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A COMPARATIVE CASE STUDY ON THE IMPLEMENTATION OF THE TECHNOLOGICAL PEDAGOGICAL CONTENT KNOWLEDGE (TPACK) MODEL IN TEACHING ENGLISH WITHIN BASIC EDUCATION FRAMEWORKS IN CHINA AND MYANMAR

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Abstract: **This study explores the application of the Technological Pedagogical and Content Knowledge (TPACK) model in teaching English within basic education frameworks in China and Myanmar. The aim is to compare how the TPACK model is integrated into English language instruction in these two countries, focusing on the interplay between technology, pedagogy, and content knowledge. Through a comparative qualitative case study, the research examines the challenges and successes of TPACK implementation in both contexts, considering factors such as national educational policies, technological infrastructure, teacher training programs, and classroom practices. In China, significant progress has been made in leveraging technology in education, supported by a robust infrastructure and continuous teacher professional development programs. In contrast, Myanmar faces constraints such as limited access to technological tools, inadequate teacher training, and socio-economic challenges that hinder the effective application of the TPACK model. Despite these disparities, both countries show promising results in terms of student engagement and improved learning outcomes when TPACK is appropriately applied. The study highlights the importance of policy reforms, investment in digital resources, and the necessity for ongoing teacher training to successfully integrate TPACK into English teaching practices. Ultimately, the research provides recommendations for both countries to foster the effective use of the TPACK model, contributing to the enhancement of English language teaching in basic education settings.**

Keywords: **TPACK, English language teaching, comparative case study, educational technology, teacher training, digital pedagogy, China, Myanmar.**

1. INTRODUCTION

The integration of technology into education has revolutionized teaching and learning, fostering the development of various pedagogical models aimed at enhancing educational outcomes. One such model is the Technological Pedagogical Content Knowledge (TPACK) framework, which highlights the interconnections among technology, pedagogy, and content

knowledge to enhance effective teaching practices (Mishra & Koehler, 2006). TPACK is particularly crucial in English language teaching, as it enables educators to integrate digital tools, online resources, and interactive learning methods to improve students' language acquisition and engagement. However, implementing TPACK effectively requires not only access to technological resources but also adequate teacher training and pedagogical adaptation. In recent years, both China and Myanmar have recognized the importance of English proficiency in their educational reforms, leading to various initiatives aimed at enhancing English teaching in basic education. Despite these efforts, the integration of TPACK in English language instruction faces several challenges in both countries. In China, while there is a strong policy emphasis on digital education, disparities in technological infrastructure and teacher preparedness create barriers to effective TPACK implementation. In Myanmar, the limited availability of digital resources, lack of professional development opportunities for teachers, and rigid curriculum structures hinder the widespread adoption of technology-enhanced pedagogy. These challenges highlight the need to examine how TPACK is adapted in different educational contexts and what factors influence its success or failure. Although existing studies have explored TPACK in various educational settings, there is a lack of comparative research examining its implementation in English language teaching within developing and emerging educational systems like those of China and Myanmar. Most research focuses on technologically advanced countries, overlooking the unique infrastructural, pedagogical, and policy-related constraints in these contexts. This study aims to address this gap by investigating how TPACK is implemented in English language instruction in basic education in China and Myanmar, identifying key challenges and best practices. By comparing the experiences of both countries, this research will provide valuable insights into the contextual factors influencing TPACK integration and offer practical recommendations for policymakers and educators in similar educational environments.

2. LITERATURE REVIEW

The Technological Pedagogical and Content Knowledge (TPACK) framework, developed by Mishra and Koehler (2006), integrates three primary forms of knowledge: Technological Knowledge (TK), Pedagogical Knowledge (PK), and Content Knowledge (CK). TK refers to the understanding of digital tools and technologies that can be utilized in the educational process, such as learning management systems (LMS), multimedia resources, and artificial intelligence-based language learning tools. PK encompasses the methods and strategies of teaching, including student-centered approaches, scaffolding techniques, and assessment strategies. CK involves a deep understanding of the subject matter, including grammar, vocabulary, phonetics, and discourse in the context of English language teaching. In English language education, TPACK enables teachers to integrate technology effectively into their instructional methods. Digital storytelling tools like Storybird help improve students' writing and creativity, while language-learning applications such as Duolingo and Quizlet facilitate vocabulary acquisition through gamification (Chai, Koh, & Tsai, 2013). Video conferencing tools like Zoom and Microsoft Teams have also become essential for online language instruction, enabling real-time interaction and collaborative learning (Sang, Valcke, van Braak, & Tondeur, 2010).

Importance of TPACK in Language Education

The TPACK framework is particularly significant in foreign language teaching, where integrating digital resources, such as multimedia content, interactive simulations, and AI-driven chatbots, enhances engagement and facilitates personalized learning (Chapelle & Sauro, 2017). Research has shown that blended learning approaches—combining face-to-face instruction with digital learning tools—enhance students' speaking and listening skills by providing exposure to authentic language use (Egbert, 2005). Additionally, TPACK supports adaptive learning technologies, such as intelligent tutoring systems, that analyze students' progress and tailor instruction accordingly (Hubbard & Levy, 2016). However, the implementation of TPACK in under-resourced educational contexts remains a challenge due to technological infrastructure disparities (OECD, 2021).

The Role of Teacher Training in TPACK Implementation

Teacher training plays a crucial role in successfully implementing TPACK. Without adequate preparation, teachers may lack the confidence and skills necessary to integrate technology into their pedagogical practices (Angeli & Valanides, 2009). In China, teacher training programs focus on digital literacy and pedagogical innovation. The "National Training Program for Primary and Secondary School Teachers" includes training on integrating multimedia tools and online platforms into English teaching (Ministry of Education, China, 2015). Universities and teacher education institutions incorporate TPACK modules into pre-service teacher training, ensuring that new teachers are prepared for technology-enhanced instruction (Li, 2016). In Myanmar, initiatives such as the Digital Teacher Training Program under the Myanmar Digital Education

Initiative aim to improve teachers' ability to use digital tools for instruction (Myanmar Digital Education Initiative, 2019). However, challenges such as limited infrastructure, inconsistent internet access, and political instability hinder the full implementation of these training programs (Thein, 2019). Compared to China, Myanmar's teacher training efforts remain constrained by funding and access disparities, particularly in rural areas.

Socio-Cultural Factors Influencing TPACK Implementation

Socio-cultural factors significantly influence the adoption and implementation of the Technological Pedagogical and Content Knowledge (TPACK) model in both China and Myanmar, reflecting the deep-rooted educational traditions, societal values, and cultural expectations in each country. In China, the education system has traditionally emphasized rote memorization and high-stakes examinations, which align with a teacher-centered approach that often focuses on knowledge transmission rather than student interaction and collaboration. This socio-cultural backdrop creates tension with the student-centered, interactive methodologies promoted by the TPACK framework, which encourages more flexible, technology-enhanced, and collaborative learning environments (Zhao, 2013). However, there has been a cultural shift in recent years, particularly in urban schools like those in Shanghai and Beijing, where the rise of digital tools and the growing importance of technology in education have led to a broader acceptance of collaborative learning. This shift is partly driven by the need for students to be equipped with skills that are relevant in the global digital economy. As a result, over 80% of teachers in urban areas have begun incorporating digital tools into their teaching, despite challenges in adapting curriculum structures and assessment practices to align with these new methods (Li, 2021). In contrast, the socio-cultural context in Myanmar presents different challenges to the adoption of TPACK. Many educators and students in Myanmar are accustomed to traditional, teacher-centered methods, where lessons are predominantly lecture-based and rely heavily on textbooks. This entrenched culture of conventional teaching creates resistance to change, as the integration of technology requires not only new pedagogical approaches but also a shift in mindset (Hlaing, 2020). Additionally, the limited digital literacy among teachers and the lack of professional development opportunities further hinder the adoption of TPACK. Studies indicate that only a small proportion of English teachers (25%) actively use digital tools, mainly due to the challenges of technological access and a lack of preparedness to integrate new teaching methodologies effectively (Hlaing, 2020). Furthermore, Myanmar's linguistic diversity and the varying levels of English proficiency among students complicate the use of digital resources, as many of these tools are available predominantly in English rather than in the country's local languages (Lwin, 2018). This linguistic challenge adds another layer of complexity to the adoption of TPACK, as teachers must navigate both technological and language barriers to provide an inclusive learning experience. Interviews from Mandalay and Yangon further highlight the willingness of educators to embrace technology, but they also express a lack of formal training in TPACK, which is essential for them to feel confident in applying technology effectively in their classrooms (Thein, 2019). In both countries, socio-cultural factors such as traditional teaching practices, digital literacy levels, linguistic diversity, and resistance to change shape how technology is incorporated into the classroom, influencing the extent to which TPACK can be successfully implemented. These factors underscore the importance of addressing local cultural and educational contexts when introducing new technological initiatives in education.

Teaching English in Basic Education in China and Myanmar

Teaching English in China

In China, the teaching of English in basic education has been a significant focus of educational reform over the past few decades. English is a compulsory subject in Chinese schools, starting from elementary levels, and it is viewed as a crucial skill for academic and career success. The Chinese government has made substantial investments in enhancing English education, with national policies such as the "English Curriculum Standards for Compulsory Education" aimed at improving the quality of English language teaching (Ministry of Education, China, 2011). English teachers in China are generally well-trained, and the majority have access to professional development opportunities, including those that integrate TPACK principles. However, challenges remain in terms of pedagogical methods, as many teachers still rely on rote memorization and grammar-focused instruction due to traditional educational values and exam-centric pressures (Zhao, 2013). Despite these challenges, urban schools, especially those in major cities like Beijing and Shanghai, have witnessed a significant shift towards communicative language teaching and technology-enhanced instruction, with schools embracing multimedia tools, online platforms, and blended learning approaches (Li, 2021). English education in rural areas, however, remains less advanced, with a lack of resources and technological infrastructure hindering progress.

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Teaching English in Myanmar

In Myanmar, the teaching of English in basic education is also a key focus, as English proficiency is considered an essential skill for global competitiveness. English is taught from the primary level, but its role in the curriculum has historically been more limited compared to countries like China. English education in Myanmar is heavily influenced by traditional, teacher-centered methods, and textbooks remain the primary teaching resource (Hlaing, 2020). Teachers often rely on grammar drills, translation exercises, and memorization techniques, which do not fully engage students in communicative language use. The introduction of the "English for Myanmar" curriculum in recent years has sought to modernize language teaching, but implementation has been uneven due to issues such as a lack of qualified teachers, inadequate training, and insufficient access to digital resources (Thein, 2019). There is a growing recognition of the need for communicative and student-centered teaching approaches, but these are slow to take hold, particularly in rural areas where infrastructure is limited. Efforts like the Digital Teacher Training Program are aiming to improve teachers' digital literacy and teaching practices, yet the challenges posed by socio-economic factors, political instability, and limited access to technology continue to hinder progress (Myanmar Digital Education Initiative, 2019). In both countries, English teaching in basic education is shaped by a blend of historical, cultural, and socio-economic factors that impact the effectiveness of language instruction. While China has made strides in integrating modern teaching methods and technology, Myanmar still faces significant barriers in terms of resource access and teacher training. However, both nations are recognizing the importance of English in global communication and are gradually introducing reforms to improve the quality of teaching and learning.

3. AIMS OF THE STUDY AND RESEARCH QUESTIONS

The aim of this study is to explore the application of the Technological Pedagogical and Content Knowledge (TPACK) model in English language instruction within the basic educational contexts of China and Myanmar. The study will compare and contrast the ways in which TPACK is implemented in these two countries, highlighting its impact on teaching practices, government policies, challenges, opportunities, and recommendations for improvement in basic education.

The research questions are as follows:

1. How does the TPACK model enhance English language instruction in the basic education settings of China and Myanmar?
2. How do government policies and initiatives support the implementation of TPACK in basic education English language education?
3. What are the challenges and successes encountered in implementing the TPACK model for teaching English in basic education in China and Myanmar?
4. What recommendations can be made to improve TPACK implementation in basic education, based on comparative insights from China and Myanmar?

4. RESEARCH METHODOLOGY

Research Design

This study adopts a comparative qualitative case study approach to examine the implementation of the Technological Pedagogical Content Knowledge (TPACK) model in teaching English in basic education in China and Myanmar. A comparative case study was chosen over other research methods because it allows for an in-depth exploration of the complexities and contextual factors influencing TPACK integration across different educational settings (Creswell & Poth, 2018). Unlike quantitative methods, which focus on numerical data and generalizability, this approach provides rich, detailed insights into teachers' experiences, policy implications, and socio-cultural influences in each country (Merriam & Tisdell, 2015). By analyzing two national contexts, this study highlights both shared challenges and country-specific strategies in implementing TPACK. Additionally, the case study method enables a historical, current, and prospective examination of TPACK integration, capturing interactions among various stakeholders, policies, and educational practices within their unique socio-political and economic environments (Yin, 2018).

Data Collection

Literature Review: A comprehensive review of academic journal articles, government reports, policy documents, and publications from international organizations such as UNESCO and the World Bank was conducted. This review contextualized TPACK implementation in China and Myanmar, identifying key themes and trends in technology integration in English language education (UNESCO, 2022; World Bank, 2021).

Document Analysis: National education strategic plans, education laws, and annual reports from the Ministries of Education in China and Myanmar were analyzed. This provided a deeper understanding of policy changes and implementation strategies supporting TPACK integration in English language teaching in basic education. By examining official documents, this study identified specific policies and initiatives aimed at enhancing the use of technology in English instruction (Ministry of Education, China, 2018; Ministry of Education, Myanmar, 2016).

Data Sources and Sampling Strategy

This study relies on multiple sources of data to ensure comprehensive analysis and triangulation of findings. Primary sources include government policies, strategic education plans, and teacher training guidelines, while secondary sources consist of journal articles, case studies, and previous research on TPACK integration (Harris et al., 2009). A purposive sampling strategy was used to select case studies of TPACK implementation in China and Myanmar. The selection criteria included:

i. Schools with documented use of TPACK in English language instruction.

ii. Government-supported initiatives focused on technology integration in education.

iii. Availability of research data and reports on TPACK adoption in each country.

For comparative analysis, both urban and rural educational contexts were considered to capture disparities in digital infrastructure and teacher readiness (Minges & Zhen-Wei Qiang, 2016).

Coding and Content Analysis

To analyze the collected data systematically, this study employed qualitative content analysis with an inductive coding approach (Schreier, 2012). Thematic coding was used to identify patterns and recurring themes related to TPACK implementation, teacher training, policy effectiveness, and challenges faced in each country. The coding process involved:

i. Data Familiarization – Reviewing all collected documents and literature to identify key concepts.

ii. Initial Coding – Assigning preliminary codes to policy documents, case studies, and research findings.

iii. Theme Development – Grouping codes into broader themes, such as digital infrastructure, teacher training gaps, and socio-political influences.

iv. Comparative Analysis – Examining differences and similarities between China and Myanmar regarding TPACK adoption (Miles et al., 2019).

NVivo software was used to facilitate coding and organize qualitative data systematically (Bazeley & Jackson, 2013).

Units of Analysis: Sampling Units and Coding Units

The sampling units for this study include policy documents, such as government education plans, ICT strategies, and teacher training guidelines from China and Myanmar, as well as institutional reports from ministries of education, UNESCO, and the World Bank that provide insights into digital education initiatives. Additionally, empirical case studies on TPACK implementation in schools were analyzed, focusing on teacher and student experiences. The coding units were determined based on key research questions and thematic areas, including teacher training and professional development, which covers workshops, digital literacy programs, and teacher preparedness (Mishra & Koehler, 2006). Another critical coding unit is technology access and infrastructure, referring to internet connectivity, device availability, and ICT resource allocation (OECD, 2021). Policy and implementation strategies, including government-led initiatives, regulations, and funding mechanisms for TPACK integration, were also examined (Ministry of Education, China, 2020; Ministry of Education, Myanmar, 2019). Finally, the study identified challenges and barriers such as financial constraints, limited digital resources, and socio-political instability as key issues affecting TPACK adoption (Thein, 2019).

Limitations of Data Collection

While this study offers a detailed comparative analysis, certain limitations must be addressed. The reliance on secondary sources means that direct insights from educators and policymakers are limited, potentially restricting the depth of firsthand perspectives on TPACK implementation. Additionally, variations in data availability between China and Myanmar may affect the comprehensiveness of the comparative analysis. Finally, the study does not include large-scale quantitative data, which could provide broader statistical validation of findings. Future research incorporating interviews and classroom observations could further enrich the understanding of TPACK integration in diverse educational settings.

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5. RESEARCH FINDINGS

Historical Context and Initial Implementation

The historical analysis reveals that China and Myanmar have distinct educational trajectories that have shaped TPACK implementation in basic education. In China, modernization and technological integration have been central to educational reforms since the late 20th century, driven by economic growth and globalization. Early TPACK implementation was characterized by centralized government investment in digital infrastructure and teacher training, facilitating widespread adoption in urban areas. In Myanmar, educational reforms have been affected by political instability and resource constraints. Early attempts to integrate technology faced systemic inefficiencies, but recent efforts have sought to leverage digital tools to improve teaching quality and accessibility. In China, strong governmental investment and structured policies have led to extensive TPACK implementation, particularly in urban areas. In Myanmar, efforts have been less consistent, with significant disparities in technology adoption due to limited resources and political challenges.

Current State of TPACK Implementation

Recent reforms in China and Myanmar have focused on decentralization, teacher professional development, curriculum modernization, and inclusivity through TPACK integration. In China, the *Education Informatization 2.0 Action Plan* has driven significant advancements in digital infrastructure and teacher training. Digital platforms and multimedia tools are increasingly being used in English language instruction, with localized approaches tailored to different regions. In Myanmar, the *National Education Strategic Plan (NESP)* emphasizes digital literacy and access to educational technology. TPACK implementation has involved the introduction of online learning platforms and multimedia content. However, challenges such as inadequate infrastructure and limited teacher training persist, particularly in rural and conflict-affected areas. In China, decentralization efforts have empowered local authorities to implement TPACK based on regional needs, although disparities remain between urban and rural areas. In Myanmar, teacher training programs have shown positive results, but the implementation of inclusive education policies remains uneven, with persistent challenges in underprivileged regions.

Implementation of TPACK in China

Government Policies and Initiatives

The Chinese government has recognized the transformative potential of technology in education and has initiated various policies to integrate digital tools into the educational system. The "Education Informatization 2.0 Action Plan," introduced by the Ministry of Education in 2018, aims to modernize the education system by promoting the use of digital technologies to improve teaching quality and student outcomes. This plan advocates for the creation of digital campuses and the incorporation of educational software and online platforms to enhance the learning experience, making it more interactive and accessible to students across the country. The plan encourages the integration of digital resources to foster a more engaging and efficient learning environment, aiming to bridge the gap between traditional and modern educational approaches (Ministry of Education, China, 2018).

Additionally, the "National Medium- and Long-Term Education Reform and Development Plan (2010-2020)," which was implemented by the Central Committee of the Communist Party of China, underscores the importance of reducing the digital divide and ensuring that all students have equal access to educational resources. This policy calls for substantial investment in technological infrastructure, particularly in underdeveloped rural areas, to ensure that technological tools and resources are available to all schools, regardless of location. Moreover, it stresses the need for ongoing professional development for teachers, enabling them to enhance their digital literacy and effectively use technology in the classroom to support student learning (Central Committee of the Communist Party of China, 2010). These policies reflect China's commitment to building an inclusive, technology-driven education system that supports both teachers and students in adapting to the digital age.

Challenges and Successes in the Implementation of the TPACK Model in China

Despite its successes, the implementation of the Technological Pedagogical and Content Knowledge (TPCK) model in basic education in China still faces challenges, particularly in adapting to the rapidly evolving digital education landscape. Over the past decade, significant progress has been made in enhancing technological infrastructure in schools across the country. However, disparities persist in the quality and accessibility of digital resources, especially in less economically developed regions. While urban basic education schools often have access to advanced educational technologies, many rural schools still encounter limitations in integrating technology effectively into English language instruction (Zhang & Li, 2022; Chen et al., 2023).

Another critical challenge is the need for continuous professional development for basic education teachers. Although digital literacy among educators has improved, many still require targeted training to effectively implement TPCK-based teaching strategies. Without sufficient pedagogical and technical support, teachers may struggle to integrate technology in ways that enhance students' engagement and learning outcomes (Liu & Wang, 2023). Additionally, differences in institutional support and varying attitudes toward technology adoption can influence the effectiveness of TPCK across different school settings (Sun et al., 2023).

Nevertheless, TPCK has significantly contributed to the advancement of English language education in China's basic education system. By combining technological, pedagogical, and content knowledge, teachers can create more interactive and engaging learning environments that foster students' language proficiency. Research has demonstrated that TPCK-based approaches promote student engagement, encourage active learning, and support the development of essential language skills for global communication (Wang & Sun, 2023; Zhao & Chen, 2023). As China continues to invest in educational technology and teacher training, the integration of TPCK is expected to further enhance English language instruction in basic education in the years ahead.

Implementation of TPACK in Myanmar

Government Policies and Initiatives

Government policies in Myanmar have focused on modernizing the education system and integrating technology into teaching and learning to enhance educational outcomes. The "National Education Strategic Plan (NESP) 2016-2021," developed by the Myanmar Ministry of Education, outlines the government's commitment to improving digital literacy and expanding access to educational technology across the country. This strategic plan prioritizes initiatives to provide schools with the necessary technological infrastructure, such as computers, internet access, and digital resources, to create an environment conducive to learning. Additionally, the NESP emphasizes the importance of teacher training, specifically focusing on equipping educators with the skills and knowledge needed to effectively integrate technology into their teaching practices (Ministry of Education, Myanmar, 2016).

Complementing the NESP, the "Myanmar Digital Education Initiative (MDEI)" seeks to further enhance digital literacy and improve access to educational technology. Launched in 2019, the MDEI aims to develop and distribute digital resources to schools across the country. This initiative includes the creation of e-learning platforms, digital textbooks, and other online resources designed to support both teachers and students in their educational endeavors. The MDEI also focuses on professional development for educators, offering training programs that equip teachers with the tools to effectively integrate digital resources into their lessons, enhancing their ability to engage students and improve learning outcomes (Myanmar Digital Education Initiative, 2019). Together, these policies reflect Myanmar's vision of a modernized education system where technology plays a central role in improving both teaching quality and student success.

Challenges and Successes in Implementation of the TPACK Model in Myanmar

The implementation of the Technological Pedagogical and Content Knowledge (TPACK) model in Myanmar's basic education system faces several challenges, primarily due to infrastructural limitations, inadequate teacher training, and socio-political constraints. Many basic education schools, particularly in rural and remote areas, lack essential technological infrastructure, including stable electricity, internet access, and digital devices, making the integration of technology into English language teaching difficult (Aung & Lwin, 2021). Even in urban schools where technological resources are more accessible, financial constraints and outdated policies often hinder the widespread adoption of digital learning tools. Additionally, the absence of comprehensive teacher training programs focused on the TPACK framework limits educators' ability to effectively integrate technology with pedagogy and content knowledge. Many teachers, having been trained in traditional methods, struggle with the pedagogical shift required for technology-enhanced teaching and require ongoing professional development and support (Hlaing, 2020). Furthermore, socio-political instability and ongoing conflicts in certain regions disrupt the education system, creating disparities in access to technological resources and limiting the effectiveness of TPACK implementation (Thein, 2019).

Despite these challenges, some successes have been observed in integrating the TPACK model into Myanmar's basic education English language classrooms. Teachers who have undergone TPACK-focused training programs report increased confidence in using digital tools to support their instruction, leading to more interactive and engaging learning experiences for students (Win & Soe, 2022). The use of multimedia resources, online learning platforms, and mobile applications has

shown positive effects on students' motivation and participation, particularly in improving their listening and speaking skills. Additionally, initiatives by non-governmental organizations and international collaborations have contributed to the development of digital education projects, helping to bridge the technological gap in disadvantaged areas (Kyaw, 2021). While the implementation process is still in its early stages, these initial successes highlight the potential of the TPACK model to enhance English language teaching in Myanmar's basic education system, provided that continued investment in infrastructure, teacher training, and policy support is sustained.

Technological Infrastructure and Access

A key difference in the implementation of the TPACK model between China and Myanmar lies in their technological infrastructure and access to digital resources. China has made substantial investments in building a robust digital ecosystem, ensuring over 95% of schools have internet access and more than 90% of urban schools are equipped with multimedia classrooms (Ministry of Education, China, 2020). These efforts have enabled widespread adoption of digital learning tools and interactive pedagogies across both urban and rural areas (Wang & Zhao, 2011). Additionally, initiatives such as the "Education Informatization 2.0" strategy aim to provide further AI-driven and cloud-based learning platforms to improve equitable digital access (Zhao, 2018). In contrast, Myanmar faces significant challenges in technological infrastructure, particularly in rural and conflict-affected areas, where only 35% of schools have reliable electricity and less than 20% have internet connectivity (Ministry of Education, Myanmar, 2019). Many schools rely on traditional blackboard-based teaching, making digital integration difficult (Thein, 2019). While initiatives such as the Myanmar Digital Education Initiative (MDEI) have introduced mobile learning solutions, progress has been slow due to financial and logistical constraints (Lwin, 2020). Furthermore, teacher access to digital devices remains limited, with a teacher-to-digital-device ratio of approximately 1:10 in some regions (Myanmar ICT Development Report, 2021).

Similarities in Implementation

Despite their differences, both China and Myanmar have recognized the importance of digital literacy and have introduced government-led initiatives to promote TPACK integration. Policies such as China's Education Informatization 2.0 and Myanmar's National Education Strategic Plan (2016-2021) emphasize the use of technology in enhancing pedagogical practices (Ministry of Education, China, 2018; Ministry of Education, Myanmar, 2016). Both countries have adopted online learning platforms, including China's Cloud Classroom and Myanmar's Digital Learning Portal, to support blended learning environments (Li, 2016; Myint, 2019). Additionally, both countries face challenges related to infrastructure limitations and teacher training gaps. Studies indicate that in rural areas, limited digital access and lack of professional development opportunities hinder effective TPACK implementation. Surveys conducted among teachers in both countries reveal that over 60% of educators feel underprepared to integrate digital tools effectively, highlighting the need for continuous professional development programs (Gao & Hargis, 2010; Hlaing, 2020).

Differences in Implementation

Despite these similarities, China and Myanmar differ significantly in the scope and scale of TPACK implementation. China benefits from substantial government investment, with billions of dollars allocated annually to education technology initiatives (Central Committee of the Communist Party of China, 2010). In contrast, Myanmar faces financial and logistical constraints, limiting its ability to scale TPACK-based programs nationwide (Ministry of Education, Myanmar, 2016). Another key difference is the availability of digital resources and teacher training programs. In China, pre-service and in-service teacher training programs focus on enhancing TPACK skills, with mandatory digital literacy courses for new educators (Wang & Zhao, 2011). In contrast, Myanmar lacks systematic TPACK training, with less than 30% of teachers receiving formal instruction on digital pedagogies (Hlaing, 2020). This results in inconsistent implementation of technology-enhanced learning. Finally, socio-political stability plays a crucial role in TPACK adoption. China's centralized education system facilitates consistent implementation of TPACK initiatives, whereas Myanmar's political instability and regional conflicts often disrupt educational programs, making long-term TPACK integration challenging (Thein, 2019).

6. DISCUSSION

The impact of the TPACK model on English language teaching outcomes in both China and Myanmar has been significant. Teachers in both countries have reported increased student engagement and improved language proficiency as a result of integrating technology into their instructional practices. The TPACK model has also empowered teachers to experiment with innovative teaching strategies and better cater to the diverse needs of their students (Zhao, 2013; Lwin, 2018). This

aligns with global trends in digital education, where technology is leveraged to enhance pedagogical effectiveness and support personalized learning experiences (UNESCO, 2021). However, the successful implementation of TPACK requires ongoing support and professional development for teachers. Many educators in Myanmar have expressed concerns over the lack of hands-on training opportunities, with one teacher noting, *"We have access to some digital tools, but we don't always know how to use them effectively in language teaching"* (Hlaing, 2020). In contrast, Chinese teachers have benefited from structured training programs, such as the Education Informatization 2.0 Action Plan, which provides professional development and access to technology-enhanced pedagogical strategies (Ministry of Education, China, 2018). To enhance TPACK implementation, several strategies can be adopted. Continuous professional development and training programs should be provided to teachers to build their confidence and proficiency in using digital tools. These programs should focus on practical applications of the TPACK model and offer opportunities for teachers to collaborate and share best practices. For example, teacher exchange programs between urban and rural schools in China have proven effective in disseminating best practices in digital pedagogy (Li, 2016). Providing access to digital resources and infrastructure, particularly in rural areas, is essential for the successful implementation of TPACK. In Myanmar, limited access to stable internet connectivity and insufficient digital tools hinder effective technology integration. One teacher from a rural area commented, *"Even when we have digital resources, frequent power cuts and slow internet make it difficult to use them in class"* (Thein, 2019). Addressing these infrastructure challenges is crucial for ensuring equitable access to technology-enhanced learning opportunities. Additionally, government support and funding are crucial for the sustained implementation of the TPACK model. This includes providing grants for technology purchases, funding for professional development programs, and incentives for schools that successfully integrate technology into their teaching practices. For instance, China's investment in AI-driven learning platforms has expanded access to personalized instruction, a strategy that could benefit Myanmar as well (Zhao, 2013). The socio-political context in Myanmar presents additional challenges. Promoting peace and stability in conflict-affected regions is essential for the effective implementation of TPACK. Global initiatives, such as UNESCO's efforts to bridge the digital divide in developing countries, emphasize the importance of integrating technology into education while ensuring equitable access (UNESCO, 2021). Myanmar's policymakers can leverage such international frameworks to align their educational strategies with global best practices and secure funding for digital education initiatives. By addressing these challenges through policy reforms, investment in infrastructure, and teacher training programs, both China and Myanmar can further enhance the implementation of the TPACK model, ensuring that students across different socio-economic backgrounds benefit from technology-enhanced English language education.

7. RECOMMENDATION

To ensure the effective and equitable integration of the TPACK model in English language education across China and Myanmar, both short-term and long-term solutions must be implemented. In the short term, enhancing teacher training and support is essential, including mandatory digital pedagogy workshops, peer mentoring programs, and micro-credential programs focused on TPACK. Expanding access to digital resources through low-cost devices, offline educational content, and partnerships with ed-tech organizations will help bridge technological gaps. Encouraging school-level initiatives, such as piloting small-scale TPACK projects and recognizing innovative teaching practices, can further promote digital integration. For long-term impact, strengthening infrastructure and connectivity by investing in nationwide broadband expansion, establishing government-funded ICT labs, and securing funding through public-private partnerships is crucial. Additionally, policy development should focus on creating clear national guidelines for TPACK integration, introducing digital literacy in teacher education programs, and aligning strategies with global education policies like UNESCO's Digital Learning Framework. To ensure continuous improvement, monitoring and evaluation mechanisms should be in place, including regional monitoring teams, longitudinal studies on English proficiency, and data-driven decision-making to refine and scale successful models. By implementing these measures, policymakers and educators can drive meaningful and sustainable advancements in digital pedagogy for English language education.

8. CONCLUSION

The implementation of the model in teaching English in basic education in China and Myanmar provides valuable insights into both the opportunities and challenges of integrating technology into language instruction. While both countries have made significant progress in adopting digital tools for education, disparities in technological infrastructure, teacher training, and socio-political contexts have influenced the effectiveness and scalability of these efforts. In China, advancements in digital education have been supported by strong governmental policies and extensive technological resources, whereas Myanmar faces challenges related to limited internet access, inadequate digital facilities, and a lack of systematic teacher

training programs. These differences highlight the importance of tailoring digital education strategies to local needs, ensuring that infrastructure, pedagogy, and policy frameworks align effectively. This study reinforces the need for continued investment in digital education, emphasizing the importance of targeted interventions that address infrastructural and pedagogical gaps while promoting equitable access to technology-enhanced language learning.

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