

Investigating the Technological Pedagogical Content Knowledge (TPACK) of EFL Teachers Based on School Status and Teachers Status at SMA/MA of Pangkep Regency

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ABSTRACT

This study aims to describe the understanding and implementation of TPACK (Technological Pedagogical Content Knowledge) among English teachers in high schools in Pangkep District, focusing on differences based on teacher status and school status. TPACK is a framework that integrates three main components: content knowledge, pedagogical knowledge, and technological knowledge, which are essential for teachers to effectively teach in the digital era. This study uses a quantitative approach with a survey design, involving 58 English teachers from various high schools and madrasahs (Islamic schools) in Pangkep District as a sample, consisting of 34 public schools and 10 private schools. Data were collected using a questionnaire that measures the TPACK dimensions, as well as information regarding teacher status (certified and non-certified) and school status (public or private). The analysis results show that there is no significant difference in TPACK understanding between certified and non-certified teachers, with a significance value of $0.462 > 0.05$. Additionally, the school status also does not significantly influence the optimal implementation of TPACK in the learning process, with an average significance value of $0.971 > 0.05$. These findings are expected to provide recommendations for educational policy and professional development programs for English teachers in the region to enhance technology-based learning quality.

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INTRODUCTION

In the digital era, schools face challenges in using technology to enhance learning. Despite technology becoming an integral part of students' daily lives, its use in education often remains limited and suboptimal. Teachers frequently find it challenging to integrate technology in ways that genuinely enhance the teaching and learning process. Designing and implementing learning experiences by maximizing the use of technology has become an urgent need nowadays.

The independent curriculum requires teachers to adapt and improve their teaching skills with technology, this curriculum is designed to give schools and teachers in determining teaching methods that suit the needs of their students. An important aspect of the Independent Curriculum is the use of technology as a tool to enhance the learning process. Teachers are expected to understand and integrate technology to create more engaging and learning experiences for students. The need for technology integration in the teaching and learning process has become as an instrument of technological advancements. The use of technology in the classroom enables EFL teachers to manage the teaching and learning process efficiently .

Most experts argue the majority of scholars feel that technology has been an essential part of education . Considering how important technology is, it is clear that EFL teachers should be able to use it effectively when teaching English.

In theory, proper use of technology in teaching offers many benefits if used correctly such as. Firstly, it is possible that children may receive education from teachers in a way that is more effective, affordable, and of high quality. Secondly, when it comes to using computers as learning tools, technology provides instructors and students with support and additional resources . Finally, it is worth noting that technology-based teaching and learning can play an important role in enhancing the learning process. After considering all that has been discussed so far, it seems clear that incorporating technology into the educational process could be beneficial, yet its implementation often faces various challenges that hinder effective teaching.

Teachers face various obstacles in integrating technology into teaching such as a lack of deep understanding of how to integrate technology with teaching methods. Additionally, infrastructural limitations, such as unequal access to technological devices and reliable internet, pose significant obstacles. Insufficient training support and limited time to learn new technologies further complicate the situation. Consequently, despite the vast potential of technology to enrich the teaching and learning process, many teachers struggle to utilize it optimally to enhance student learning outcomes. Additionally, in order to incorporate technology into their teaching effectively, teachers need to understand its pedagogical purpose. The incorporation is crucial to consider not only teachers' instructional knowledge and skills (pedagogy) and the content they teach, but also the tools (technology) they use while teaching. Teachers' technical pedagogical content knowledge must be included in effective technology deployment in education, particularly in EFL contexts. By using the TPACK model, educators may leverage pre-existing knowledge to foster and improve learning outcomes. In particular, the TPACK framework elucidates the effective use of technology tools to enhance understanding and retention of knowledge.

A lot of teachers find the un-ideal conditions related to the use of technology, such as a lack of understanding, infrastructural limitations, insufficient training, and limited time for learning new technologies. Teachers need technical or framework pedagogical content knowledge for effective technology use into their lessons is called TPACK . TPACK use in the learning process is challenging and highly rewarding. Among the numerous variables that affect this application's success is the teacher. In the classroom, teachers play a crucial role in controlling the learning activities. Every instructor is unique, and this has an impact on how the learning process is conducted. Teachers were one of the things that the education system actually required in order to accomplish its goals. In Indonesia, attempts to shape national growth were significantly aided by teachers. Teachers must also be knowledgeable in all areas linked to education. This means that educators need to act professionally when performing their tasks and obligations regarding the school's teaching and learning process and the information they possess. Teachers must be capable of being well-prepared, having mastered the content they would be teaching, and developing a positive attitude and excellent behavior in themselves.

It was studied that several factors influence the achievement of TPACK including school status and teacher status. In Indonesia, schools can be classified as either public or private according to their educational status. Private schools are run by foundations, whereas public schools are run directly by the government. When it comes to directly regulating public school's vs private schools, the government has more power. The government is at the core of the public-school administrative system, which leads to government influence in all areas, including curriculum. Naing found that EFL teachers' TPACK mastery based on school status in Junior high school showed no significant difference in TPACK mastery between teachers in public schools and private school. Likewise, the status of teachers is proven to be such as Kumala found that civil servant teachers showed slightly higher scores compared to non-civil servant teachers. Goldhaber stated High school teacher certification status impact students' achievement. Then, Anthony concluded there was a significant effect of teacher qualifications on TPACK implementation.

The achievement of TPACK is influenced by school status and teacher status. In Indonesia, schools are either public or private. Private schools are run by foundations, while public schools are run by the government. The government has more power over public schools than private schools. The government is at the core of the public-school administrative system, which leads to government influence in all areas, including curriculum. Naing found that EFL teachers' TPACK mastery based on school status in junior high school showed no significant difference between teachers in public and private schools. Likewise, Kumala found that civil servant teachers showed slightly higher scores than non-civil servant teachers. Goldhaber stated that high school teacher certification status impacts students' achievement. Anthony concluded that teacher qualifications impact TPACK implementation.

However, teacher and school status need to be studied more deeply in seeking the influence of TPACK on the ability of teachers in integrating ICT which can be reflected in teacher TPACK. Asaolu & Fashanu found that private schools are more complete in ICT and more supportive of students' activities in accessing new information than public schools. Moreover, Castera stated that despite the profusion of studies was based on primary and secondary school teachers, there is a lack of knowledge about factors

influencing university teachers' TPACK. Therefore, researcher will apply similar research at a different level from previous studies, namely at the senior high school level in Pangkep Regency. Little empirical research has focused on the form of teachers' capacity relate to the status (certification or not) in using TPACK impacted teachers' teaching capability and achievement in public and private schools which have not been studied in previous research.

Since technology incorporation occurs in the classroom, more research is needed on factors influencing teachers' ability to integrate ICT in-service EFL teachers' TPACK levels in senior high school should be assessed. Thus, the researcher intends to carry out research which is entitled: Investigating the technological pedagogical content knowledge (TPACK) of EFL teachers based on school status and teachers' status.

METHODOLOGY

This study uses a quantitative approach with a survey design, involving 58 English teachers from various high schools and madrasahs (Islamic schools) in Pangkep District as a sample, consisting of 34 public schools and 10 private schools. Data were collected using a questionnaire that measures the TPACK dimensions, as well as information regarding teacher status (certified and non-certified) and school status (public or private).

RESULTS AND DISCUSSION

Description of TPACK Mastery Level of EFL Teachers in Pangkep Regency based on Teachers' Certification Status

The study results show that certified senior high school English teachers have higher average scores on mastery of all components, TK, CK, TCK, PCK, TPK, and TPACK, than not certified teachers. This finding is in line with the research from Pertiwi et.al, their research findings show that teacher certification has a significant impact on their performance. When compared to teachers who have not undergone certification, those who have undergone certification tend to show better performance in terms of learning quality, work efficiency, work attitude, work productivity, and communication skills.

Teacher certification should ideally have an impact on teacher performance. This is in line with the requirements for teacher certification which require certain qualifications and competencies, especially competencies in the use of technology in learning.

However, this finding differs from the previous research that conducted by Kusuma et.al, they found that the non-certified English teachers got adequate TPACK-related skills and expertise required to use their learning in collaborating schools. Also, research from Iskandar and Ariani is in contrast with the present findings that reveal that 30% of certified teachers are categorized as insufficient and less able to carry out their duties related to learning media and technology. Another research from Lasni et.al states only 37% of certified teachers can deliver material clearly, the ability to utilize media and learning technology, the ability to follow developments in science and technology and learning innovations as well as continuous professional development still needs to be improved.

However, the data of the inferential analysis demonstrated that overall (covering six components), there is no significant difference in teachers' TK, CK, PCK, TCK and TPACK mastery in public and private schools. Therefore, it can be concluded that teachers' TK, CK, PCK, TCK and TPACK mastery is not differentiated based on teachers' certification status. This result is consistent with previous study showing that there is no difference in the performance of certified and non-certified teachers. Because certified and non-certified teachers are both required to appear professional in carrying out their main duties of educating, teaching, guiding, directing, training, and evaluating students. So that certification does not affect the performance of certified or non-certified teachers.

Both groups likely possess comparable levels of understanding and application of TPACK components, suggesting that factors beyond certification, such as teaching experience, institutional support, or access to professional development opportunities, may play a more critical role in shaping their mastery of TPACK. These results underline the importance of focusing on ongoing training and resources for all teachers, regardless of certification, to ensure equitable competency in leveraging technology for educational purposes.

Description of TPACK Mastery Level of EFL Teachers in Pangkep Regency based on School Status

The test results show that the research findings indicate that there is minimal difference between state and private school teachers in their overall mastery of TPACK (Technological Pedagogical Content Knowledge). However, when examined across its six components, distinct areas of strength emerge for each group. State school teachers demonstrate superior proficiency in Content Knowledge (CK), Pedagogical Content Knowledge (PCK), and the integration of all three domains, TPACK. On the other hand, private school teachers excel in Technology Knowledge (TK), Technological Pedagogical Knowledge (TPK), and Technological Content Knowledge (TCK). These results suggest that the institutional context may influence

specific aspects of TPACK mastery, potentially reflecting differences in training focus, resource availability, or teaching priorities between state and private schools.

The research highlights that state and private school teachers share a comparable overall mastery of TPACK (Technological Pedagogical Content Knowledge), an essential framework for effective technology integration in education. However, when delving deeper into the six components of TPACK, notable differences in their areas of expertise become evident. State school teachers excel in Content Knowledge (CK), which pertains to their mastery of the subject matter they teach, as well as in Pedagogical Content Knowledge (PCK), the ability to effectively deliver subject matter through appropriate teaching strategies. Furthermore, state teachers demonstrate a strong grasp of TPACK itself, indicating their ability to seamlessly integrate technology into pedagogy and content delivery, which is a hallmark of innovative teaching practices.

In contrast, private school teachers show a marked advantage in Technology Knowledge (TK), which involves their familiarity with and ability to use technological tools. They also outperform in Technological Pedagogical Knowledge (TPK), reflecting their capability to leverage technology to enhance teaching methods, and Technological Content Knowledge (TCK), which indicates their skill in using technology to present and contextualize subject content effectively. This suggests that private schools may prioritize technological competence and its practical applications in their professional development programs, potentially due to different institutional priorities or access to technological resources.

These findings imply that while both groups of teachers possess unique strengths, there is room for mutual learning and development. State teachers could benefit from professional development that enhances their technological competencies, particularly in the practical applications of technology for pedagogy and content. Similarly, private school teachers might improve their effectiveness by deepening their understanding of content-specific teaching strategies and how these align with their technological expertise. Bridging these gaps could lead to a more balanced mastery of TPACK across educational contexts, fostering more effective teaching and learning in both state and private schools.

This discovery is aligned with Asaolu and Fashanu show that the level of proficiency in ICT in private schools is twice as high as in public schools. This result is due to teachers in private schools continuing to encourage students' performance to adopt ICT where different conditions are found in public or state schools. However, Andoh and Issifu shows that public or state schools learning in Ghana involves more ICT than private schools. Students in public schools often use ICT to support learning more than students in private schools. This result was unexpected as most private schools in Ghana have more resources on technology than public schools

Moreover, the results of the t-test showed no significant difference between state and private school teachers, so the TPACK mastery is not differentiated based on the status of the school where the teacher teaches. The results of this study are following the research of Afifah et.al who found that there is no significant difference between public and private school's teacher self-perceived digital literacy. Also, the research from Naing and Wiedarti reveal that EFL teachers' TPACK mastery based on school status showed no significant difference in TPACK mastery between teachers in public schools and private schools. It should be known that teachers and students in private and public schools already have their ICT tools so that the differences in the availability of ICT and infrastructure in schools do not become a barrier to their application in learning.

CONCLUSION

EFL Teachers' TPACK mastery based on certification status showed no significant difference in TPACK mastery between certified and not certified teachers. And EFL teachers' TPACK mastery based on school status showed no significant difference in TPACK mastery of teachers in state and private schools.

SUGGESTION

The findings of this study indicate that the TPACK mastery of EFL teachers in Pangkep Regency remains within the "good" category across all areas. Therefore, comprehensive in-service training is essential to optimize instructors' TPACK skills. Moreover, it is crucial to focus on when and how teachers integrate technology into their teaching, as well as the extent to which TPACK competencies should be consistently included in teacher education programs and periodically refreshed. Additionally, the findings of this study can serve as a framework for evaluating teachers by emphasizing the integration of ICT into instructional design. Proficiency in ICT not only enhances teachers' performance but also contributes to improving the overall quality of education and students' academic achievement.

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