Integrating Pedagogical Knowledge and TPACK for Effective English Teaching in Bagamoyo District, Tanzania

Aidath A. Juma[1], Prospery M Mwila[2*]

[1] Educational Officer, Bagamoyo District, Tanzania
[2] Academician, Saint Augustine University of Tanzania

Correspondence Author: Prospery M Mwila[2*]

Abstract

This study investigates how pedagogical knowledge, supported by the Technological Pedagogical Content Knowledge (TPACK) framework, influences the effectiveness of English language teaching in public secondary schools in Bagamoyo District, Tanzania. Using a mixed-method approach with a sequential explanatory research design, the study sampled 62 participants, including Form One and Form Three English teachers, head teachers, Ward Education Officers, and a District Education Officer. Quantitative data were collected through a Likert scale questionnaire, while qualitative data were gathered via classroom observations and interviews. Data analysis was performed using descriptive statistics for quantitative data and thematic analysis for qualitative data. The findings indicate variability in teachers' confidence and ability to apply pedagogical strategies, with significant challenges related to the integration of ICT tools. While many teachers recognize the value of ICT in enhancing English instruction, gaps in technological knowledge and access to resources limit its implementation. The study highlights the need for enhanced professional development and improved ICT infrastructure to support the integration of technology in teaching. Recommendations focus on teacher training programs and resource allocation to better equip educators for 21st-century English language education.

Keywords*: Pedagogical Knowledge, TPACK, ICT Integration, English Teaching, Bagamoyo District.*

I. INTRODUCTION

The integration of Information and Communication Technology (ICT) in educational practices has transformed teaching and learning in recent years. Global organizations, such as UNESCO, have emphasized the importance of equipping teachers with the skills necessary to integrate technology into their pedagogical practices. The ICT Competency Framework for Teachers (ICT-CFT) developed by UNESCO (2023) highlights the need for teachers to effectively incorporate digital tools to enhance learning outcomes. This aligns with the broader global goal of ensuring inclusive and equitable quality education, as advocated by Sustainable Development Goal 4 (SDG 4). In the field of English language teaching, the use of ICT tools has been recognized as a key driver in improving language proficiency, particularly through the enhancement of engagement, comprehension, and retention among learners (Acevedo, 2016; Ince, 2014).

English, as a global lingua franca, plays a pivotal role in academic success and access to vast resources of global knowledge (Bhattarai, 1995; Harmer, 2007). In developing contexts, the adoption of ICT in English language instruction offers a significant opportunity to overcome challenges related to traditional teaching methods, which often lack interactivity and personalization. However, while ICT holds transformative potential, its integration into teaching requires not just the availability of technological tools, but also a robust framework that combines pedagogical knowledge with technological skills. The Technological Pedagogical Content Knowledge (TPACK) framework provides a comprehensive model for understanding how these elements—technology, pedagogy, and content knowledge—interact to create effective teaching environments (Mishra & Koehler, 2006).

In Tanzania, the education system faces significant challenges in adopting ICT, particularly in rural and under-resourced areas like Bagamoyo District. Previous studies in Sub-Saharan Africa, such as those by Kihoza (2016) and Mrosso et al. (2023), have noted the barriers to effective ICT integration, including limited infrastructure and insufficient teacher training. In Bagamoyo, these challenges are compounded by a lack of empirical studies specifically examining the integration of ICT in English language teaching. While there is substantial literature on

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the application of ICT in subjects like science and mathematics (Kafyulilo, 2015), English language teaching remains under-researched, creating a critical gap in understanding how pedagogical knowledge and ICT tools can be harmoniously integrated.

This study aimed to fill this gap by investigating how pedagogical knowledge, supported by the TPACK framework, influences the effectiveness of English language teaching in public secondary schools in Bagamoyo District. By focusing on the intersection of technological, pedagogical, and content knowledge, the study seeks to provide empirical insights into how teachers can enhance their instructional practices through the integration of ICT. The findings from this study will contribute to the growing body of literature on ICT in education, offering practical recommendations for teacher training and policy development in Tanzania.

II. LITERATURE REVIEW

The TPACK framework, developed by Mishra and Koehler (2006), builds on Shulman's (1986) concept of Pedagogical Content Knowledge (PCK) by incorporating the technological component into teaching. TPACK argues that effective teaching in the digital age requires the intersection of three knowledge domains: technological knowledge (TK), pedagogical knowledge (PK), and content knowledge (CK). The framework emphasizes that teachers must not only be proficient in their subject matter (CK) and skilled in teaching methodologies (PK) but also competent in using technology to enhance instruction (TK). In the context of English language teaching, the application of TPACK is particularly relevant, as language learning benefits from the interactivity, authenticity, and personalization that ICT tools offer (Mishra & Koehler, 2006; Acevedo, 2016).

However, the implementation of TPACK is often challenging in under-resourced settings, such as Tanzania, where limited access to technology and inadequate teacher training pose significant barriers. Studies, such as that by Kihoza (2016), have noted that while Tanzanian teachers recognize the potential of ICT, they often lack the requisite skills to integrate it effectively into their teaching practices. Moreover, the assumption that teachers can seamlessly combine technological, pedagogical, and content knowledge often overlooks the contextual challenges faced by educators in developing countries, such as socio-economic constraints and infrastructural limitations (Mrosso et al., 2023).

Empirical studies on the role of ICT in English language teaching have produced mixed results, particularly in developing countries. Adel et al. (2023) examined pedagogical content knowledge in Iran and found that while teacher training programs improved PCK, they did not fully address the integration of ICT tools. Similarly, Abraham et al. (2022) conducted a study in Ethiopia on ICT-assisted English language teaching, revealing that while ICT training significantly improved teachers' pedagogical knowledge, it did not necessarily translate into improved classroom practices. These studies highlight the gap between theoretical knowledge and practical application, particularly in contexts where technological infrastructure is limited.

In Tanzania, research by Kafyulilo (2015) on the integration of ICT in mathematics and science teaching found that while teachers were eager to adopt new technologies, they faced significant challenges in translating their knowledge into practice due to a lack of resources and training. This suggests that similar barriers may exist in English language teaching, where the integration of ICT requires not only technological proficiency but also pedagogical adaptability (Kihoza, 2016). Despite the potential benefits of using ICT to enhance English language instruction—such as improving pronunciation, vocabulary, and overall language fluency—there is a critical need for more targeted research on how these tools can be effectively implemented in Tanzanian secondary schools.

The integration of ICT in English language teaching in Tanzania faces several contextual challenges, as highlighted by previous studies. Mrosso et al. (2023) noted that teachers in Dodoma struggled with poor ICT infrastructure, insufficient training, and a lack of access to digital resources. Similar challenges are likely present in Bagamoyo District, where the availability of ICT resources is often constrained by funding and logistical issues. Moreover, Lucy (2022) found that while ICT was used to teach basic language skills such as vocabulary and pronunciation in Kenyan schools, its potential for more transformative pedagogical applications remained largely untapped due to these same barriers.

The need for professional development programs that equip teachers with both the technological and pedagogical skills necessary to integrate ICT effectively cannot be overstated. As Mishra and Koehler (2006) argue, the success of the TPACK framework depends on teachers' ability to navigate the complex interactions between technology, pedagogy, and content. In settings where infrastructure and training are lacking, this integration becomes even more difficult, raising important questions about how to adapt the TPACK model to fit the specific needs of teachers in developing countries.

III. METHODOLOGY

This study employed a mixed-method research approach using a sequential explanatory research design. The TPACK framework was used to guide the investigation of dependent and independent variables. The targeted population included Form One and Form Three English subject teachers, head teachers, Ward Education Officers, and the District Education Officer in Bagamoyo District. A sample of 62 participants was selected using probability and non-probability sampling techniques. Quantitative data were collected through a Likert scale questionnaire, while qualitative data were gathered via classroom observations and interviews. Data analysis was conducted using GU-PSPP software (version 4.4.1), with

quantitative data presented descriptively in percentages, tables, and graphs, and qualitative data analyzed thematically. The study provided detailed information to participants about the study's objectives, the scope of their involvement, and the intended use of the findings. The commitment to confidentiality was explicitly communicated, assuring respondents that their data would be handled with the utmost privacy and used exclusively for academic purposes.

IV. FINDINGS AND DISCUSSIONS

The findings from this study provide significant insights into the role of pedagogical knowledge, as guided by the TPACK framework, in shaping English language teaching in public secondary schools in Bagamoyo District. This section discusses the study's results in relation to the use of pedagogical strategies, lesson planning, assessment methods, and the application of ICT in enhancing English language proficiency- as as presented in Table 1. The data reveal important patterns in teachers' use of pedagogical knowledge, with notable variations in the consistency and effectiveness of teaching practices across the district. These findings have critical implications for both teacher training and the broader educational infrastructure in Tanzania.

Table 1 The use of Pedagogical Knowledge and Effective Teaching in English Subject

Statement	Strongly Agree		Agree		Neutral		Disagree		Strongly Disagree	
	F	%	F	%	F	%	F	%	F	%
The teaching methods employed in a presentation of English subject.	14	29	18	38	2	4.2	5	10.4	9	18.8
The classroom assessment methods used by the teacher accurately to measure students' progress and English language proficiency	21	43.8	7	14.6	3	6.3	7	14.6	10	20.9
The teacher's lesson planning demonstrates detailed consideration of students' needs and curriculum requirements in English teaching.	10	20.9	16	33.3	11	22.9	5	10.4	6	12.5
The learning objectives set by the teacher effectively guide students in achieving English proficiency.	8	16.7	15	31.3	8	16.7	10	20.9	7	14.6
The lesson process integrates various pedagogical strategies to enhance English language acquisition	25	52	11	22.9	-	-	12	25	-	-

Source: Field Data (2024)

As illustrated in Table 1, 67% of respondents (29% strongly agreed, 38% agreed) acknowledged that appropriate pedagogical strategies were employed in the teaching of English. However, a notable proportion of participants (28.8%) expressed either disagreement or strong disagreement, indicating significant variations in teachers' confidence and ability to apply effective pedagogical methods. This disparity highlights a critical issue: while a majority of teachers believe they are utilizing sound pedagogical practices, a substantial minority lack confidence in their methods, which may stem from insufficient professional development or resources.

These findings resonate with previous studies, such as those by Taylor (2013), which emphasize that the diversity in teaching methods is crucial for maximizing classroom engagement and improving learning outcomes. However, the variability in responses suggests that not all teachers in Bagamoyo District are equipped with the necessary pedagogical knowledge to adapt their methods to different learning contexts. This is concerning, given the well-established link between pedagogical adaptability and student success, particularly in language acquisition (Shulman, 1986). The significant proportion of teachers who expressed disagreement or neutrality toward their own teaching methods may reflect deeper systemic issues, such as inadequate teacher training and a lack of support for professional development.

Furthermore, the findings suggest that teachers' pedagogical practices may not consistently align with the TPACK framework, which requires an integrated understanding of content, pedagogy, and technology. The relatively high level of disagreement (28.8%) points to the possibility that teachers are either unfamiliar with or unable to fully implement pedagogical strategies that incorporate both content and technology. This gap is particularly important in the context of English language teaching, where ICT can be used to facilitate more interactive and engaging learning experiences.

- *Classroom Assessment Methods and Student Progress*

One of the key aspects of pedagogical knowledge examined in this study was the use of classroom assessments to measure student progress in English language proficiency. As shown in Table 1, 43.8% of teachers strongly agreed, and 14.6% agreed that their assessment methods were accurate in evaluating students' progress. This suggests that a majority of teachers feel confident in their ability to assess student learning. However, the data also shows a significant minority (20.9% strongly disagree, 14.6% disagree) who do not believe that their assessment methods are effective.

This discrepancy is problematic, as classroom assessment is a vital component of pedagogical knowledge and a critical tool for informing instructional decisions (Black & Wiliam, 1998). Teachers who struggle with

assessment are less likely to accurately gauge student performance, which could lead to ineffective instructional adjustments and hindered student progress. The neutral response rate (6.3%) further complicates the interpretation, possibly reflecting uncertainty among teachers regarding their assessment practices or a lack of awareness about the most effective methods for evaluating English language proficiency.

The mixed responses regarding assessment align with the findings of Ndalichako (2019), who argues that while many Tanzanian teachers are knowledgeable about basic assessment techniques, they often lack the tools to implement more dynamic and technology-enhanced assessments. In the context of the TPACK framework, this highlights a gap in the integration of technological knowledge (TK) with pedagogical knowledge (PK). Teachers may be well-versed in traditional assessment methods but struggle to utilize ICT tools, such as online quizzes or real-time feedback systems, that could enhance the accuracy and immediacy of student assessments.

- *Lesson Planning and Consideration of Students' Needs*

The study also examined teachers' ability to align lesson plans with both curriculum requirements and student needs, a critical aspect of pedagogical knowledge. As indicated in Table 1, 54% of respondents (33.3% agreed, 20.9% strongly agreed) believed their lesson plans adequately addressed student needs and curriculum requirements. However, a notable 23% remained neutral, while 22.9% either disagreed or strongly disagreed with the statement.

These findings suggest that while many teachers are making efforts to consider student needs in their lesson planning, a significant proportion are either unsure or do not feel confident in their ability to do so effectively. Lesson planning is a fundamental aspect of pedagogical knowledge, as it ensures that teaching is goal-oriented and responsive to the diverse needs of learners (MOEST, 2019). The fact that such a large percentage of teachers expressed uncertainty or disagreement with their own lesson planning practices points to potential deficiencies in teacher training, particularly in relation to differentiated instruction and the integration of ICT in lesson planning.

The TPACK framework offers a useful lens through which to interpret these findings. While teachers may possess the pedagogical and content knowledge necessary for effective lesson planning, their ability to integrate technological knowledge remains limited. ICT tools, such as digital lesson planning platforms, can help teachers create more interactive and differentiated lesson plans that cater to diverse learning needs. However, the limited use of such tools in Bagamoyo District suggests that teachers may lack either the training or the resources to effectively incorporate technology into their planning processes.

- *Integration of Pedagogical Strategies for English Language Acquisition*

One of the most promising findings of the study was related to the use of varied pedagogical strategies to enhance English language acquisition. According to Table 1, 52% of respondents strongly agreed, and 22.9% agreed that they employed a variety of pedagogical methods to facilitate language learning. This suggests that a majority of teachers are aware of and actively use multiple strategies to enhance student engagement and language acquisition.

However, 25% of respondents disagreed with this statement, indicating that a significant number of teachers may not be effectively using diverse pedagogical strategies. This aligns with MOEST (2020/2021), which found that many Tanzanian teachers struggle with subject mastery, leading to a reliance on more traditional, and often less effective, teaching methods. The reliance on such methods may explain why a quarter of the teachers surveyed do not believe they are using varied pedagogical strategies.

The TPACK framework again provides valuable insights into these findings. While many teachers may be adept at employing pedagogical strategies (PK) and are knowledgeable about content (CK), the integration of technological tools (TK) into these strategies remains underdeveloped. ICT tools can significantly enhance pedagogical practices by providing teachers with a wider range of resources and enabling more interactive, learner-centered approaches. For instance, digital platforms can support collaborative learning and offer real-time feedback, which are essential for language acquisition (Mishra & Koehler, 2006). However, the limited use of such tools in Bagamoyo District suggests that more support is needed to help teachers fully realize the potential of technology-enhanced pedagogy.

- *Challenges in Achieving Learning Objectives*

The findings also reveal challenges in setting and achieving learning objectives. As shown in Table 1, 31.3% of teachers agreed, and 16.7% strongly agreed that the learning objectives they set effectively guided students toward English language proficiency. However, 20.9% disagreed, and 14.6% strongly disagreed, indicating that many teachers are struggling to meet their learning objectives.

This may be due to difficulties in classroom management, time constraints, or a lack of familiarity with ICT tools that could help streamline lesson delivery. As Hall & Hord (2011) note, achieving learning objectives requires a clear understanding of both pedagogical strategies and assessment techniques. Teachers who are unable to manage time effectively or adapt their instructional strategies may find it difficult to guide students toward achieving language proficiency.

The TPACK framework suggests that integrating technology into lesson planning and instructional delivery could help address these challenges. For example, digital tools that support classroom management and personalized learning could help teachers stay on track with their learning objectives, ensuring that all students have the opportunity to meet the expected outcomes.

However, the findings suggest that many teachers in Bagamoyo District are not yet fully equipped to leverage such tools, highlighting the need for additional professional development and support in this area.

V. IMPLICATIONS OF THE FINDINGS

The findings of this study have important implications for the integration of ICT in English language teaching in Bagamoyo District. The variations in teachers' confidence and ability to apply pedagogical knowledge suggest that professional development programs need to be enhanced to focus on the integration of technology with pedagogical and content knowledge. This is particularly important given the role of ICT in facilitating more interactive, personalized, and effective language instruction.

Furthermore, the study highlights the need for improved ICT infrastructure in public secondary schools. Teachers' ability to integrate ICT into their pedagogical practices is often limited by a lack of access to technological resources. Addressing this issue will require investments in both infrastructure and ongoing technical support, ensuring that teachers have the tools they need to effectively use ICT in their classrooms.

VI. CONCLUSION AND RECOMMENDATIONS

The findings of this study underscore the importance of integrating ICT into English language teaching to improve pedagogical outcomes in Bagamoyo District. However, the inconsistent application of pedagogical knowledge, as reflected in the data, highlights the need for targeted interventions in teacher training and resource allocation. The TPACK framework offers a valuable lens through which to understand these challenges, particularly in the context of under-resourced schools where the integration of technology with pedagogical and content knowledge is often difficult to achieve.

To address these challenges, professional development programs must be enhanced to provide teachers with the necessary skills to integrate ICT into their instructional practices. These programs should focus not only on improving teachers' technological knowledge but also on helping them understand how to effectively combine it with their pedagogical and content knowledge, as suggested by the TPACK framework. Furthermore, investments in ICT infrastructure are critical to ensuring that teachers have access to the tools and resources needed to implement these skills in their classrooms.

Policymakers should prioritize the development of ICT infrastructure in public secondary schools, particularly in rural and underserved areas. Additionally, teacher training programs should be aligned with the TPACK framework, emphasizing the importance of continuous professional development in fostering ICT integration. By addressing these issues, Tanzania can move closer to achieving the goals of SDG 4 and improving the quality of English language education in its secondary schools.

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