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TPACK-Approach with SAMR Model in Social Studies Learning: A Literature Review

Piki Setri Pernantah[1]

[1]Universitas Riau, Pekanbaru, Indonesia
Bina Widya KM Campus. 12.5, Simpang Baru, Pekanbaru City, Riau Province
Email: piki.setri@lecturer.unri.ac.id; piki.pernantah@upi.edu.ac.id

ABSTRACT: The transformation of social studies learning in the 21st century era is indeed necessary to continue to be carried out, one of which is how to integrate technology into social studies learning in schools. This is because integrated social studies learning by accompanying the effective use of technology can add an important dimension to student learning. Efforts to integrate technology into social studies learning can be done through the TPACK approach and the SAMR model. Both models offer frameworks that can assist social studies teachers in adopting technology effectively in social studies learning in the classroom. The method used in this study is a qualitative approach with a literature method involving the analysis and synthesis of relevant literature to explain or understand this study. The implications of the SMAR model TPACK approach allow social studies teachers to increase student involvement and understanding of social studies learning materials. This certainly creates a richer and more meaningful learning experience, as well as helping students develop critical thinking skills that are relevant to today's 21st century competency demands.

Keywords: TPACK approach, SAMR model, Social Studies Learning

ABSTRAK: Transformasi pembelajaran IPS di era abad 21 ini memang perlu untuk terus dilakukan, salah satunya perihal bagaimana integrasi teknologi ke dalam pembelajaran IPS di sekolah. Sebab, pembelajaran IPS yang terpadu dengan menyertai penggunaan teknologi secara efektif dapat menambah dimensi penting dalam pembelajaran siswa. Upaya mengintegrasikan teknologi ke dalam pembelajaran IPS dapat dilakukan melalui pendekatan TPACK dan model SAMR. Kedua model ini menawarkan kerangka kerja yang dapat membantu guru IPS dalam mengadopsi teknologi secara efektif dalam pembelajaran IPS di kelas. Metode yang digunakan pada penelitian ini adalah pendekatan kualitatif dengan metode literatur dengan melibatkan analisis dan sintesis literatur yang relevan untuk menjelaskan atau memahami kajian ini. Implikasi pendekatan TPACK bermodel SMAR ini memungkinkan guru IPS untuk meningkatkan keterlibatan dan pemahaman siswa terhadap materi pembelajaran IPS. Hal ini tentu menciptakan pengalaman belajar yang lebih kaya dan bermakna, juga membantu siswa mengembangkan keterampilan berpikir kritis yang relevan dengan tuntutan kompetensi abad 21 saat ini.

Kata Kunci: Pendekatan TPACK, model SAMR, Pembelajaran IPS

A. INTRODUCTION

The development of technological network infrastructure over the past 1 decade has shown a significant increase in internet usage and how it should have an impact and benefit in social studies learning. Many social studies teachers consider that preparing students for the responsibility of being true citizens (good citizenship) is the most important thing in social studies learning.

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One of them can guide and educate students to learn to explore their world critically with interactive technology. This is because mastery of technology and resources will be able to improve the quality of their learning experience in social studies classes. However, it is necessary to pay attention and note for social studies teachers that technology integration is not just to facilitate teachers' work or only to improve the social studies material delivery system from traditional to technology based. However, the integration of technology into social studies learning must be seen as an effort to transform social studies learning for the better, that social studies teachers must have a better understanding of why and how current and developing technological tools can be used effectively in social studies learning and have an impact on improving student competence in social studies.

In addition, referring to the Regulation of the Minister of National Education of the Republic of Indonesia No. 16 of 2007 concerning Academic Qualification Standards and Teacher Competencies, it is stated that one of the core competencies of teachers is to be able to utilize information and communication technology for the purpose of implementing educational development activities. This is because utilizing technology for a learning will create a more interesting, varied, and active learning process (Hasibuan, R., et al, 2023). Teachers who skillfully utilize technology can create a dynamic and impactful learning environment for students in social studies learning (Aisyah, S., et al, 2024).

Doolittle, P. E., et al (2003) have also explicitly advocated the integration of technology into social studies classes to change the content and key skills in social studies learning. This is also corroborated by the National Council for the Social Studies explaining that integrated social studies teaching and learning include effective use of technology that can add important dimensions to student learning (NCSS, 1994). NCSS explained that integrated social studies teaching and learning by accompanying the effective use of technology can add an important dimension in student learning. Because, in the reality in the field, although the encouragement to integrate technology into social studies classes has often been encouraged, its application in the field is still arguably underdeveloped.

In fact, in the 21st Century, there has been a shift in the learning paradigm which is marked by changes in technology, media, and curriculum (Nafisah, D., 2020). For this reason, the integration of technology into social studies learning should continue to be developed and various innovations should be carried out to encourage active, contextual, collaborative, and problem-based social studies learning. This is because technology will also help students develop a deeper, contextual, and meaningful understanding when used properly and correctly. For this reason, efforts to integrate technology into social studies learning can be carried out through the TPACK approach and the SAMR model. Both models offer frameworks that can assist social studies teachers in adopting technology effectively in social studies learning in the classroom. The TPACK approach will help teachers understand and incorporate aspects of content knowledge, pedagogy, and technology into social studies learning. Meanwhile, the SAMR model also provides a framework that social studies teachers can understand so that they gradually use technology in learning. Through this strategy, it is hoped that social studies learning can become more interesting, interactive, and relevant to the needs and challenges of the 21st century.

B. METHOD

The method used in this study is a qualitative approach with a literature method involving the analysis and synthesis of relevant literature to explain or understand this study. This method requires a comprehensive literature search, both from scientific articles, books, and relevant documents. Creating a literature review involves the following stages: scanning or searching for literature, taking notes, compiling a literature review, writing a literature review, and building a bibliography (Rowley, J., et al, 2004). The stages of literature study carried out in this study begin by identifying the topic to be studied, conducting a literature search, selecting references, and evaluating sources relevant to the topic being studied, then conducting an in-depth literature analysis, and finally writing an article in accordance with the structure of the article that has been designed.

C. RESULTS AND DISCUSSION

The TPACK-approach is an approach developed from the Pedagogy Content Knowledge (PCK) approach which was first introduced by Shulman in 1986. As the name implies, TPACK is a learning approach by integrating technological and pedagogic developments to develop content or materials in education. Furthermore, Hanik, E. U., et al (2022) explained that the TPACK approach is a learning framework to process various new forms of learning that use the combination of three important components, including technology, pedagogic, and learning content/materials, and it consists of seven TPACK components, namely CK (Content Knowledge), PK (Pedagogy Knowledge), TK (Technology Knowledge), TPK (Technological Pedagogical Knowledge), TCK (Technological Content Knowledge), PCK (Pendagogical Content Knowledge) and TPACK (Technological Pedagogical Content Knowledge). The TPACK-approach can also be integrated with a model that can train students to independently gain new knowledge, and even provide opportunities for teachers to provide guidance to students in the classroom (Irmita, L., & Atun, S. (2018). From the two opinions above, it can be understood that social studies learning certainly has relevance to the study of the TPACK-approach. Even social studies learning is closely related to various content or materials in society, in accordance with the dynamic conditions of the 21st century which are very close to access and integration of technology. Through social studies learning, it is also able to train students to independently build and gain new knowledge.

In addition, the TPACK-approach also describes a framework that introduces knowledge, teachers need to teach effectively with a technology framework. TPACK has emerged as a key construct in educators' preparation to emphasize the importance of content orientation towards technology integration (Mouza, C., et al, 2014). This approach also makes it easier for teachers to master technology, namely by learning content so that students are motivated and active in learning (Suharyat, Y., et al, 2022). Where, Doolittle, P. E., et al (2003) has tried to develop an educational thought by integrating technology, especially social studies education. This is done in the hope of being able to transform social studies education as well as new directions to social studies educators regarding the use of technology to support the social studies learning process. Of course, the use of this technology is expected to be able to make social studies learning run more effectively and efficiently. In order to better understand what components need to be considered in the integration of the TPACK-approach in social studies learning, it can be seen in the figure below.

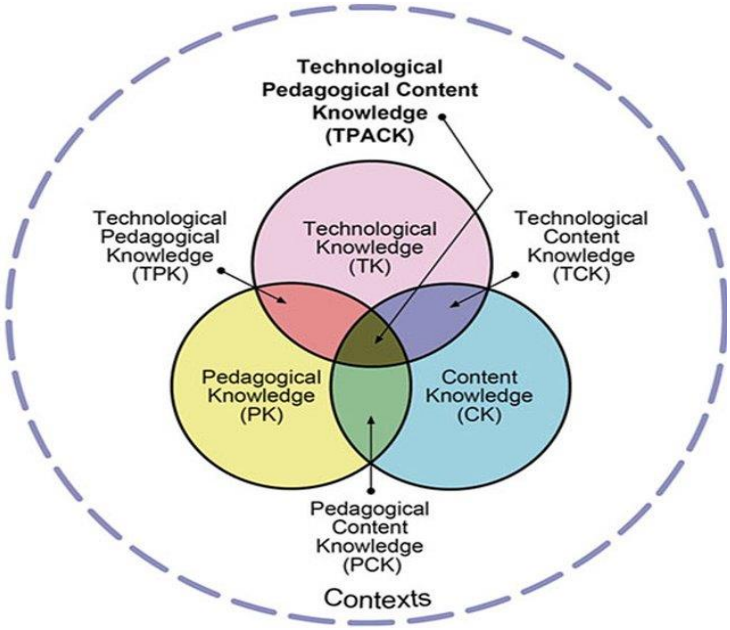

Figure 1. TPACK Framework and Knowledge Components
(Source: http://TPACK.org/)

The above TPACK dynamic framework describes the knowledge that social studies educators should have when designing and implementing social studies curriculum and teaching, while guiding their students in thinking and learning with technology in various social studies content or materials. In TPACK, there are several components related to and supporting this knowledge, namely technology knowledge (TK), content knowledge (CK), pedagogic knowledge (PK), pedagogic content knowledge (PCK), technological pedagogical knowledge (TPK), and technological content knowledge (TCK). The implications of TPACK's components in social studies education, can be seen in the table below:

Table 1. Implications of TPACK Components in Social Studies Learning

No	Component	Implication
1	TK	Basic knowledge of technology in social studies learning. For example, social studies teachers utilize software, google teams, online applications, and so on.
2	PK	Methods and strategies used in social studies learning. For example, learning methods and strategies such as project-based learning, case study learning, role playing or simulation, and so on.
3	CK	Social studies materials taught in the classroom For example, social studies teachers provide material on history, geography, economics, sociology, and the main concepts in social studies.
4	TPK	The use of technology to achieve social studies learning goals For example, social studies teachers use the Google Docs application for group discussions to expand student participation in class.

5	TCK	The relationship between technology and social studies learning materials For example, social studies teachers use Google Earth simulations to explain ASEAN material or Hindu Buddhist royal relics in Indonesia
6	PCK	Appropriate and effective methods in teaching social studies learning materials For example, social studies teachers must choose the most appropriate and effective method to teach the surrounding environment diversity material to students.
7	TPACK	Knowledge in choosing to use technology to implement strategies in social studies learning For example, social studies teachers design problem-based project learning that involves the use of digital tools in conducting mini research, collaboration, and presentations on social issues in society.

According to the TPACK-approach framework, the use of technology equipment is not just that teachers have access to the tools and learn skills on how to use them. However, social studies teachers must think carefully about the potential of technology in solving various pedagogical problems when designing or planning social studies lessons. The process of technology integration is not just to facilitate teachers' work or just to improve the traditional to technology-based social studies material delivery system. Furthermore, the integration of technology into social studies learning must be seen as an effort to transform social studies learning for the better, that teachers must have a better understanding of why and how current and developing technological tools can be used effectively in social studies learning and have an impact on improving student competence in social studies classes. The proposition that technology has a role in fulfilling social studies pedagogy is undeniable. However, the transformation from "technology as a teacher" to "technology as a partner" is very important for teachers and even students to understand so that they can achieve the goals of social studies education. This means that teachers must make decisions in terms of how to select, adapt and apply appropriate materials, pedagogy and technology that can meaningfully add value to learning with technology in the classroom, leading to student-centered learning.

Social studies learning that holds scientific principles is certainly very closely related to the theory of constructivist learning, when the TPACK-approach is implied to have many similarities and can support each other in creating meaningful, dynamic, and interactive social studies learning experiences. By combining content, pedagogical, and technological knowledge in the principles of the TPACK-approach, social studies teachers can design learning experiences that support the principles of constructivism, such as experiential, contextual, collaborative, and problem-solving learning by involving technology-based learning.

Research shows that teachers must further develop TPACK, this is necessary for the successful integration of technology in education (Rahmawati, N., et al, 2019). In other words, teachers' ability to manage learning by integrating learning strategies and technology is important to do (Dharmawati, D. M., et al, 2023). Teachers in the future must also be able to optimize

the potential that exists in students through the use of appropriate and directed technology so that it has an impact on social studies learning that is more dynamic and able to develop students' thinking skills. This will help students to construct a deeper and more meaningful experience and understanding of social studies material learned by students in class. The TPACK-approach is also able to increase student activity in critical thinking in line with student learning outcomes in the classroom (Rachman, A. B. R., et al, 2022).

Meanwhile, the SAMR (Substitution, Augmentation, Modification, Redefinition) model is a technology-based learning model popularized by Ruben Puentedura. The SAMR-model is a popular framework that can address the use of innovative technologies to transform learning (Puentedura, R. R, 2013). The SAMR model has also been used as a means for educators to address any pedagogical changes when introducing learning technologies to students (Hogan, 2010). The SAMR model can measure the parameters to the extent that technology can help learning and allows us to think about how learning can be facilitated through the use of technology (Hamilton, E. R., et al, 2016; Ummam, M. K., et al, 2021).

However, the integration of technology in learning is still not fully transformed according to the SAMR model because some learning activities are still at the level of substitution and augmentation, this means that they are still at the stage of replacing technology devices and using some simple applications that can support learning activities (Nakapan, 2016). In fact, expectations in the field are sought until the redefinition stage so that technology integration will provide a new experience for students when learning in the classroom, including in the social studies learning process.

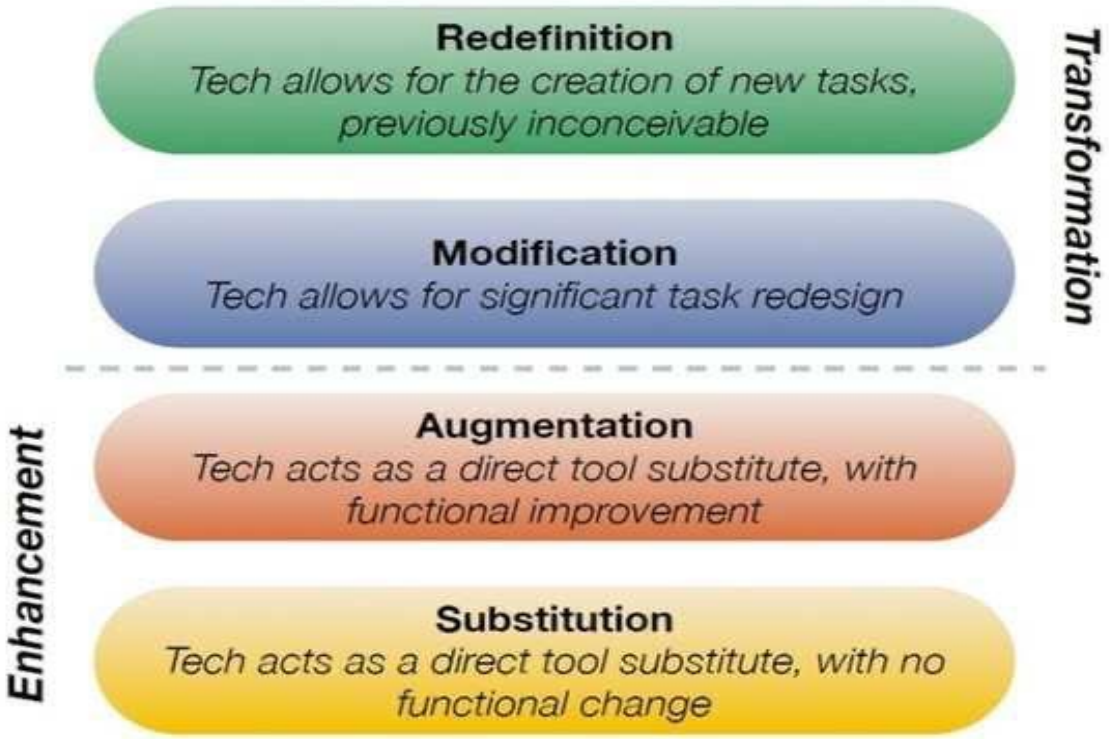

Figure 2. Stages of the SAMR Model
(Source: Mandanici, M, 2022)

The SAMR-model is useful for classifying types of transformation and has established four levels of technology integration in education (Hamilton et al., 2016; Sockalingam, N., et al, 2020). Going from a lower level (simple tool substitution), to this model pushing attention in a higher direction (content redefinition), emphasizing the cognitive value of finding tasks and possible performance that would not be possible without the use of technology. The final stage of Redefinition of the SAMR model also calls upon the three areas of knowledge (Content, Pedagogy, and Technology) in accordance with the TPACK-approach to redefine the tasks assigned to students. In its spirit, this SAMR model continues to encourage efforts so that teachers are able to understand and implement technology in education. So that by understanding and applying each level of the SAMR-model, social studies teachers can design a more effective, engaging, and relevant learning experience for students, helping them develop a deeper understanding of social studies materials by integrating technology in classroom learning. The implications of the SAMR-model in social studies education can be seen in the table below:

Table 2. Implications of the SAMR Model in Social Studies Learning

No	Stages	Implication
1	Substitution	At this level, technology replaces traditional/conventional tools without any significant functional changes when implemented in social studies learning. For example, a social studies teacher replaces a book with an e-book
2	Augmentation	At this level, technology replaces traditional tools with increased functionality. For example, social studies teachers use digital maps in social studies learning to replace ordinary maps
3	Modification	At this level, technology allows for significant modifications or changes to learning tasks. For example, social studies teachers encourage students to create documentary video assignment projects according to social studies material
4	Redefenition	At this level, technology encourages the creation of learning tasks that were previously impossible. For example, social studies teachers carry out social studies learning with the help of AR/VR technology so as to provide an immersive and immersive learning experience

At each level of the SAMR model from the table above allows for the use of increasingly in-depth and meaningful technology. For this reason, the TPACK Approach and the SAMR model can be used together. Where TPACK can help social studies teachers understand how to combine technology, pedagogy, and content in an effective way, while SAMR provides a framework to measure and improve the use of technology in the learning process. By combining the SAMR and TPACK-models, social studies teachers can also effectively integrate technology into their teaching.

Each level in the SAMR model requires different knowledge and skills within the TPACK framework, allowing teachers to increase student engagement and understanding of social studies learning materials. This certainly creates a richer and more meaningful learning experience, as well as helping students develop critical thinking skills that are relevant to the demands of 21st century competencies that students need to have in learning.

D. CONCLUSION

In the 21st Century era, there has been a shift in the learning paradigm, including the problem of using technology in learning. The integration of technology into social studies learning should continue to be developed and various innovations should be carried out to encourage active, contextual, collaborative, and problem-based social studies learning. This is because technology will also help students develop a deeper, contextual, and meaningful understanding when used properly and correctly. Efforts to integrate technology into social studies learning can be done through the TPACK approach and the SAMR model, which offers a framework that can assist social studies teachers in adopting technology effectively in social studies learning in the classroom. The implications of each level in the SAMR model require different knowledge and skills within the TPACK framework, allowing social studies teachers to increase student engagement and understanding of learning materials using technology. This implication also allows social studies teachers to design learning that is more dynamic, interactive, and relevant to real life in society. Thus, the use of technology is not only a tool, but also a transformer in the social studies learning process in schools.

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