which are implemented through the planning, implementation and evaluation stages of learning. By using this approach, teachers indirectly encourage the creation of innovative learning and improve the skills of using technology in the learning process so that students can understand teaching and learning activities more effectively and efficiently (Hasanah, 2023). Bidang TPACK mencakup tujuh elemen utama, yang mencakup:

- a. Pedagogical knowledge,
- b. Content knowledge,
- c. Technology pedagogy knowledge,
- d. Technology content knowledge,
- e. Pedagogical content knowledge,
- f. Technology pedagogy content knowledge (Farikah & Al Firdaus, 2020).

Many students have close involvement with technology, and seeing the school's ability to provide technological facilities, educators and educational institutions can adopt the TPACK (Technological, Pedagogical, Content Knowledge) approach to manage the educational process in the digital era. This research aims to explain the implementation of the TPACK approach in Madrasah Aliyah Negeri 1 Kota Padang in the implementation of education in the digital era. (Hanik et al., 2022).

2. Literatur Review

Teachers have a crucial role in implementing education reform, primarily focusing on the foundations of education. Teachers are centrally responsible for guiding and shaping students' intellectual development. A teacher's quality and expertise are crucial factors in nation-building, establishing values and emphasizing learning over teaching. Factors such as academic qualifications, content knowledge, competence level, pedagogical knowledge and teacher willingness play a significant role in the dynamics of the teaching-learning process. (Nurdiansyah, 2019).

Qualified teachers have the potential to generate tremendous change in society, by adopting an approach that favours a holistic perspective of education, in line with the National Education Policy 1998-2010. The criteria for a successful teacher include a deep understanding of the subject matter, the application of effective teaching methods and good management skills, in line with the views of the National Education Policy 1998-2010. UNESCO (2006). (Silasa, 2020) menyoroti pentingnya persiapan yang matang sebelum memasuki profesi pengajaran untuk mencapai

keunggulan pengajaran dan komitmen profesional. Dalam proses mengajar, pemanfaatan teknologi memiliki peran yang sangat penting, memastikan keterlibatan siswa dalam proses pembelajaran. (Nuryani & Handayani, 2020) menggambarkan inisiatif ini sebagai suatu keharusan agar guru dapat memenuhi tuntutan masa kini dalam mengajar siswa (Ali et al., 2020).

The existence of four strong competencies strongly influences the success of a teacher in carrying out learning. The provisions regarding teacher competence are regulated in Law No. 14 of 2005 concerning Teachers and Lecturers. This law explains that "competence refers to knowledge, skills and behaviours that teachers or lecturers must own, internalize and master in carrying out their professional duties. This includes educational, personality, social, and professional competence obtained through professional education." (Wijaya, 2006). Each of these competencies has its role and responsibility in strengthening the quality of a teacher in organizing curriculum and learning in a school or madrasah environment. (Lesnida et al., 2022).

Teachers are expected to have educational competence that includes understanding all sub-capabilities and indicators of academic ability. This aspect consists of the ability to identify the characteristics of learners, mastery of learning theories and principles, use of information and communication technology (ICT), potential development, ability to communicate effectively, sympathetic attitude, polite behaviour, implementation of evaluation and assessment of learning outcomes, as well as the use of evaluation and results for the benefit of learning reflection. (Depdiknas, 2006) as explained by (Lesnida et al., 2022).

Technological pedagogical content knowledge, or Technological Pedagogical and Content Knowledge (TPACK), refers to teachers' understanding of facilitating student learning through specific content by applying pedagogical approaches. TPACK is recognized as a framework in educational research used to design learning models that combine three main aspects: technology, pedagogy and content. According to Mishra & Koehler, quality learning requires a complex and interrelated understanding of the three primary sources of knowledge: technology, pedagogy and content, and their appropriate application in the learning context. (Hasanah, 2023). In the increasingly dominant context of online learning, it is essential to understand Technological Pedagogical Content Knowledge (TPACK), given the various supporting factors needed to achieve practical learning objectives (Aditama & Pratiwi, 2021).

Research on Technological Pedagogical Content Knowledge (TPACK) has recently increased. Several review studies in educational technology have highlighted the issues and trends developed in TPACK research over the past few decades. However, a specific review of language teachers' knowledge of language teaching with technology is still limited. To fill this research gap, this review aims to understand the panorama of TPACK research related to language teachers published between 2011 and 2019. The analysis results show that 51 studies were identified, with the peak of publications occurring in 2015, and most of them were conducted in Asia and the Middle East. The articles can be grouped into four main categories:

- a. Exploration of TPACK,
- b. TPACK review,
- c. TPACK development, and
- d. TPACK Implementation

In particular, research exploring Technological Pedagogical Content Knowledge (TPACK) shows variations in teachers' confidence levels in TPACK competencies. However, it generally points to the dominance of technology use in traditional, teacher-centred teaching contexts. Studies related to TPACK assessment highlight efforts to contextualize survey items to overcome difficulties distinguishing the seven TPACK sub-domains. However, challenges remain, perhaps

due to the difficulty of applying all seven sub-domains in daily practice. This could be the focus of further research. Research on TPACK development suggests that effective interventions involve language teachers' understanding of the TPACK framework, modelling by experienced educators and teachers' involvement in collaborative lesson design. Finally, research on TPACK implementation shows that TPACK-based language learning courses and platforms are perceived as valuable and practical. These findings provide potential directions for further research (Tseng et al., 2022). Schools are currently facing obstacles, including difficulties in implementing the TPACK or Knowledge Technology Pedagogy Content model, where many teachers focus more on improving their certification than their professionalism. Therefore, it is suggested that teachers should be more oriented towards improving the quality of their professionalism. (Ananda et al., 2022).

3. Research Methods

This qualitative research emphasizes naturalistic analysis, using observation, interview, and documentation study methods. In this qualitative research context, understanding the material is noted from the subject's perspective without neglecting efforts to make interpretations and design conceptual schemes. (Nugrahani & Hum, 2014). This approach highlights research that focuses more on subjective elements while recognizing that there are realities beyond the individual that can influence the subject's actions towards those realities. (Subadi, 2006). The research focus in this article covers three main aspects: (1) planning the application of Technological Pedagogical And Content Knowledge (TPACK) in learning Islamic Cultural History (SKI) in class X Madrasah Aliyah Negeri 1 Kota Padang, (2) implementing the model in class X Madrasah Aliyah Negeri 1 Kota Padang, and (3) evaluating its application. Data analysis was conducted through the stages of collection, presentation, and conclusion drawing, while data validity was tested through triangulation of sources and techniques.

4. Results and Discussion

Based on the results of research at MAN 1 Padang City, it was found that the Merdeka curriculum has been implemented for one year in phase E for class X, while classes XI and XII are still using the 2013 curriculum. The implementation of this curriculum refers to Permendikbudristek No. 5 of 2022, with guidelines sourced from guidebooks published by the Directorate of Madrasah KSKK Directorate General of Islamic Education of the Ministry of Religious Affairs of the Republic of Indonesia, from now on referred to as Kemenag because Madrasah Aliyah is under the auspices of Kemenag. The implementation of the Merdeka curriculum consists of three stages: planning or preparation, implementation, and assessment. The planning stage involves creating or preparing teaching tools that include learning outcomes, learning objectives, flow of learning objectives, and learning plans, all of which are documented in the teaching module. These steps are under the Learning and Assessment guidebook for RA, MI, MTs, MA, and MAK published by the Directorate of KSKK Madrasah, Directorate General of Islamic Education, Ministry of Religious Affairs of the Republic of Indonesia. (Qodriyah, 2023).

At the implementation stage of the Merdeka curriculum, of course, several challenges will arise because this curriculum is still relatively new. Initially, the Merdeka curriculum was known as a prototype curriculum, which was later improved into a more flexible curriculum. This curriculum emphasizes core material and the development of student character and competencies and is now known as the Merdeka curriculum.

The teacher always prepares the planning process for applying Technological Pedagogical And Content Knowledge (TPACK) in SKI learning before learning begins. Media such as

projectors/LCDs, learning videos, PPTs, and lesson plans contribute to the smooth learning process. The implementation of this model by teachers and students is carried out optimally, increasing the effectiveness and understanding of students towards SKI learning.

In the learning implementation stage, teachers choose to give learners freedom in finding learning resources, using learning media, and choosing learning models that suit learners' preferences but still follow the guidelines provided by the teacher. This approach aims to allow learners to experience contextualized and inclusive learning. In addition, this approach also aims to implement differentiated learning, where the focus of learning is learner-centred, while the teacher acts as a facilitator and motivator.

Implementing the project in phase E is integrated with the project to strengthen the Pancasila Learner Profile and Rahmatan Lil Alamin Learner Profile, with a project allocation of 25% for each subject. The implementation of the project to enhance the Pancasila Learner Profile and the Rahmatan Lil Alamin Learner Profile involves more than two subjects, along with the theme "The use of Kato Nan Ampek in Minang Kabau customs", which has been implemented in Madrasah Aliyah Negeri 1 Kota Padang.

In the context of the SKI (History of Islamic Culture) subject, the project is integrated with the Akidah Akhlak subject, with the dimensions of faith, fear of God Almighty, and carrying the value of rahmatan lil alamin tawazun (balanced) and ta'adub (civilized). The final stage of this process is assessment, which includes diagnostic, formative, and summative assessments. Some teachers only implement formative and summative assessments. In contrast, others involve all three, including diagnostic assessment, which involves written tests and observation through structured questions and answers conducted 2-3 times in class.

Formative assessment uses question-and-answer methods, quizzes and class discussions to evaluate understanding of daily material and identify students who need more attention, allowing teachers to refine and adjust learning approaches. Summative assessment involves written tests in the form of multiple choice and essays, as well as oral examinations at the end of the meeting to give students a final grade and evaluate the overall effectiveness of learning (Qodriyah, 2023). The evaluation of SKI learning based on Technological Pedagogical And Content Knowledge (TPACK) makes it easier for teachers to deliver material and improve student understanding, which in turn can improve student learning outcomes. (Hasanah, 2023).

In its implementation in the field, an Islamic Cultural History (IHR) teacher at MAN 1 Padang City, who also acted as a resource person, stated that in the learning that had been carried out, the teacher had applied the TPACK model following its components. The teacher has prepared teaching modules, tools, and other elements to support learning. Although the independent curriculum has only been implemented in grade X and has been implemented for the past year, this SKI teacher stated that he did not experience significant difficulties in implementing the relatively new independent curriculum. However, the teacher revealed a slight challenge related to the placement of Abbasid dynasty material, which is usually taught in grade XI in the 2013 Curriculum (K13). Still, in the independent curriculum, it is placed in grade X due to limited lesson hours, making it difficult to divide time considering the dense material.

5. Conclusion

From the research results, it can be seen that teachers have made maximum efforts for the success of the learning programme. Starting from planning to evaluation, it can be concluded that teachers have tried their best to prepare learning tools, provide infrastructure, and evaluate learning. However, there are no obstacles that are too difficult for teachers in implementing TPACK. The main obstacle faced is the limited learning time and the density of the material,

which results in limitations in delivering some learning materials. Teachers also experienced some difficulties in the assessment process because some aspects of the assessment were more specific than the previous curriculum, so teachers faced challenges. As a suggestion for future research, it is hoped that it can explore this topic in more depth and detail and provide other interesting findings in the subsequent study.

6. Reference

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