**ENGLISH TEACHERS’ TECHNOLOGICAL PEDAGOGICAL CONTENT KNOWLEDGE (TPACK) COMPETENCE, CHALLENGES, AND CRITICAL THINKING SKILLS OF GRADE 10 STUDENTS IN SECONDARY SCHOOLS IN NORTHERN SAMAR**

**ABSTRACT**

This study investigated the Technological Pedagogical Content Knowledge (TPACK) competence of English teachers, the challenges they encountered, and the critical thinking skills of Grade 10 students in secondary schools in Northern Samar. Specifically, it examined teacher profiles, competence across the seven TPACK domains, the extent of TPACK-related challenges, and the relationship of these factors with students’ critical thinking performance. A descriptive-correlational research design was employed, using survey questionnaires for teachers and a critical thinking test for students adapted from standardized assessments.

Findings showed that most respondents were mid-career female teachers with education degrees and English specializations. They exhibited highly favorable attitudes toward technology and had attended TPACK-related trainings. The highest competence levels were in pedagogical and content knowledge, indicating strong classroom management and subject mastery. Technological knowledge and its integration into teaching were rated as very satisfactory but indicated the need for further development. Challenges encountered were moderately serious, particularly in curriculum alignment and contextualized instruction.

Most students scored at the basic or beginning levels in critical thinking, with few reaching proficiency and none at the advanced level. Statistical analysis revealed significant relationships between teacher profiles (e.g., age, experience, attitudes toward technology) and TPACK domains. Younger teachers were more tech-proficient, while experienced ones excelled in pedagogy and content. Teachers with higher technological and integrative knowledge significantly contributed to better student critical thinking outcomes.

The study concludes that while pedagogical and content strengths are evident, enhanced technological integration is needed. Recommendations include sustained training, improved infrastructure, and further research on technology-supported instruction.

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***KEYWORDS:*** *TPACK , challenges English teachers, critical thinking skills, , Northern Samar*

## INTRODUCTION

English supports the development of critical thinking and communication skills while enhancing global employability. Fostering and assessing students' critical thinking skills in the English classroom involves a variety of teaching strategies that go beyond Socratic questioning. This method, which consists of asking open-ended, thought-provoking questions, stimulates critical thinking, promotes deeper understanding, and encourages reflection on ideas or concepts.

Additionally, Information and Communication Technology (ICT) plays a crucial role in enhancing both the assessment and development of these skills. The Technological Pedagogical Content Knowledge (TPACK) framework, introduced by Mishra and Koehler (2006) presents a model that emphasizes the interplay between three essential types of knowledge—technology, pedagogy, and content. This model asserts that teachers who can integrate these three components can create more effective, technology-enhanced learning experiences. The competence of English teachers in TPACK is integral to developing students' critical thinking skills. Through well-integrated technological tools, thoughtful pedagogical practices, and deep content knowledge, teachers can create dynamic learning experiences that challenge students to think critically, analyze information, and articulate their ideas meaningfully.

A study by Anwar et al. (2023) highlighted those English teachers utilizing the TPACK framework in EFL classrooms reported significant improvements in students' critical thinking skills. Teachers who effectively integrated technology with pedagogical and content knowledge were better equipped to design engaging and interactive activities that encouraged students to analyze, evaluate, and synthesize information, consequently, fostering their critical thinking abilities.

Similarly, a study by Wang (2021) found that EFL teachers' integration of technology and their TPACK competence were positively correlated with their ability to teach higher-order thinking skills. This suggests that enhancing teachers' TPACK can lead to more effective instruction in critical thinking within English language education. These findings align with the policies set by the Philippine government, specifically the Enhanced Basic Education Act of 2013, which mandates the use of technology in the K-12 curriculum. Moreover, the Philippine Professional Standards for Teachers (PPST, 2017) further stresses the need for teachers to apply technology in their teaching practices to foster innovation and develop effective instructional strategies.

However, many teachers face challenges in applying TPACK due to a variety of factors. The study of Gawang (2024) identified significant challenges that hindered the full attainment of TPACK. These challenges were categorized into three main areas: (1) technological issues, such as the lack of access to modern technology and inadequate infrastructure; (2) pedagogical issues, where teachers faced difficulties integrating technology effectively into their teaching strategies and methods; and (3) content issues, which involved teachers' struggles to align the curriculum with digital tools and technology, lack of familiarity and comfort with digital tools. thus, impeding their ability to make meaningful connections between content and technology.

When teachers face difficulties integrating technology into their instruction, it can limit the use of innovative and student-centered strategies that develop higher-order thinking skills. This lack of effective technology use in classrooms may contribute to students' poor performance in national and international assessments. For instance, the 2023 National Achievement Test reported a low Mean Percentage Score of 37.44% in English for Grade 10 students, and the 2022 PISA ranked Filipino students among the bottom four out of sixty-four countries in creative and critical thinking—areas closely linked to 21st-century digital competencies.

This study explored the TPACK competence of English teachers in Northern Samar, addressing a gap in existing research. With the increasing emphasis on technology integration in English instruction and concerns over students' poor performance in critical thinking, the study examined teachers' competencies, the challenges they faced, and their connection to students’ critical thinking skills.

**METHODOLOGY**

*Locale of the Study*

This study was conducted in the Division of Northern Samar, focusing on twelve large secondary schools and three medium schools located within Balicuatro, Central and Pacific areas of Northern Samar: These schools were selected to represent a diverse cross-section of the teaching population within the province, providing the necessary data for the study. The selection of these twelve secondary schools in the Division of Northern Samar was based on their size, representativeness, and potential to provide comprehensive data for the study. .

*Research Design*

This study utilized a descriptive-correlational research design to explore the current state of variables and identify potential relationships among them without manipulating any of the variables involved.

*The Variables*

The independent variables include the profile of the respondents: age, sex, teaching experience, ,baccalaureate course,specializ- ation, educational attainment, trainings and attitudes toward technology; the TPACK competence of the respondents and the challenges they encountered related to TPACK.

The dependent variable was the students’ critical thinking skills in English.

*Sampling Technique*

In this study, purposive sampling was employed to select the twelve sample schools. The English teachers who were involved in this study were purposively selected from the twelve sample schools.

To select student respondents, the researcher employed random sampling by choosing one class from each participating school for the critical thinking skills test.

*Respondents*

A total of 112 English teachers and 480 Grade 10 students participated as respondents, ensuring a representative sample from the selected secondary schools across Northern Samar.

*Validation on Instrument*

The ten-item survey questionnaire on attitudes toward ICT and the questionnaire on challenges encountered by teacher respondents were adopted from the study of Acebron (2024); therefore, no further validation was necessary. Similarly, the TPACK self-assessment instrument, which was also adapted from Acebron's study, had already been validated and its reliability established within the local context.

The Critical Thinking Test used in this study consisted of thirty items adapted from the National Achievement Test (NAT) and the Program for International Student Assessment (PISA) questionnaires. To ensure content validity and suitability for the target respondents, the instrument was validated by three experienced English teachers.

*Scoring and Interpretation of Data*

The level of TPACK was rated similarly using a five-point scale from "1" (Poor) to "5" (Excellent), based on teachers’ self-assessed competence in technological, pedagogical, and content knowledge. The computed mean scores were categorized accordingly, providing a summary of each teacher's perceived proficiency in integrating TPACK in instruction.

Lastly, critical thinking skills of Grade 10 students were assessed using a 30-item test, checked through the ZIP Grade Scanner. Scores between 25–30 indicated an "Excellent/ Advanced” level, 19–24 as "Proficient/Above Average," 13–18 as "Basic/Average," 7–12 as "Beginning/Below Average," and 0–6 as "Emerging/Poor." This classification allowed for a clear understanding of students’ critical thinking performance and how it related to their teachers’ TPACK competence.

*Data Gathering and Procedure*

Prior to the formal data collection, the researcher conducted a pre-survey in selected secondary schools to determine the total number of teaching staff and to identify the English teachers assigned to the Junior High School level. Upon obtaining consent from the adviser and the Dean of Graduate Studies, the researcher formally requested authorization from the Schools Division Superintendent, as well as from the individual school principals to distribute the questionnaires to English teachers and to conduct the Critical Thinking Skills Test for Grade 10 students in secondary schools across the 1st and 2nd Districts of Northern Samar during the S.Y. 2024–2025..The researcher personally distributed the questionnaires to the English teachers and administered the CT test to Grade 10 student respondents.

After the retrieval of the questionnaires, the researcher checked and analyzed the Critical Thinking Skills Test results along with other survey responses. The data were tallied and evaluated using appropriate statistical tools to ensure accurate interpretation.

*Statistical Analysis of Data*

Frequency counts and percentages were used to identify the profile of the respondents. The weighted mean determined the level of teachers' attitudes toward technology, their TPACK competence, the seriousness of problems encountered in teaching English, and students’ critical thinking skills. Additionally, Pearson r was used to examine significant relationships between respondents' profiles and their TPACK competence, between TPACK competence and the challenges encountered, and between teachers’ TPACK competence and students’ critical thinking skills.

**RESULTS AND DISCUSSION**

*English Teachers’Technological* *Knowledge*

Table 1 presents the level of Technological Knowledge (TK) among English teacher respondents, with an overall mean of 4.08, interpreted as “VS.” This indicates that, on average, teachers possess a competent level of technological knowledge that supports instructional planning and delivery. The highest-rated items are “Using MS Office Suite (Word Excel, PowerPoint) for lesson preparation and delivery” with a mean of 4.55, and “Using the internet and search engines” with 4.44—both interpreted as “Excellent.” These findings show that teachers are highly skilled in foundational digital tools essential for lesson development and accessing instructional resources. However, the lowest-rated items in the current study— “Solving basic technical problems related to computers” (3.70) and “Knowing about basic computer hardware such as CD-ROM, motherboard, RAM and their functions” (3.71)—though still categorized as “VS,” highlight a gap in teachers’ confidence and skills in handling basic technical issues.

**Table 1.**

**Level of TK of English Teachers**

|  |  |  |
| --- | --- | --- |
| **Technological Knowledge** | **Mean** | **Interp.** |
| Using MS Office Suite (Word, Excel,Power Point) for lesson preparation and delivery. | 4.55 | Excellent |
| Using the internet and search engines. | 4.44 | Excellent |
| Communicating through digital platforms like Messenger, WhatsApp,Telegram,Viber or Email for class announcements or other information | 4.38 | Excellent |
| Operating audio-visual equipment like projector, speaker, and computer in the classroom. | 4.35 | Excellent |
| Storing and sharing digital teaching materials on platforms like Google Drive or Dropbox, Cloud, flash drive | 4.13 | Very satisfactory |
| Using software for editing audio files and video files | 3.91 | Very satisfactory |
| Knowing about the basic computer software such as Operating System (OS)like Windows/ MAC, Media Player and their functions. | 3.84 | Very satisfactory |
| Using the emerging technologies such as Zoom meetings, Google Classroom, Google Meet, and Microsoft Teams | 3.75 | Very satisfactory |
| Knowing about basic computer hardware such as CD-ROM, motherboard, RAM and their functions. | 3.71 | Very satisfactory |
| Solving basic technical problems related to computer | 3.70 | Very satisfactory |
| **Overall Mean** | **4.08** | **VS** |

*English Teachers’ Pedagogical Knowledge*

Table 2 reveals that the English teachers demonstrated a high level of Pedagogical Knowledge (PK), with an overall mean of 4.30, interpreted as “Excellent.” This indicates that the respondents possess strong pedagogical competence, particularly in planning and delivering instruction tailored to the needs of English learners

Table 2

Level of PK of English Teachers

The highest-rated items are “Using varied techniques in assessing students’ performance in English” (4.47) and “Using student-centered approaches to achieve specific objectives of my lesson” (4.44), both rated as “Excellent.” These findings suggest that the teachers are not only focused on effective instruction but are also assessment-literate and reflective in their practice. This is supported by the studies of Alshammari, (2021) Abubakir and Alshaboul (2021) and Pangket (2022) which found that English teachers exhibit strong pedagogical abilities. On the other hand, the lowest-rated items—though still rated positively—are “Addressing language learning difficulties effectively” (4.09) and “Managing classroom dynamics in English/EFL settings” (4.18), both under the “Very satisfactory” category.

|  |  |  |
| --- | --- | --- |
| **Pedagogical Knowledge** | **Mean** | **Interp.** |
| Using varied techniques in assessing students’ performance in English | 4.47 | Excellent |
| Using student-centered approaches to achieve specific objectives of my lesson | 4.44 | Excellent |
| Designing lessons that accommodate diverse learning needs in English | 4.39 | Excellent |
| Applying various strategies (e.g., inquiry-based approach, problem solving approach, cooperative learning, project-based learning) to teach English. | 4.32 | Excellent |
| Adapting teaching style to cater for different learners. | 4.31 | Excellent |
| Applying different learning theories suitable for lessons I teach in English | 4.21 | Excellent |
| Managing classroom dynamics in English/EFL settings. | 4.18 | Very satisfactory |
| Addressing language learning difficulties effectively | 4.09 | Very satisfactory |
| **Overall Mean** | **4.30** | **Excellent** |

*English Teachers ‘ Content Knowledge*

Table 3 presents the teachers’ level of Content Knowledge (CK) in English, with an overall mean of 4.32, interpreted as “Excellent.” This indicates that the respondents possess a strong command of the subject matter, an essential component of effective English instruction. This finding is consistent with studies by Pangket (2022) and Abubakir and Alshaboul,(2023) which showed similarly high CK ratings among English teachers.

The highest-rated items are “Applying subject matter to real-world contexts by using relevant examples in English instruction” (4.43) and “Understanding the educational goals, aims, and values of English teaching” (4.41). These scores reflect the teachers’ ability to contextualize English content and align instruction with broader learning objectives—skills that enhance relevance and student engagement. This is in line with Barshay, (2019) who emphasized the importance of content-specific knowledge in developing students’ critical thinking within disciplinary contexts.

In contrast, the lowest-rated items, though still interpreted positively, are “Staying updated with modern trends in English language learning” (4.13) and “Utilizing up-to-date resources such as books and journals in English” (4.18), both interpreted as “Very satisfactory.” These suggest areas for improvement, particularly in terms of continuous professional learning and resource utilization. This observation resonates with Relator,(2021) who highlighted that access to current materials and engagement with evolving instructional trends are often limited, especially in provincial or resource-constrained settings.

**Table 3**

**Level of CK of English Teachers**

|  |  |  |
| --- | --- | --- |
| Content Knowledge | Weighted mean | Interpretation |
| Applying subject matter to real-world contexts by using relevant examples in English instruction. | 4.43 | Excellent |
| Understanding the educational goals, aims and values of English teaching | 4.41 | Excellent |
| Organizing and combining ideas, theories, and concepts in English | 4.40 | Excellent |
| Employing effective strategies to expand and refine my understanding of the English subjects I teach. · | 4.36 | Excellent |
| Demonstrating expertise in English grammar, vocabulary, pronunciation. and syntax. | 4.33 | Excellent |
| Demonstrating a thorough understanding of key facts, concepts, and theories in English. | 4.29 | Excellent |
| Utilizing up-to-date resources such as books and journals in English | 4.18 | Very satisfactory |
| Staying updated with modern trends in English language learning. | 4.13 | Very satisfactory |
| Overall Mean | 4.32 | Excellent |

*English Teachers ‘Technological Pedagogical Knowledge*

Table 4 shows that English teachers’ level of Technological Pedagogical Knowledge (TPK) has an overall mean of 4.09, interpreted as “Very satisfactory.” This indicates that while teachers demonstrate good ability to integrate technology with pedagogical strategies, there is still room for enhancement, especially in maximizing student-centered use of technology.

The highest-rated items are “Selecting appropriate technologies to support the teaching of a particular English lesson” (4.29) and “Helping my students to use technology to find more information on their own” (4.21), both rated as “Excellent.” These results indicate that teachers demonstrate strong confidence in selecting suitable digital tools and in promoting learner autonomy—competencies that align well with inquiry-based instructional approaches. This finding is supported by Wale and Bishaw (2022) who reported high levels of teacher confidence in integrating digital tools for instructional purposes.

On the other hand, the lowest-rated item is “Selecting appropriate technology to assess students’ learning like Quizlet, Kahoot, Edmodo, etc.” (3.62), interpreted as “Very satisfactory.” These findings point to the need for further training in using technology not just for instruction but also for assessment and problem-based learning, a challenge similarly discussed by Santos and Castro (2021) and Dinçer et al. (2024)

**Table 4**

**Level of TPK of English Teachers**

|  |  |  |
| --- | --- | --- |
| **TPK** | **Mean** | **Interp.** |
| Selecting appropriate technologies to support the teaching of a particular English lesson | 4.29 | Excellent |
| Helping my students to use technology to find more information on their own. | 4.21 | Excellent |
| Using technology to design appropriate experiential learning activities | 4.20 | Excellent |
| Flexibly using technology in alignment with teaching activities | 4.16 | Very satisfactory |
| Selecting suitable technologies to enhance the effectiveness of English lesson | 4.13 | Very satisfactory |
| Using new technologies to increase my student's engagement in learning English. | 4.08 | Very satisfactory |
| Engaging students in using technology and digital resources to solve -life problems (e.g. doing projects) | 3.99 | Very satisfactory |
| Selecting appropriate technology to assess students’ learning like Quizlet, Kahoot, Edmodo, etc. | 3.62 | Very satisfactory |
| **Overall Mean** | **4.09** | **VS** |

*English Teachers’ Pedagogical Content Knowledge*

Table 5 reveals that the English teachers demonstrated a high level of Pedagogical Content Knowledge (PCK), with an overall mean of 4.35, interpreted as “Excellent. This indicates a strong ability among teachers to blend content mastery with effective instructional strategies in English language teaching. This aligns with the findings of Pangket, (2022) Azhir and Hashim, (2022) Rachmijati and Cahyati, (2024) Abubakir and Alshboul, (2023) Farhadi and Osturk,as well as Dagdag and Guillermo (2024), in which EFL respondents demonstrated a strong level of pedagogical knowledge (PK) competence. These studies consistently highlight that English language teachers, particularly in EFL contexts, possess a solid foundation in instructional strategies and classroom management, which supports effective language teaching even when technological integration poses challenges.

The highest-rated items are “Recognizing students’ language errors (e.g., vocabulary, grammar, pronunciation)” (4.41) and “Producing lesson plans with a good understanding of the topic in English” (4.39). These scores reflect teachers’ competence in content-specific diagnostics and planning, essential for tailoring instruction to learners’ needs. These aligns with the findings of Dagdag and Guillermo (2024) whofound that English teachers scored highest in PCK among the seven TPACK domains, reflecting their confidence in lesson design and content delivery.

The lowest-rated items—though still rated “Excellent”—are “Selecting effective techniques to guide students’ thinking in learning English” (4.30) and “Using strategies to assist students in identifying connections between various concepts in English” (4.29). These results suggest that while teachers are strong in foundational instruction, they may benefit from further development in promoting higher-order thinking and conceptual linkages within the subject. This is consistent with Bhuttah et al., (2024) who found that teachers with enhanced pedagogical strategies—especially for guiding analysis and synthesis—are better able to support student critical thinking skills.

**Table .5**

**Level of PCK of English Teachers**

|  |  |  |
| --- | --- | --- |
| **Pedagogical Content Knowledge** | **Weighted mean** | **Interpretation** |
| Recognizing students’ language errors (e.g. vocabulary, grammar, pronunciation) | 4.41 | Excellent |
| Producing lesson plans with a good understanding of the topic in English | 4.39 | Excellent |
| Using appropriate techniques to represent the English content in an understandable way | 4.36 | Excellent |
| Presenting English content to suit the diverse interest and abilities of students | 4.35 | Excellent |
| Utilizing techniques in assessing students’ understanding and diagnosing their misconceptions in English | 4.35 | Excellent |
| Achieving the objectives described in my lesson plans | 4.33 | Excellent |
| Selecting effective techniques to guide students’ thinking in learning English | 4.30 | Excellent |
| Using strategies to assist students in identifying connections between various concepts in English | 4.29 | Excellent |
| **Overall Mean** | **4.35** | **Excellent** |

*English Teachers “Technological Content*

*Knowledge*

Table 6 indicates that English teachers have a “Very satisfactory” level of Technological Content Knowledge (TCK), with an overall mean of 4.20. This suggests that teachers are generally capable of integrating technology with English content, though there is still room for enhancement in applying more specific and targeted tools for content delivery.

The highest-rated items are “Leveraging the Internet to gather resources and information for teaching English” (4.33) and “Incorporating technology into lesson plans to achieve course objectives more effectively” (4.29), both interpreted as “Excellent.” These findings highlight teachers’ strength in using readily available digital resources to support planning and instruction, consistent with the findings of Mejia and Sargent, (2023) who emphasized how access to online materials supports the development of students’ analytical and critical thinking skills.

Meanwhile, the lowest-rated items are “Using specific computer applications for English” (4.06) and “Creating English class activities and projects that involve technology-based tools” (4.03), both interpreted as “Very satisfactory.” Though still rated as “Very Satisfactory,” the findings point to an important challenge in the practical application of Technological Content Knowledge (TCK). These findings suggest that while teachers may be confident using general digital tools, they often struggle to effectively design and implement English-specific, technology-enhanced learning activities.

This resonates in the study of Pangket (2022) who highlighted that English teachers tend to use technology mainly for accessing and presenting content (e.g., PowerPoint, YouTube), rather than for fostering interactive or higher-order thinking tasks that leverage the full pedagogical potential of technology..

**Table 6**

**Level of TCK of English Teachers**

|  |  |  |
| --- | --- | --- |
| **Technological Content Knowledge** | **Weighted mean** | **Interpretation** |
| Leveraging the Internet to gather resources and information for teaching English | 4.33 | Excellent |
| Incorporating technology into lesson plans to achieve course objectives more effectively. | 4.29 | Excellent |
| Designing lesson plans that integrate the use of instructional technologies for English. | 4.26 | Excellent |
| Using technology to represent English content in engaging and understandable ways. | 4.26 | Excellent |
| Expanding my knowledge of English through the use of modern technologies | 4.23 | Excellent |
| Identifying and utilizing technologies suited for teaching specific English concepts. | 4.13 | Very satisfactory |
| Using specific computer applications for English | 4.06 | Very satisfactory |
| Creating English class activities and projects that involve technology-based tools. | 4.03 | Very satisfactory |
| **Overall Mean** | **4.20** | **Very satisfactory** |

*English Teachers’ ‘Technological Pedago-*

*gical Content Knowledge*

Table 7 presents the respondents’ level of Technological Pedagogical Content Knowledge (TPCK), yielding an overall mean of 4.09, interpreted as “Very satisfactory.” This reflects that English teachers are generally capable of integrating technology with both content and pedagogy, though full mastery is still developing.

The highest-rated items “Designing English lessons that appropriately combine technologies, content, and teaching approaches” (4.27) and “Selecting technologies to use in my classroom that enhance what I teach, how I teach, and what students learn” (4.26)—both interpreted as “Excellent,” underscore the teachers’ growing capacity to holistically integrate TPACK principles into their instructional design.

These findings align with the study of Rachmijati and Cahyati,(2024) which indicates that a substantial proportion of teachers are proficient in integrating technology into both their teaching approaches and subject-specific content These results are consistent with the findings of Polly who emphasized that strong TPACK enables teachers to design technology-enriched lessons that promote student engagement and foster higher-order thinking skills, related technology use and peer leadership in TPACK implementation.

On the other hand ,the lowest-rated items “Using technology-assisted evaluation tools to assess the learning-teaching process” (3.89) and “Guiding and leading my colleagues in integrating knowledge of content, pedagogy, and technology in English instruction” (4.01)—although interpreted as “Very Satisfactory,” indicate areas that require further enhancement, particularly in technology-supported assessment and instructional leadership. These findings suggest that while teachers may demonstrate competence in using technology for instructional delivery, challenges remain in leveraging it effectively for evaluation and in fostering peer collaboration and leadership. This is consistent with the findings of Polly,(2011) who stressed the importance of providing adequate technological resources and conducting ongoing assessments to ensure alignment between technology use and instructional goals.

**Table .7**

**Level of TPCK of English Teachers**

|  |  |  |
| --- | --- | --- |
| **TPCK** | **W.M** | **Interpretation** |
| Designing English lessons that appropriately combine technologies, content and teaching approaches | 4.27 | Excellent |
| Selecting technologies to use in my classroom that enhance what I teach, how I teach, and what students learn | 4.26 | Excellent |
| Using technology to stimulate students’ curiosity and pursuit of their interests. | 4.12 | Very satisfactory |
| Teaching English with different instructional strategies and computer applications | 4.07 | Very satisfactory |
| Creating opportunities for students to access online resources and technology for learning English | 4.05 | Very satisfactory |
| Using a range of technologies that encourage students to actively participate in learning English | 4.03 | Very satisfactory |
| Guiding and leading my colleagues into integrating knowledge of content, pedagogy, and technology in English content. | 4.01 | Very satisfactory |
| Using technology-assisted evaluation tools to assess the learning-teaching process | 3.89 | Very satisfactory |
| **Overall Mean** | **4.09** | **VS** |

*CT Skills of Grade 10 Students*

Table 4 presents the distribution of Grade 10 students’ critical thinking skills in English, based on their assessed performance. The data show that the majority of students fall within the “Basic/Average” category (36.88%) and the “Beginning/Below Average” category (30.63%), indicating that most learners demonstrate only foundational or developing levels of critical thinking.

Only 28.75% of students reached the “Proficient/Above Average” level, suggesting that fewer than one-third of the respondents can consistently apply higher-order- thinking skills such as analysis, synthesis, or evaluation in their English language tasks. Alarmingly, no students (0%) reached the “Excellent/Advanced” level, while 3.75% were classified as “Emerging/Poor.” This distribution reflects a limited presence of advanced reasoning, argumentation, or independent judgment among the student population.

These findings mirror national and global trends highlighted in the 2023 National Achievement Test and PISA 2022 results, which reported below-target performance in critical thinking and information literacy among Filipino students. The results are also consistent with the observations of Lopez et al., (2023) who cited that traditional, teacher-centered approaches and limited use of inquiry-based learning hinder the development of critical thinking skills in Philippine classrooms.

These findings also align with that of Salas, (2016) who, in her study observed moderate proficiency in certain areas of critical thinking but noted that students exhibited notably weak logical reasoning skills.

**Table 8**

**Critical Thinking Skills of Grade 10 Students in English**

|  |  |  |
| --- | --- | --- |
| **Level of CT skills** | **Frequency** | **Percent** |
| Excellent/Advanced | 0 | 0.00 |
| Proficient/Above Average | 138 | 28.75 |
| Basic/Average | 177 | 36.88 |
| Beginning/Below Average | 147 | 30.63 |
| Emerging/Poor | 18 | 3.75 |
| **TOTAL** | **480** | **100.00** |

**Relationship between the TPACK**

**Competence of English Teachers and**

**CT Skills of Grade 10 Students**

Table 8 presents the correlations between the seven domains of English teachers’ TPACK competence and the critical thinking skills of their Grade 10 students in English. The data reveal that three domains—TK, TPK, TCK—have statistically significant positive correlations with students’ critical thinking skills, underscoring the critical role of technology integration in 21st-century teaching and learning.

The strongest correlation was found between Technological Knowledge (TK) and students’ critical thinking skills (r = 0.637, p = 0.006), indicating that teachers who are proficient in using digital tools are better equipped to cultivate students’ analytical, evaluative, and reasoning abilities. This aligns with Sampang, (2024) who reported that technology, when used as an active learning tool, enhances inquiry, logical reasoning, and problem-solving—core elements of critical thinking. Supporting this, Algouzi et al. (2024) found that technology-mediated self-study significantly improved EFL students’ ability to analyze and make sound decisions. Their study underscores the role of TK in creating reflective, interactive learning spaces In line with Mishra and Koehler’s original TPACK framework, this reinforces the idea that technological fluency is no longer a peripheral skill but a core competency for effective teaching that fosters critical engagement.

TPK also showed a significant positive correlation with students’ critical thinking (r = 0.554, p = 0.005), suggesting that the effective integration of technology with sound pedagogy fosters cognitively stimulating learning environments. This finding aligns with Anwar et al. (2023) and Nurtjahyani et al., (2022), who found that TPACK-based instructional strategies enhance students’ problem-solving, evaluation, and reflective thinking skills. Echoing these insights, Schenck (2024) observed that EFL learners using AI-powered platforms and digital forums developed stronger analytical and evaluative skills.

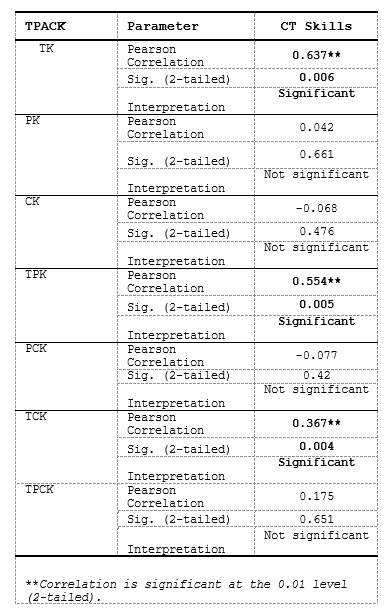
Additionally, TCK showed a significant correlation with students’ critical thinking (r = 0.367, p = 0.004), indicating that when teachers effectively use technology to represent subject matter, they enhance students’ reasoning and interpretative skills. Jumariati et al. (2024) support this, emphasizing that technology-enabled content delivery not only deepens understanding but also fosters critical application and judgment.

In contrast, the domains of PK, CK, PCK, and even overall TPACK did not exhibit significant correlations with students’ critical thinking skills. This finding may suggest that while foundational knowledge in pedagogy and content is necessary, it is no longer sufficient in isolation to foster critical thinking in 21st-century learners. This supports the argument of Barshay (2019) and Pangket (2021), who asserted that the synergy of pedagogy, content, and technology—not their individual strengths—is what activates deeper learning and critical engagement. Laurente found that although PK alone may not directly influence critical thinking, it becomes significantly more effective when integrated with technological and content knowledge, allowing teachers to create engaging, thought-provoking learning experiences.

This perspective is further reinforced by Stoilescu’s assertion (2015) that meaningful learning—and, by extension, the development of critical thinking—emerges most effectively when technology, pedagogy, and content interact in a dynamic and integrated manner, rather than functioning in isolation.

**Table 9**

**Relationship between English Teachers’ TPACK Competence and CT Skills of Grade 10 Students**

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**CONCLUSION**

The findings of the study affirm that English teachers in secondary schools in Northern Samar possess diverse professional backgrounds and experiences that influence their teaching practices. While most teachers specialized in English and had formal training in education, a number still came from non-English or non-teaching backgrounds.

Overall, teachers demonstrated commendable levels of TPACK competence, particularly in pedagogical and content knowledge. Their technological knowledge was satisfactory, but integration across domains—especially in technological pedagogical content knowledge—was less developed. This suggests that while foundational knowledge is strong, the application of integrated digital pedagogy still requires reinforcement. There is a need to provide support that focuses not only on individual domains but on the interconnected use of technology, pedagogy, and content in real teaching scenarios.

Despite these competencies, teachers continue to face moderately serious challenges, especially in content and technological areas. Limited teaching materials, curriculum alignment issues, and a lack of familiarity with digital assessment tools were commonly reported. These barriers suggest that systemic and contextual factors—such as infrastructure, access to resources, and curriculum design—play a significant role in hindering effective TPACK implementation. Addressing these challenges requires not only enhancing teacher skills but also improving institutional support systems.

The study also revealed that students’ critical thinking skills are largely at a developing stage, with most falling within average or below-average levels. No student was identified as achieving an advanced level of critical thinking. This reflects a critical gap in the effectiveness of current teaching strategies in promoting higher-order thinking. It suggests an urgent need to re-examine classroom approaches and integrate instructional methods that cultivate analytical and evaluative reasoning, especially in English subjects where such skills are foundational.

The significant relationship between teachers’ profiles—particularly age, sex, teaching experience, and attitudes toward technology—and their TPACK competence underscores the importance of designing personalized and differentiated professional development. The findings indicate that younger teachers are generally more comfortable with technology, showing strength in technological knowledge and integration, while older teachers tend to excel in pedagogy and content expertise. Furthermore, gender differences were evident: female teachers often demonstrate stronger pedagogical sensitivity and content delivery, whereas male teachers may show greater confidence in exploring and applying digital tools. These distinctions suggest that training programs should be tailored to address the unique strengths and needs of each group—for instance, newer teachers may benefit from targeted support in instructional design and classroom management, while experienced educators could enhance their digital competence through hands-on technology integration workshops. Similarly, programs for female teachers could focus on building confidence in using emerging technologies, while male teachers may benefit from deeper engagement with pedagogical frameworks and student-centered teaching strategies. Ultimately, a differentiated approach ensures that all educators, regardless of background, are empowered to achieve advanced levels of TPACK competence. The findings further indicate that higher levels of TPACK competence are associated with fewer perceived teaching challenges. This underscores the importance of continuous, targeted capacity building to enhance TPACK across all domains. Teachers who are confident in their technology integration skills are less burdened by implementation barriers, enabling them to create richer, student-centered learning environments. Schools must ensure that capacity-building efforts are sustained, relevant, and supported by strong leadership and policy alignment.

Finally, the positive association between teachers’ technological-related competencies and students’ critical thinking skills highlights the transformative potential of TPACK-based instruction. Teachers who effectively integrate digital tools into content delivery and pedagogy create meaningful learning experiences that foster critical thinking. Therefore, policies and programs must prioritize equipping educators with the tools, training, and time to design technology-enriched, inquiry-based lessons. Doing so not only strengthens teacher performance but also significantly enhances students' readiness for the cognitive demands of 21st-century education.

**RECOMMENDATION**

Based on the findings of the study, the following recommendations are presented:

1.The Department of Education – Division of Northern Samar, through the Curriculum Implementation Division and Human Resource Development, is encouraged to design and implement continuous, needs-based professional development programs focusing on the integration of technological, pedagogical, and content knowledge (TPACK), with differentiated training modules for novice and experienced teachers.

2.School heads and education program supervisors are advised to conduct regular mentoring, coaching, and learning action cell (LAC) sessions that emphasize integrated technology use in English instruction, especially targeting the enrichment of Technological Pedagogical Knowledge (TPK) and Technological Content Knowledge (TCK).

3.English teachers, particularly those with strong TPACK competence, are encouraged to serve as peer mentors and facilitators of school-based training to build a culture of collaboration and shared expertise in digital pedagogy.

4.Policymakers and education planners at the regional and national levels should review and revise curriculum guides, ensuring alignment with actual classroom contexts and digital resources available in schools, thereby reducing content delivery gaps and instructional confusion.

5.Local government units (LGUs)and Department of Education are urged to invest in infrastructure development and resource provision, including the procurement of digital tools, internet connectivity, and instructional materials that support technology-enhanced teaching and learning.

6.Teacher education institutions (TEIs) should revisit their pre-service curricula to include more robust and practice-based modules on TPACK, especially focused on integrating digital tools in English language instruction and in fostering critical thinking.

7.The Department of Education, in collaboration with testing and assessment bodies, should develop and provide digital and contextualized assessment tools for teachers to measure and support students’ critical thinking skills more effectively in English and other learning areas.

8.Teachers handling English in secondary schools must be given structured time and support to collaboratively develop inquiry-based and technology-integrated lesson plans, aimed at promoting higher-order thinking and analytical skills among Grade 10 students.

9.Parents and guardians, in partnership with schools, should be engaged in supporting students’ use of technology for learning at home, particularly by promoting responsible and purposeful use of digital tools to reinforce classroom instruction and enhance critical thinking development.

10.Future researchers are encouraged to conduct longitudinal and qualitative studies to explore how TPACK integration affects student outcomes over time and to evaluate the sustainability and impact of TPACK-based instructional interventions in diverse educational setting.

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Authors have declared that they have no known competing financial interests OR non-financial interests OR personal relationships that could have appeared to influence the work reported in this paper.

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