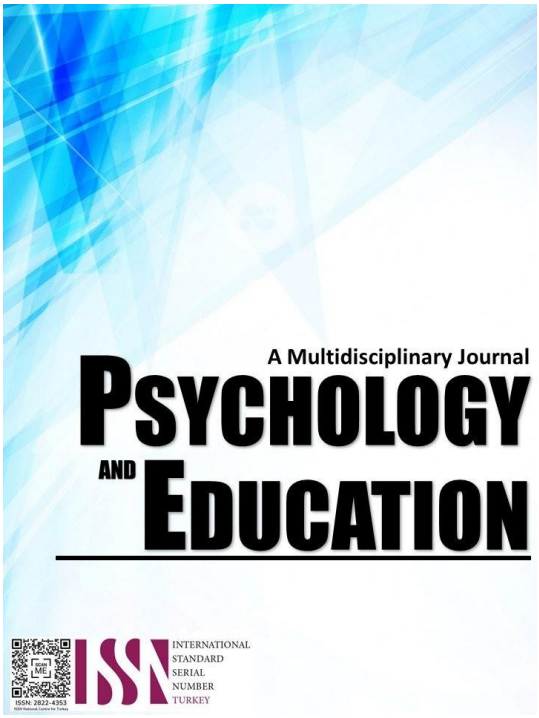
TECHNOLOGICAL PEDAGOGICAL CONTENT KNOWLEDGE SKILLS: A MIXED METHOD STUDY



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Research Article

Technological Pedagogical Content Knowledge Skills: A Mixed Method Study

Louilyn U. Magallanes,* Jonelson C. Escandallo
For affiliations and correspondence, see the last page.

Abstract

The study aimed to describe the Technological Pedagogical Content Knowledge (TPACK) Skills of teachers. This study engaged mixed method design, utilizing convergent parallel approach. The participants of the study were the teachers from all year levels. There were 274 teachers who were randomly selected for quantitative and 10 for the qualitative which were purposively selected: According to the findings of this research, the level of TPACK skills of the teachers, it was revealed that such level was very high among them. The data analysis captured here had major relationship with highlighted variables when grouped by age and gender showed no significance difference and affirmed that teachers possessed TPACK skills on teaching. These consistencies irrespective of educations evidence the strong foundation of the TPACK skills among educators. It also points to the increased efficiency of current teacher professional development activities in preparing teachers armed with TPACK knowledge. The results from the quantitative and qualitative converged when they were being corroborated. The results confirm in this study, which stated that teachers' utilization of TPACK significantly enhances skills of the teachers.

Keywords: *content, pedagogical, technological knowledge, TPACK Skills, Philippines*

Introduction

The technological pedagogical content knowledge (TPACK) skills predicated on the introduction of giving birth to 21st-century learning, specific attempts directed at improving individual 21st-century skills may need aiding research. In the context of 21st-century learning in Indonesia, instructors' perceptions of TPACK are equally critical. Teachers must have data information and communication technology (ICT) skills in order to create meaningful learning since ICT allows pupils to operate cooperatively and independently in response to the demands of 21st-century abilities. This is in response to teacher competence standards requirements, which need instructors or teachers to use information, communication, and new technology for self-development, particularly in communication strategy (Masrifah et al., 2018).

Consequently, in Indonesia the technological, pedagogical and content knowledge (TPACK) applied in their teaching activity was not very efficient. In discovering that they cannot simultaneously integrate multiple technologies in particular content area in order for students to become more interested in teaching. They experienced difficulty in choosing the right technology rapidly, teaching topics notwithstanding the accent, speaking eloquently and innovatively, addressing boys' classroom differently, syncing teaching-learning objectives with the material and student capabilities, organizing a learner-centered classroom with technology, controlling noise level and technology for specific content (Abidah et al., 2018).

Similarly, in the Philippines, TPACK is used in different subjects, leading to widespread technology use in classrooms. However, simply having technology in schools does ensure effective use. While digital resources offer benefits, keeping up with technology updates can be time-consuming for teachers. It was concluded that teachers should have understood of how technology, pedagogy, and content interact to support learning. Teachers should not only be technology-literate but should be able to design teaching-learning activities that effectively integrate these three components of teacher knowledge so learning would be meaningful (Pangket, 2022).

Therefore, in today's quickly changing educational scene, having abilities in Technological Pedagogical Content Knowledge (TPACK) is not only helpful, but also required. The dynamic nature of modern classrooms emphasizes the necessity for instructors to smoothly integrate technology into their teaching approaches. Teachers who can manage the junction of technology, pedagogy, and content understanding, generating a learning environment that is not only engaging but also relevant to the digital age. Hence, there is a need to conduct this study to generate solutions to this problem, that will measure the ability and skills of a teacher. While the desire to acquire skills rises as the demand for educators' growth, ensuring that instructors are ready to harness the full potential of educational technology and enhance the learning experience for their students. If educators do not prioritize and develop these abilities, they may find it difficult to stay up with the revolutionary impact of technology in education. Through a mixed method research study, the findings might help the institutions enhance their education programs by discovering more helpful, effective, and adaptive techniques for improving teaching and learning process.

The technological pedagogical content knowledge skills have been the subject of numerous studies, like the study of Koh et al., (2018) entitled "Developing Indonesian Teachers' Technological Pedagogical Content Knowledge for 21st Century Learning" and the study of Oner (2020) entitled "A Virtual Internship for Developing Technological Pedagogical Content Knowledge", both studies focused on the technological pedagogical content knowledge that impact the teaching and learning outcomes of the teachers. However, this study is different to the studies that have mentioned as this study specifically investigated the technological pedagogical content knowledge (TPACK) skills of teachers in the local college of Barangay Maniki, Kapalong Davao del Norte using a mixed method approach, this study aims to fulfill and discover the gab by unraveling the technological pedagogical content knowledge skills of the

teachers.

Research Questions

This study investigated the technological pedagogical content knowledge skills of the teachers using a mixed method research approach. The purpose of utilizing this approach was to gather both quantitative and qualitative data all together, merging the findings and use them to address research problems.

1. What is the level of Technological Pedagogical Content Knowledge among teachers in tertiary level?
2. What are the perceptions with regards to Technological Pedagogical Content Knowledge (TPACK) skills?
3. What are the insights with regards to Technological Pedagogical Content Knowledge (TPACK) skills?
4. To what extent do qualitative data corroborate with quantitative data?

Methodology

Research Design

This research utilized a mixed methods design, which involves the interlinking of qualitative and quantitative components to provide a more comprehensive account of the research problem. As defined by Johnson et al., (2017), in a single or multiphase research, mixed methods employed quantitative and qualitative methodologies. It is also an investigation or approach to the social world that ideally involves more than one methodological tradition and thus more than one way of knowing, as well as more than one type of technique for gathering, analyzing, and representing human phenomena, all for the purpose of better understanding.

In this research, a mixed methods approach was used, incorporating both quantitative and qualitative research methods. In the quantitative phase, an adopted survey questionnaire was used to identify the technological pedagogical content knowledge skills of the teachers. Meanwhile, in the qualitative phase, a standpoint of the participants regarding the significant result of the quantitative phase was heard and revealed through in-depth interview and focus group discussion.

The convergent parallel design involves the simultaneous implementation of both quantitative and qualitative studies during the same phase of the research process. In this design, both methods have equal priority, enabling them to play an equally important role in addressing the research problem. This design maintains the independence of the studies during data collection and analysis and then merges or combines the results during the overall interpretation (Petrosyan, 2018). This approach not only validates the research but also allows for a more profound understanding of the phenomenon under investigation. By combing the results obtained from different methods, researchers can potentially reveal new insights that might have been overlooked using a mixed method approach.

In context of the study, convergent parallel approach was followed since the study started by employing the quantitative phase. This means that the survey questionnaire of the variable was administered in the research respondents which were the instructors from KCAST to identify the level of skills and abilities. After that, when results for quantitative phase were ready, the qualitative phase was commenced in which in-depth interviews and focus group discussions was conducted in order for the participants to share their standpoints and insights of the quantitative results.

In the quantitative strand of this study, descriptive design. Describing the skills of the teachers towards the technological pedagogical content knowledge. To gather primary data, survey questionnaires were distributed to the target respondents who are the instructors from Kapalong College of Agriculture Sciences & Technology that could provide skills and abilities in the process of teaching – learning process. This method helps in acquiring complete and accurate data (McCombes, 2019).

On the other hand, in the qualitative strand, phenomenology as an approach in qualitative research was employed. As defined and explained by Forris (2015), phenomenology research reveals details by pinpointing events based on perceptions of the participants. This often entails gathering comprehensive data and perceptions using inferential, qualitative techniques including participant observation, conversations, and interviews. Additionally, Delve (2022), it is a qualitative research approach that seeks to understand and describe the universal essence of a phenomenon. This investigates the everyday experiences of human beings while suspending the researchers' fixed assumptions about the phenomenon. In other words, phenomenological research studies lived experiences to gain deeper insights into how people understand those experiences.

In the study, it was examined by one unique phenomenon which is about the outcomes and findings of the quantitative phase which comprise one problem of the variable, which is technological pedagogical content knowledge skills, a phenomenological technique was applied. This was accomplished through in-depth interviews and focus group discussions to hear and reveal the participants' perspectives, thoughts, and perceptions of the important discoveries and outcomes of the quantitative phase. This was done to corroborate the data and clearly explain the study's findings.

Participants

The participants of the study both in quantitative and qualitative strands were described in this section. The participants were essential in conducting this study as they were the primary sources of data needed in this study. With them the goal of the study was achieved and realized.

Quantitative Phase

The respondents of this study were the instructors from Kapalong College of Agriculture, Sciences and Technology during the second semester of S.Y. 2023-2024. They were chosen as the respondents because this study was about the technological pedagogical content knowledge skills of the teachers. Since the study purports to involved teachers in local college, it was fitted and validated to include instructors in Kapalong College of Agriculture, Sciences and Technology.

Furthermore, the respondents were determined through random sampling, specifically, stratified random sampling to establish randomness and maintain scientific rigor in the study. This method involved diving population into smaller groups, or strata, and randomly selecting a sample from each stratum. The per-stratum samples were then combined to create an overall stratified random sample. An alternative to simple random sampling, stratified random sampling ensures that each stratum is represented in the sample and can provide more accurate results when analyzing subgroups within the population (Nguyen et al., 2020).

This sampling method was particularly appropriate in this study because the respondents, which were the teachers was randomly selected based on strata, which in this case were all the teachers in Kapalong College Agriculture, Sciences and Technology. This also ensures that all of the respondents in the population have equal changes of being selected. The researcher wrote a formal request letter to the College HR and gained access to the population of instructors from all year levels. The researcher then gathered the data from the population of instructors to compute the sample. After getting the data, the researcher sent the information to her statistician for computation of the study sample.

Table 1.1. *Distribution of Respondents*

Instructors	*Population*	*Sampling*	*Percentage*
Part Time	57	41	26.85%
Full Time	103	73	48.22%
Total	160	114	75.07%

This study was conducted among instructors in Kapalong College of Agriculture, Sciences and Technology. The part time and full-time instructors have a total of 160. However, the sample appropriate for the study computed by the statistician, which include 41 out of 57 for part time instructor and 73 out of 103 for full time instructor. In total of 114 out of 160 instructors in KCAST.

Qualitative Phase

In contrast, subject selection in qualitative research was purposeful. In this phase, non-probability sampling specifically purposive sampling technique was utilized. Participants were selected who can best inform the research questions and enhance understanding of the phenomenon under study (Kuper et al., 2008). Only 10 participants of instructors were enjoined in the qualitative phase: five (5) for in-depth interview and another five (5) for focus group discussion. All of them should be an instructor at KCAST and he or she is a 1st year, 2nd year, 3rd year or 4th year instructor. It was noted that participants in qualitative phase must not have participated in the data collection of quantitative phases.

Consequently, the researcher used purposive sampling technique in selecting and choosing the participants to be included and involved both for the IDI and FGD. As explained by Nikolopoulou (2022), purposive sampling refers to a sampling technique in which participants are selected because they have characteristics that is needed in the samples for the study. In other words, participants are selected on purpose in purposive sampling.

Lastly, for the selection process, the researcher set an inclusion criterion as basis. This includes: (1) a teacher of Kapalong College of Agriculture Sciences and Technology; (2) an instructor; (3) can be male or female or any gender; and (4) must have the willingness to participate in the study.

Table 1.2. *Profile of the Participants*

Assigned Code	*Age*	*Gender*
IDI 01	26	Female
IDI 02	29	Female
IDI 03	32	Male
IDI 04	26	Female
IDI 05	35	Female
FGD 01	26	Male
FGD 02	28	Female
FGD 03	30	Female
FGD 04	29	Female
FGD 05	46	Female

Instrument

This section provided an overview of the research instruments employed to collect both quantitative and qualitative data from the participants and respondents of the study.

Quantitative Phase

In identifying the level and status of TPACK Skills, an adopted questionnaire from a published and conducted study was used. The surveys were contextualized in the present study based on its emphasis and context. After the researcher contextualized the research questionnaire, particularly in the construct of each item under each variable, it was verified and appraised by external validators who were all research specialists. Later on, the evaluators' ideas and recommendations were rigorously followed to make the research instrument more credible. In addition, the researcher ensured that the questions in the questionnaire were written in basic English so that respondents can answer each question and understand the goal of the research.

TPACK Skills. The questionnaire for this variable was adapted from the study of Handley et. al., (2018). This tool was intended to determine the level of teachers' TPACK Skills. It has 64-item distributed unevenly to six indicators, technological knowledge, pedagogical knowledge, technological content knowledge, pedagogical content knowledge, technological pedagogical knowledge, and technological pedagogical and content knowledge.

Qualitative Phase

As to the qualitative phase, a set of researcher-made grand tour questions was devised by the researcher and validated by the panel of experts. This was a set of open-ended questions that was developed based on the results of the survey. This was used as a compass for the in-depth interviews. Of all the participants who answered the survey questionnaire in the previous phase, seven were purposively selected to undergo the IDI and another seven for the FGD. Interviews were suitable in gleaning insights, stories, experiences, opinions, and other useful information which could not be expressed with the use of numbers. Lastly, the interview guide consisted of two parts. First for the letter of permission for the participants and the second one is for the interview proper.

Procedure

There were several steps in the data collection process. The following procedures were followed during the conduct of the study: From the time when the researcher was done subjecting the paper to a thorough evaluation by the panel of examiners, the research manuscript was subjected to ethics review to evaluate whether the study followed the mandated protocol needed for the ethical consideration and trustworthiness of the study. Also, the researcher requested for the Ethics Clearance to conduct the study. After which, the following were the stages cleared by the researcher in gathering the data needed in the study.

First and foremost, the researcher wrote a letter asking permission to conduct the study. A request letter was signed by the adviser attached with an endorsement letter signed by the College President of the Kapalong College of Agriculture Science and Technology. Afterwards, with the college president's approval, the researcher was able to begin the gathering of data.

Meanwhile, before gathering the data from the respondents, the researcher requested a gatekeeper in KCAST to assist in conducting the said study. There was an orientation conducted by the researcher making the gatekeepers to be fully aware about the nature and purpose of the study. Also, part of the orientation was that the researcher gave the informed consent form to the gatekeepers. After that, the researcher discussed and oriented the respondents as to the goal and purpose of the study which was stipulated in the informed consent form. Also, as to what was their role in the conduct of the study. After the orientation, the respondents signed the form which meant that they fully understood the purpose and goal of the study. Thus, they volunteered to be part in the conduct of the study as the research respondents.

After these essential and necessary preliminaries in conducting the study, discussed below were the different essential and significant measures in gathering the data, both in the qualitative and quantitative phase of the study. In the data gathering process, optimum confidentiality of data is assured.

Quantitative Strand

In the quantitative phase, the researcher conducted the study in a face-to-face basis. This means that the researcher personally distributed the survey questionnaire to her participants. To be specific with data gathering processes, below are the different steps to be taken by the researcher:

First, after the respondents signed the informed consent form, they were given the survey questionnaire which contains different questions for the variable which is TPACK Skills. In the questionnaire, the respondents didn't need to include their name as it was optional. Also, they were given ample time to complete answering the questions so that I got a valid and reliable answers;

Second, after the respondents completely answered all the stipulated questions in the survey questionnaire, the researcher completely retrieved the questionnaire in preparation for the tallying process. Consequently, the respondents were given token of appreciation as a form of gratitude in their voluntary participation in the study. Additionally, in the tallying of the responses, a format of the tallying of data asked by the researcher to her statistician for easy treatment of the data afterwards;

Third, after tallying of the research data, the analysis and treatment of the data followed. The tallied data were given to the research statistician who is capable and is knowledgeable in data analysis and data treatment;

Fourth, when the statistician returned the result of the data analysis and treatment, the researcher analyzed and interpreted the results.

Of course, this was with the help and guidance of the research adviser. This was to ensure that the analysis done is truthful and correct; and

Lastly, in the whole process of the data gathering, data treatment, and data analysis and interpretation, it was guaranteed that the data taken from the research respondents will be kept confidential. All of the answered survey questionnaires were putted in one box with lock and a unique and strong pin code so that, it is only the researcher who can gain access of it. With these, it was guaranteed that no other person can access the gathered data.

Qualitative Strand

When the results and findings of the quantitative phase were already available, the data gathering under qualitative phase begun. By which, the main purpose of the data gathering was to confirm and affirm results in the first phase through in-depth interview and focus group discussion. In this phase, the researcher followed the following procedures:

First, since the respondents already signed the informed consent before the conduct of the quantitative phase, the researcher chose 10 participants on the same sample to be part in the in-depth interview and focus group discussion.

Second, when the 10 participants were already chosen and selected, another orientation was conducted. This orientation was to inform and educate these participants on the next stage of the research. Of which, they were fully informed about their role on this stage of the research. In addition, in case that during the time of the orientation, any of the identified participants can withdraw his/her participation, the researcher will respect this. Hence, the researcher will look for a new participant and volunteers.

Third, after the orientation, a separate one-on-one interview with the first 5 informants started. This was conducted via google meet, over the phone, messenger, or any platforms that the informants wish to use. After the in-depth interview with the 5 informants, the focus group discussion with the remaining 5 participants started. Still, online platform agreed and convenient with the participants to utilized in the whole discussion.

Fourth, after the interview process, the researcher transcribed all of the individual responses of the 5 informants in verbatim form. Also, a separate transcript was prepared for the 5 participants in the focus group discussion.

Fifth, when the individual transcript of all the 5 informants were available as well as the 5 transcripts for the focus group discussion, the researcher gave each of the informant and participant a copy of this. This was for them to check and verifier whether the transcript is right or wrong. In addition, if any of the participants wish to delete part of the transcript, or if they wish to add more responses, the researcher conformed and followed to this.

Lastly, when the verified copy of the individual transcript from the 10 informants and one from the focus group discussion was ready, the analysis of data which was the thematic analysis will follow.

Data Analysis

This section discussed the detailed description of the different processes that were employed in analyzing the gathered data from both the quantitative and qualitative phases of the study.

Quantitative Data Analysis

The quantitative data was analyzed using descriptive statistics, Pearson-r, and regression analysis. Here are the discussion to each of the statistical tool: (1) Pearson-r was used to determine the significant of TPACK skills (2) Mean was used to determine the level of TPACK skills to answer research questions or problems numbers 1, 2, and 3; (3) Standard Deviation was used to measure how spread out the responses of the respondents are; (4) Multiple regression was used to predict the value of teachers' engagement taken from TPACK skills.

Qualitative Data Analysis

In the qualitative phase, the data collected during the conduct of the interview was analyzed to come up with conclusions to affirm and support the findings in the quantitative phase. As explained, analysis of data in research involves summarizing the mass of data collected and presenting the results in a way that communicates the most important features of the study (Harding, 2013).

In the study, data analysis was done after the process of transcribing the results of the in-depth interview and focus group discussion among the participants. The researcher used coding and thematic analysis in analyzing the collected and gathered data. Further, in displaying and presenting the data, it was organized into different categories that have similar responses from the different participants. The process is called thematic analysis.

As per definition, thematic analysis was the method utilized in analyzing and reporting the pattern of themes in the study. Braun & Clarke (2013) stated that thematic analysis is a flexible data analysis plan that qualitative researcher used to generate themes from interview data.

To familiarize the data, the researcher listened and transcribed the recorded interview of the participants and kept on reading it to

identify similar answers given by the participants. After familiarizing the data, coding of the data begun of which the researcher used coding of the data to arrive and generate themes, ideas, and categories. Then similar passages of text were marked with a code label so that they can easily be retrieved at a later stage for further comparison and analysis.

After the codes were clustered together, the researcher labeled the clusters based on the meaning or relationships shared by the codes. Naming the codes was the next process, involving the utilization of the labels created for the theme and providing a comprehensive name that describes the relationship or meaning conveyed in that specific theme.

Lastly, to strengthen the rigor of the qualitative data, the researcher also tapped her data analyst who was an expert on the field and my research adviser for further verification of the data. Then, the researcher presented the findings and interpretation of the data through tabular forms for better understanding and elaboration.

Ethical Considerations

The researcher strictly ensured ethical consideration that included dignity, right, Voluntary and informed participation, and anonymity to uphold the ethic. These principles were carefully observed throughout the conduct of the study with and the principle of putting into consideration the rights of the participants taking precedence over the others (Mack et al., 2005).

Thus, to have all the teachers/instructors of KCAST trust the findings of this study, this research ensured that participants were protected under safety and anonymity, their identity being fully concealed. Measures were very much executed that hinged on the above stated ethical considerations so that the confidence of the participants in the research would be maintained all through.

Social Value. The research focuses on the TPACK Skills of the teachers. Thus, the present study will endeavor to investigate the experience as well the strategies, techniques and useful information of teachers regarding TPACK Skills on the basis of which all teachers experience problems and difficulties in an attempt to improve their teaching effectiveness. However, by escalating the identification of these problems, the study aims at developing framework that targets in liability so as to ensure that educators can make special provisions in accommodating learners. In conclusion, the results are intended to help create long-term successful pedagogical practices that enhance teachers' TPACK Skills.

Furthermore, it was useful for the researcher of the study on expounding the overall process that is required so as to fully engage all teachers, but especially on the main purpose of the study and the process of data collection. Therefore, they were taken through the result of the study and any other possible audiences who could be of benefit from the study were made to go through it. Even more relevant, the researcher was truthfully committed to social value in research by using convergent parallel mixed method design & proper use of same in the study.

Informed Consent. Due to the importance of maintaining ethical conduct in the study, the researcher offered permission and consent letters to the participants for the four types of methods the qualitative and quantitative phases, including the study's design and methodology. In the process of developing these documents, participants aimed at the complete clarity of the study's procedures and mutual decision making among the participants. Those who refused to participate in the study were let to opt out without explaining their decisions were welcome knowing that their data would not be disclosed to anyone. As a result of the above-mentioned ethical practices, the researcher has ethically investigated the research study.

Vulnerability of the Research Participants. The research of the study had taken into consideration the participants' vulnerability fully. Additionally, the collection of both qualitative and quantitative data was fully dealt with consents provided signed as a show of their consent to participate in the data collection hence all teachers were less exposed to the study. Further and in relation to the interview, as well as in the execution of the gathering of essays from the teachers using an adapted rubric, particular schedules were planned according to the participants' availability or convenience. Passwords were then offered to the participants for their efforts in a participation to sustain the study.

The Risks, Benefits and Safety. The following ethical principle are stressed: A strong commitment to the principles of research risk minimization and specifically, ensuring the participants' well-being. In the research for this study, all efforts were made to guarantee the participants well-being and privacy, and this was in the following ways. All collected data was controlled and kept confidential; the data was only used for the purposes of the conducted research. The results of this study may therefore be disseminated through channels that include institutional presentations, scientific journals and conference presentation at local, national or international forums. The researcher having set the goal to disseminate the results in order to add to the body of knowledge within the given discipline.

Privacy and Confidentiality of Information. To the data, results and findings including the safeguard of participants respectively various methods were applied. On the other hand, the pseudonymization of all participant identity was done and avoided from being presented to anybody in any form such as audio records, encoded transcripts, notes, soft and hard copies of data and other related things should be removed after conduct of analysis. In addition, since the participant will be asked to disclose personal information, the researcher narrated and labeled each participant as participant 1, participant 2, participant 3, etc. in compliance with the Data Privacy Act of 2012. This measure entailed ensuring while speaking, documenting or sharing any information that may lead to identification of the participant in terms of name, gender, ethnicity or employment/location was well guarded. From the proper coding and other measures

as adopted, the researcher was in a position to maintain anonymity of the participant and honor the participant's right to privacy.

Justice. In this study, the researcher made sure that the participants self-identified as teachers had their rights protected. Since the study was designed to fill the gap of examining the TPACK Skills of the teachers. For their contribution, they were appropriately acknowledged for participation in the study and the actual achievement of the research. to reduce bias and increase the sample size the researcher had to use both random samples as well as purposive samples. Furthermore, it should be noted that all teachers were not forced to participate, and they were allowed to refuse to fill the questionnaire, if they wanted to do so. For their effort, tokens were given to the participants, and permission was granted for their participation in the research and aiding to making the study a success. Further, justice was achieved in this study by only reporting the participant's actual and specific interactions with each other as per the study objectives and converting the reported speech accurately.

Transparency. The study followed the provisions of informant to ensure that the participants were well informed that the study is aiming at finding out only the challenge, difficulty, strategy, technique and knowledge of all the teachers regarding their TPACK Skills. Furthermore, the researcher had no acquaintance as to the outlined participants since the identification. Besides, the interview notes and the transcribed notes were read to the participants for confirmation and validation. It was also discussed that the results would be given unto the participants by the researcher.

Results and Discussion

This section presents the results of data in both quantitative and qualitative phase. The first phase deals with the quantitative part in which it displays the status of instructor's technological pedagogical content knowledge (TPACK) skills. The second phase deals with the qualitative part which it was being presented thru a matrix form. The matrix shows the responses of the participants on their perceptions and insights regarding their technological pedagogical content knowledge (TPACK) skills in teaching. Also, the matrix contains the issues probed, core ideas, codes or categories, essential themes, and the supporting theoretical perspectives. Further, another matrix shows the data integration of the salient quantitative and qualitative findings.

Status of Technological Pedagogical Content Knowledge (TPACK) Skills

The results of the survey conducted are presented here. The overall mean, the items with the highest and the lowest ratings per indicator were given.

Table 2. *TPACK Skills of the Teachers*

Variables and Indicators		*Mean*	*Description*
A. Technology Knowledge			
1. Using computer mediated communication (e.g. email, chat).		4.76	Very High
2. Using online learning environments (e.g. google classroom, zoom, etc.).		4.73	Very High
3. Using mobile technologies (e.g. tablet, computer, smart phones).		4.71	Very High
4. Using web technologies (e.g. blogs, social networks).		4.70	Very High
5. Finding ways to solve my own technical problem.		4.64	Very High
	Category Mean	4.71	Very High
B. Pedagogy Knowledge			
1. Maintaining effective classroom management.		4.81	Very High
2. Managing activities for individual, partner, group, and whole class work.		4.73	Very High
3. Adapting my teaching style to different learners.		4.77	Very High
4. Using a wide range of teaching approaches in a classroom setting.		4.81	Very High
5. Selecting teaching materials appropriate to the needs of learners.		4.78	Very High
	Category Mean	4.78	Very High
C. Content Knowledge			
1. Maintaining the use of English in the classroom.		4.33	Very High
2. Comprehending English text accurately.		4.63	Very High
3. Comprehending English speech accurately.		4.54	Very High
4. Monitoring my own writing for accuracy.		4.54	Very High
5. Monitoring my own speech for accuracy.		4.46	Very High
	Category Mean	4.50	Very High
D. Technological Content Knowledge			
1. Knowing about technologies that I can use to teach speaking in English.		4.66	Very High
2. Knowing about technologies that I can use to teach reading in English.		4.60	Very High
3. Knowing about technologies that I can use to teach English vocabulary.		4.65	Very High
4. Knowing about technologies that I can use to teach pronunciation of English words.		4.64	Very High
5. Knowing about technologies that I can use to teach spelling of English words.		4.64	Very High
	Category Mean	4.64	Very High
E. Pedagogical Content Knowledge			
1. Selecting authentic English language resources to suit student's needs (e.g. news, magazines).		4.61	Very High
2. Choosing an appropriate approach to teach learners (e.g. communicative approach, direct method).		4.66	Very High

3.	Planning when and how to use the target language, including meta-language I may need in the classroom.	4.59	Very High
4.	Designing language courses around the requirements of the curriculum.	4.59	Very High
5.	Willing to experiment with different methods of language teaching.	4.59	Very High
	Category Mean	4.61	Very High
F. Technological Pedagogical Knowledge			
1.	Evaluating the appropriateness of a technology for teaching a lesson.	4.66	Very High
2.	Choosing technologies that enhance students' learning for a lesson.	4.66	Very High
3.	Adapting the use of the technologies that I am learning about to different teaching activities.	4.61	Very High
4.	Designing relevant learning experiences to promote student learning, using technology.	4.61	Very High
5.	Engaging students in solving authentic problems using digital technologies and resources.	4.62	Very High
	Category Mean	4.63	Very High
G. Technological Pedagogical Content Knowledge			
1.	Teaching lessons that appropriately combine the concepts, technologies, and teaching approaches.	4.63	Very High
2.	Selecting technologies to use in my classroom that enhance what I teach, how I teach, and what students learn.	4.67	Very High
3.	Using technology effectively to communicate relevant information to my students and peers.	4.66	Very High
4.	Using a range of technologies that enable students to become active participants.	4.66	Very High
5.	Participating in digital learning communities to explore creative applications of technology to improve student learning.	4.57	Very High
	Category Mean	4.64	Very High
	Overall Mean	4.64	Very High

TPACK Skills. Shown in Table 2 is the status of the TPACK skills of the instructors in Kapalong College of Agriculture Sciences and Technology. It obtained an overall mean score of 4.64 with a description of Very High. This means that the instructors manifested always their TPACK skills. The variable of the study which is the TPACK skills which has seven indicators namely: technology knowledge, pedagogy knowledge, content knowledge, technological content knowledge, pedagogical content knowledge, technological pedagogical knowledge, and technological pedagogical content knowledge.

Technology Knowledge. In terms of technology knowledge, the category mean is 4.71 which is describe as very high. This means that it is always manifested by the instructors. Among the items under this indicator no. 1 using computer mediated communication (e.g. email, chat) got the highest mean of 4.76 which is described as very high. This means that it is always manifested by the instructors. On the other hand the lowest item rated by the participants was the finding ways to solve my own technical problem with a mean of 4.64. This rating is described as very high. This means that it is always manifested by the instructors.

Pedagogy Knowledge. The pedagogy knowledge was rated by the participants as very high, with a category mean of 4.78. This means that it is always manifested by the instructors. Item no. 1 Maintaining effective classroom management and item no. 4 using a wide range of teaching approaches in a classroom setting garnered the highest rating with the mean of 4.81 which is described as very high. This means that it is always manifested by the instructors. Conversely, the item no. 2 managing activities for individual, partner, group, and whole class work got the lowest mean of 4.73 which is described as very high. This means that it is always manifested by the instructors.

Content Knowledge. The content knowledge got the category mean of 4.50 which is described as very high. This means that it is always manifested by the instructors. The item no. 2 comprehending English text accurately got the highest mean of 4.63 which is described as very high. This means that it is always manifested by the instructors. Meanwhile, item no. 1 maintaining the use of English in the classroom is the lowest rated item which has a very high category mean of 4.33. This means that it is always manifested by the instructors.

Technological Content Knowledge. In terms of technological content knowledge, the category mean is 4.64 which is describe as very high. This means that it is always manifested by the instructors. Among the items under this indicator no. 1 knowing about technologies that I can use to teach speaking in English got the highest mean of 4.66 which is described as very high. This means that it is always manifested by the instructors. On the other hand, the lowest item rated by the participants was the item no. 4 knowing about technologies that I can use to teach pronunciation of English words and item no. 5 knowing about technologies that I can use to teach spelling of English words with a mean of 4.64. This rating is described as very high. This means that it is always manifested by the instructors.

Pedagogical Content Knowledge. The pedagogical content knowledge was rated by the participants as very high, with a category mean of 4.61. This means that it is always manifested by the instructors. Item no. 2 choosing an appropriate approach to teach learners (e.g. communicative approach, direct method garnered the highest rating with the mean of 4.66 which is described as very high. This means that it is always manifested by the instructors. Conversely, the item no. 3 planning when and how to use the target language, including meta-language I may need in the classroom, item no. 4 designing language courses around the requirements of the curriculum, and item no. 5 willing to experiment with different methods of language teaching got the lowest mean of 4.59 which is described as very high. This means that it is always manifested by the instructors.

Technological Pedagogical Knowledge. In terms of technological pedagogical knowledge, the category mean is 4.63 which is described as very high. This mean that it is always manifested by the instructor. The highest rated item is the no. 1 evaluating the appropriateness of a technology for teaching a lesson and choosing technologies that enhance students' learning for a lesson have a category mean of 4.66 and is described as very high. This means that it is always manifested by the instructors. While item no. 4 designing relevant learning experiences to promote student learning, using technology got the lowest category mean of 4.61 and is described as very high. This means that it is always manifested by the students.

Technological Pedagogical Content Knowledge. The technological pedagogical content knowledge got the category mean of 4.64 which is described as very high. This means that it is always manifested by the instructors. The item no. 2 selecting technologies to use in my classroom that enhance what I teach, how I teach, and what students learn got the highest mean of 4.67. This means that it is always manifested by the instructors. Conversely, the item no. 5 participating in digital learning communities to explore creative applications of technology to improve student learning is the lowest rated item which has a very high category mean of 4.57. This means that it is always manifested by the instructors.

The Perspectives of Teachers with regards to Technological Pedagogical Content Knowledge (TPACK) Skills

There are four essential themes which are created based from the in-depth interviews and focus group discussion of the participants on the first research question. Before the presentation of the results from the interviews and discussions, profiles of the participants for the qualitative data collection are presented in Table 3.1. The table represents the participants profile for the qualitative selected purposively following the inclusion criteria: he or she must be a full time or part time instructor in KCAST. Based on the table, the profiles are divided into participants age and sex.

Additionally, Table 3.1 discusses the technological pedagogical content knowledge skills of the instructors. The key themes derived from the participants responses to research question number one are condensed and presented in the table.

Table 3.1. *Perspectives of Teachers with regards to Technological Pedagogical Content Knowledge (TPACK) Skills*

Probed Issues	*Core Ideas*	*Code/ Category*	*Essential Theme*	*Theoretical Perspectives*
Effect of Technological Pedagogical Content Knowledge skills on one's teaching skills	Helping to improve the delivery instruction to students. Enhancing the delivery of contents conveyed to students. Making it easy to deliver my lesson with technology like television and PowerPoint Presentation. Deeming integration of technology to pedagogy and content in teaching as way better to deliver proper discussion. Helping to enhance my teaching delivery that will meet the diverse needs of students.	Enhanced Instructional Delivery	Instructional Effectiveness through Technology Integration	Constructivism
	Making the learning materials easier to be understood by the students. Allowing smooth integration of technology with the materials and the delivery in teaching. Having a big impact on how to teach students for having discovered and created a lot of strategies for my students.	Clarity in Instruction		
Ways of assessing one's TPACK skills in improving student learning outcomes	Assessing TPACK skills through regular monitoring to determine if these skills are useful for students or not. Regularly evaluating and assessing students' engagement, performances and feedback.	Regular Monitoring and Evaluation	Formative Assessment of Learning	Educational Assessment Theory
	Assessing students through games and group activities. Assessing through quizzes to ensure achievement of students learning outcomes. Using apps like canva, ppt slides and different activity games that are accessible for students.	Individual and Group-based Assessment		
	Testing students to see if they've learned something after the discussion considering the relevance and engagement within the session. Fostering real life or attainable learning outcomes.	Determining achievement of Learning Outcomes		
Impact of TPACK skills on the student's engagement in the learning process	Being able to use interactive activities found on internet like games and relevant graphics and utilizing it in the class. Utilizing activities or contents from the internet that can be used to a specific topic. Utilizing interactive learning experiences and	Interactive activities from Online Resources	Interactive and Engaging Technologically Aided Activities	Experiential Learning Theory

	knowledge from the internet			
	Having activities and engagement of technology to students that inspires them learn. Encouraging students to answer every question that was given to build engagement and confidence. Enabling students to participate in every learning opportunity that they will encounter from every discussion Enjoying the different activities, games, prizes will make students more motivated to participate.	Engagement and Participation		
	Making students more energize based on what was observed through the activities being given Sensing that students easily understand the discussion Using multimedia presentations to further explain complex context and make it more interactive learning with the use of different activities.	Effectiveness and Understanding		
Opportunities pursued to enhance TPACK skills	Attending seminars and workshops that offered in school or organizations Attending seminar opportunities that are being offered. Joining seminars like digital marketing, work improvement skills seminar Participating in seminars and orientations inside and outside the campus. Attending webinars, seminars and conferences." Attending webinars if there will be opportunity to join and being invited Attending seminars and exploring ideas from online resources and available materials that will cater needs. Pursuing to attend seminars and making partners with colleagues that share ideas	Seminars and Workshops	Continuous Professional Development and Lifelong Learning	Andragogy Theory
	Igniting curiosity on where to search ideas from the internet and asking help from experts Watching videos from the internet. Having seminars being offered for teachers to help enhance TPACK skills Attending seminars that are somehow related to improve TPACK skills. Asking others if there are things that one does not know how to use I also collaborate with my co-instructors and friends.	Seeking Knowledge and Collaboration		

Instructional Effectiveness through Technology Integration. In the context of TPACK skills of teachers this refers to the impact of incorporating technology into teaching practices on educational outcomes, when teachers develop strong TPACK skills, they can design and implement instructional strategies that leverage technology to enhance student learning, improve engagement, and facilitate deeper understanding of subject matter.

Enhanced Instructional Delivery is the first code of the first probed issue. Teachers expressed common responses on their TPACK skills in academic context. Most of them stated that TPACK helped them enhance instructional delivery of contents to their students.

Similarly, Participant 1 agreed that it enhanced instructional delivery in teaching, emphasizing the help in improving delivery of instruction to the students. This eventually leads to better student learning outcomes and a more meaningful educational experience for both the teacher and the students. This highlights the importance of using TPACK skills in teaching and learning process. She stated that:

"Para sa akoa and TPACK skills or ang TPACK affect my teaching skills sa pamaagi nga natabangan ko sapag improve the way nako ideliver akong instruction sa students. It also serves as an aid sa akong teaching process since naga explore ko on how to use different technologies na available for better learning sakong mga students." (IDI-01)

(TPACK affects my teaching skills in a way that it helps me improve my delivery of instruction to my students. It also serves as an aid in my teaching process since I'm exploring how to use different technologies that are available for better learning of my students.)

Moreover, the TPACK skill shows great significance to teachers when wanting to have a great delivery of instructions of the contents and lessons. By being able to search for information that is helpful to be understood by the students, teachers can be able to assist it by making up for what the students did not understand during the class discussion. It is clear that TPACK can be a great enhancement for teaching. As what Participant 2 said that:

"TPACK skills really affect my teaching skills no because dire naenhance og maenhance pa nako ang delivery sa contents na akong itudlo sa mga students. Imagine it is a tool na makatabang sa atoa og prepare and become efficient since nagahatag syag knowledge na atong magamit every day. Akong paper works will not be burden na kaayo kay ma access and ma assess naman nako ang students with the use of technology. So, mas mapadali og mas smooth ang teaching pag naay knowledge when it comes to technology." (IDI-02)

(TPACK skills affect my teaching skills because here it enhances the delivery of contents that I will teach to my students. It is a tool that helps us to prepare and become efficient since it provides knowledge. My paperwork will not be a burden because I can access students with the use of technology. It will be easy and smooth to teach if you have knowledge when it comes to technology.)

In addition, TPACK enable teachers to effectively use digital tools in their teaching. This facilitates the use of devices like televisions to present multimedia content such as PowerPoint presentations and apps to create more engaging and interactive lessons. By leveraging TPACK, teachers can move beyond traditional instructional materials and methods, making lessons more accessible and dynamic for students. Participant 4 stated that:

"With the help of TPACK mas easy na mag deliver sa lessons kay pwede naman ka mag use direct sa tv to present your PowerPoint. Easy access na siya, diritso kay no need for IM's and presentation. Useful sad siya kay maka use kag different apps para creative imong pag present." (IDI-04)

(With the help of TPACK, it is easy to deliver a lesson because you can directly use television to present your PowerPoint and easy access without the use of traditional IM's. It is also useful because you can use different apps to more creative presentation.)

Furthermore, integrating these topics improves instructors' educational approaches. Teachers that use technology successfully may enhance the way they present material and engage students, making the learning process more efficient and meaningful. This method guarantees that technology is used in a relevant and pedagogically sound manner, which benefits both instructors and students. As what Participant 6 said that:

"TPACK really helps me a lot kay diba TPACK means it is a knowledge of a person regarding sa iyang knowledge with the usage of technology, pedagogy and the context sa teaching process. So, diraa I can really tell na integrating these three in my teaching is a much better way para mas ma deliver nako akong discussions properly diba. So, as the advancement sa technology and very observable man pud that na useful sya for teachers and ginagamit sya in a proper way. Mas easy nalang nako maconvey ang information sakong students." (FGD-01)

(TPACK means it is a knowledge of a person with regards to technology, pedagogy, and the content in the teaching process. I can really tell that integrating these three in my teaching is much better way to deliver my discussions properly. The advancement of technology and it is observable that it is useful for teachers in a proper way. It's easy to convey an information to my students.)

Lastly, using TPACK, instructors may give relevant and interesting information to students while also meeting their different learning requirements. This technique enables teachers to develop successful strategies adapted to their pupils' specific needs, hence boosting overall teaching effectiveness. Participant 9 stated that:

"TPACK skills helps me to enhance my teaching delivery because aside sa makaprovide ka og relevant and interesting contents sa imong students, mameet pud nimo ang diverse learning needs sa mga studyante og diraa makacreate kag strategies na haom sa ilaha." (FGD-04)

(TPACK helps me to enhance my teaching delivery because aside from providing relevant and interesting contents to your students, you will also meet the diverse learning needs of the learners and with that you can create strategies that are suitable for them.)

Clarity in Instruction is the second of the first probed issue. Teachers expressed common responses on their TPACK skills in academic context. The importance of clear and understandable teaching, ensuring that students grasp the material being taught.

Similarly, Participant 3 agreed that TPACK means effectively integrating technology to enhance teaching. Using PowerPoint presentations and online videos can help clarify complex ideas and improve student comprehension. By manipulating technological tools, teachers can create more engaging and understandable learning experiences.

"TPACK skills affect my teaching skills, ma ano jud nako na effective jud sya because the way sa akoang pag teach sa mga students if naa kay mga learning materials specially sa powerpoint mas mapadali mapasabot sa akoang mga studyante, sometimes dili nila ma gets ang isa ka idea if wala kay example na mapakita, so through the help sa technology karon specially sa mga videos pud didtoa mga learning outcomes na pwede mahatag nako sa ilaha mas masabtan pajud nila og maayo." (IDI-03)

(TPACK skills affect my teaching skills because it is effective for some ways on how I teach my students like the learning materials specially the PowerPoint, it will be easy to be understood by my students. There are times that my students can't understand some of the ideas, through the help of technology specially videos from the internet and some learning outcomes that I can give for better understanding.)

Additionally, this statement summarizes a teacher's approach to using technology to improve teaching effectiveness. It underlines the significance of not depending exclusively on human knowledge, but also of embracing technical tools that provide easy access to varied

sources. This strategy tries to accommodate the knowledge of today's youngsters while making instruction more efficient and less demanding. As what Participant 5 stated that:

"As a teacher we would not rely only on ourselves especially in teaching with the youth nowadays considering their situation nga mga hawd na kaau. With the help of the technology, it allows me to improve my teaching kay maka search ko, dali ra makita ang mga reference ug labaw sa tanan mas mapadali akong trabaho, dle siya totally ma dali jud pero with the help of it naay makatabang sa ako." (IDI-05)

(As a teacher we would not just rely on ourselves especially in teaching with the youth nowadays, considering their situation that they are more experts. With the help of technology, it allows me to improve my teaching because I can browse, and it is easy for me to look for references and most specially it will make my work less hard.)

Moreover, integrating TPACK skills into teaching techniques, utilizing findings to provide interesting and effective learning experiences for students. Teachers apply these talents to create successful teaching techniques that, while not perfect, provide meaningful learning outcomes and student engagement. Participant 10 stated that:

"Ang TPACK skills sa akoa have a big impact sa kung unsa pa akong kaya matudlo sakong students as a teacher because daghan kog discoveries na matun'an og magamit sa akong strategies na macreate pud inig deliver nako sa students. Dili man ingon nga perfect sya pero engaging og dako jud og impact sa akong mga students." (FGD-05)

(TPACK skills has a big impact on what will be the things I will teach to my students as a teacher because there are a lot of discoveries that I will learn and use it with the strategies that I will create upon delivering it to my students. It will not be perfect, but at least it is engaging and has a big impact to the learnings of my students.)

Formative Assessment of Learning. In the context of TPACK skills of teachers involves evaluating how effectively educators integrate technology into their teaching practices. This type of assessment aims to identify areas where teachers need support, enhance their instructional strategies, and ultimately improve student learning outcomes through effective use of technology.

Regular Monitoring and Evaluation is the first code of the second probed issue. Teachers expressed common responses on their TPACK skills in academic context. In the context of TPACK, instructors must systematically analyze the integration of technology, pedagogy, and content knowledge. This enables continuous development and alignment with students' learning requirements and goals.

Similarly, assessing the effectiveness of teaching tactics, such as TPACK skills, by examining its influence on student learning and engagement. This guarantees that educators like yourself may adapt and improve their instructional methods in real time depending on student input and outcomes, with the goal of improving overall learning experiences and results. Participant 1 stated that:

"I assess my TPACK skills through monitoring, if kani ba akong naprovide nga skills karon kay useful ba sya sakong mga students or dili." (IDI-01)

(I assess my TPACK skills through monitoring if this skill is useful for my students or not.)

In addition, improving student learning results teachers may monitor the efficacy of their teaching tactics and adapt them as needed by continuously analyzing students' involvement, performance, and feedback through formative and summative evaluations. This continual process ensures that instructional techniques are appropriate for student learning requirements, enabling continuous development in both teaching and learning experiences. As what Participant 7 said:

"Ang akong ways to assess my TPACK skills no sapag improve sa learning outcomes sa student's kay by regularly evaluating and assessing my students, counted na diraa ang engagement, performances and feedback. So, through formative and summative assessment, I can measure kung naa bay nasabtan akong learners or wala." (FGD-02)

(My ways to assess my TPACK skill to improve my learning outcomes of the students by regularly evaluating and assessing my students, also the engagement, performances and feedback. Through formative and summative assessment, I can measure if they learn something or not.)

Individual and Group-based Assessment is the second code of the second probed issue. Teachers expressed common responses on their TPACK skills in academic context. In the context of TPACK, teachers may establish a supportive learning environment that promotes student progress and achievement by employing a range of assessment techniques while ensuring that assessments are fair and effective.

Similarly, Participant 2 emphasizes the importance of assessing students' strengths and weaknesses in critical thinking skills. It advocates for fostering real-life or attainable learning outcomes, aiming to assess practical skills applicable in real-life situations rather than solely focusing on academic learning objectives.

"It would be the strength and weaknesses of my students tapos their critical thinking skills. Also, as a teacher we foster a real life or attainable learning outcomes no aron maassess ang students based on the learning objectives which it may help not their self but the practical skills that could apply in their real-life situation." (IDI-02)

(It would be the strength and weaknesses of my students after their critical thinking skills. Also, as a teacher we foster a real life or

attainable learning outcomes no to assess the students based on the learning objectives which it may help not their self but the practical skills that could apply in their real-life situation.)

In addition, it focuses on analyzing students critical thinking talents and shortcomings. As a teacher, their primary goal is to promote real-life or achievable learning outcomes that are matched with learning objectives. This technique strives to evaluate practical talents that may be applied in real-world contexts, benefiting students beyond self-assessment. Participant 2 stated that:

"It would be kuan strength and weaknesses of my students tapos their critical thinking skills. Also, as a teacher we foster a real life or attainable learning outcomes aron maassess ang students based on the learning objectives which it may help not their self but the practical skills that could apply in their real-life situation." (IDI-02)

(It would be the strength and weaknesses of my students after their critical thinking skills. Also, as a teacher we foster a real life or attainable learning outcomes to assess the students based on the learning objectives which it may help not their self but the practical skills that could apply in their real-life situation.)

Moreover, it entails assessing student learning using a variety of techniques targeted to both individual development and group activities. It promotes individual student involvement, whereas interactive games encourage group participation. Effective assessment relies on creating context-rich information that improves student comprehension and promotes meaningful learning outcomes during conversations. As what Participant 4 said that:

"In a way nga useful siya for both of us teachers my students. Like for example mag use kog mga apps like canva, PowerPoint slides and also different activity games nga accessible sa akong student's tapos ang pinaka important jud kay ang pag sort nimo sa context na iprovide sa imong student's para makaunderstand sila more through our discussion." (IDI-04)

(In a way that it is useful for both teachers and students. I will use apps like canva, PowerPoint slides and also different activity games that are accessible to my student's then the most important thing is that you sort the context that will be provided to your student's so that they can understand more through our discussion.)

Determining Achievement of Learning Outcomes is the third code of the second probed issue. Teachers expressed common responses on their TPACK skills in academic context. This includes assessing whether learners have attained the precise goals and objectives established for their study. This includes evaluating student performance against set criteria, determining the amount to which learning goals have been fulfilled, and gathering proof of accomplishment using a variety of assessment methods. It seeks to give insights on students' understanding, skill development, and overall progress toward the targeted educational goals.

Similarly, Participant 6 highlights the importance of assessing student learning post-discussion, particularly through the integration of technology. Factors such as discussion relevance and engagement are critical in gauging student understanding and improvement. This approach emphasizes the need for effective assessment strategies to measure the attainment of learning objectives in an increasingly technology-integrated educational environment."

"In a way na I can see kung akong studyante ba naay matun'an after sa discussion because upon integrating technology diba sa teaching is we must consider factors that could affect sa atong studyante, say for example kanang ang relevance sa discussion, ikaduha if engaging ba ang kani na session. So, diraa I can assess if the students really understand and makita nako if naga improve ba." (FGD-01)

(In a way that I can see if my student can learn something after the discussion because upon integrating technology, not in teaching, we must consider factors that could affect our student, say for example the relevance of the discussion, secondly if it is engaging this session. I can assess if the students really understand, and I can see if they are improving.)

In addition, it illustrates how TPACK skills improves student learning results. They use frequent evaluation and assessment methods like as formative and summative assessments to measure student comprehension, engagement, performance, and feedback. This method promotes continual improvement and informs instructional tactics for efficiently meeting learning objectives. Participant 7 said that:

"Ang akong ways to assess my TPACK skills no sapag improve sa learning outcomes sa student's kay by regularly evaluating and assessing my students, counted na diraa ang engagement, performances and feedback. So, through formative and summative assessment, I can measure kung naa bay nasabtan akong learners or wala." (FGD-02)

(My ways isassess my TPACK skills and improve student's learning outcomes because by regularly evaluating and assessing my students, engagement, performances and feedback are counted. Through formative and summative assessment, I can measure if my learners understand something or not.)

Interactive and Engaging Technological Aided Activities. In the context of TPACK skills of teachers, digital age is increasingly incorporating technology into their teaching methods to enhance student engagement and learning outcomes. These activities not only make learning more dynamic and accessible but also help teachers develop and refine their TPACK skills, leading to more effective and innovative teaching practices.

Interactive Activities from Online Resources is the first code of the third probed issue. Teachers expressed common responses on their

TPACK skills in academic context. These activities use online resources including interactive simulations, virtual laboratories, collaborative tools, and educational games to improve student participation, material comprehension, and idea application in a digital context. Teachers that use TPACK efficiently choose, integrate, and manage online resources to promote active learning and student participation in their classes.

Similarly, TPACK skills can improve student learning results, particularly through interactive activities obtained from online resources. They assess student comprehension and engagement by evaluating how well students learn topics and appreciate the interactive aspects integrated into their instruction. Participant 1 said that:

"I could say that my TPACK skills have positively affect my students if naa ba silay natun'an, or nagain throughout the discussion sa lesson. Naga use ko og interactive activities during sakong klase since I discover and nakakuha kog ideas from internet anang mga games and graphics na pwede magamit, so I could say that they really understand the lesson and makita pud nako na naga enjoy sila." (IDI-01)

(TPACK skills have positively affected my students if they learned something, or again throughout the discussion of the lesson. I use interactive activities during my class since I discovered and got ideas from the internet about those games and graphics that can be used, so I could say that they really understand the lesson and I can also see that they are enjoying it.)

In addition, it emphasizes the use of digital activities and material from internet sources in their everyday lectures. They assess involvement by including visuals such as photos and graphics to help students visualize the course. The participant notices increased student interest and engagement, which they attribute to the interactive tools and resources they use during teaching sessions. As what Participant 8 said that:

"For me, as what I always integrate every discussion kay ang pag utilize sa mga digital activities or contents from the internet na pwede gamiton sa specific topic na akong idiscuss ana na day. I can measure the engagement between students and sa akoa mismo as a teacher specially naga butang kog pictures or graphics na mavisualize nila na nga lesson. So, sa interactive tools na akong ma use, makita nako na engaging sya sa student's kay maexcite man sila maminaw sa akoa." (FGD-03)

(As what I always integrate every discussion is the utilization of digital activities or contents from the internet that can be used in the specific topic that I will discuss that day. I can measure the engagement between students and myself as a teacher especially I put pictures or graphics so that they can visualize the lesson. With the interactive tools that I can use, I can see that he is engaging with the students because they are excited to listen to me.)

Moreover, the positive influence of their TPACK skills on student engagement with interactive learning experiences derived from internet resources and shared ideas among colleagues. They stress the necessity of meeting student learning requirements and making modifications based on observed engagement levels, resulting in a more engaging learning environment in future sessions. Participant 7 said that:

"Maka ingon ko nga akong TPACK skills have positively impacted the student's engagement kay tungod sa mga interactive learning experiences and knowledge na akong nakita through internet and sa mga ideas na akong magather from my co-instructors. So, diraa macater nako ang learning needs sa students and maapply nako sya sa next na discussion or session tapos makita nako unsa pay kailangan iimprove para mas maging engaging sa students." (FGD-02)

(TPACK skills have positively impacted the student's engagement because of the interactive learning experiences and knowledge that I have seen through the internet and the ideas that I have gathered from my co-instructors. I will address the learning needs of the students, and I can apply them in the next discussion or session after I see what needs to be improved to be more engaging with the students.)

Engagement and Participation is the second code of the third probed issue. Teachers expressed common responses on their TPACK skills in academic context. Teachers' capacity to successfully employ technology to engage pupils in active learning activities. It focuses on developing interactive and participatory learning experiences in which technology improves student engagement with the curriculum and enables collaborative learning possibilities. Teachers with good TPACK abilities in Engagement and Participation use technology to create a dynamic classroom environment that fosters active student participation and a deeper comprehension of the subject.

Similarly, integrating technology into classroom activities to increase student participation in the learning process. They think that using technology such as PowerPoint presentations, engaging images, and instructional games captures kids' attention while invigorating both their bodies and minds. This technique tries to create a more dynamic and engaging learning environment by encouraging students to actively engage in courses. Participant 2 said that:

"For me as a teacher is to engage technology sa mga activities and through pag engage ug technology sa students it really has a big impact sa student engagement in the learning process because it inspires and helps them to energize dili lang ang body itself pati nasad ang mind. Also, if ever naay makita sila sa tv like mga ppt any presentations na catchy and mga games mas maamaze sila ug mas ganahan sila maminaw." (IDI-02)

(Is to engage technology in activities and through engaging technology in students it really has a big impact on student engagement in

the learning process because it inspires and helps them to energize not only the body itself but also the mind. Also, if they ever see something on TV like ppts, catchy presentations and games, they will be more amazed, and they would like to listen more.)

In addition, the technique for encouraging student engagement is using PowerPoint presentations. They provide opportunity for individual students to respond to questions, emphasizing the importance of all viewpoints and constructive correction of errors. The participant simplifies ideas and gives examples to guarantee comprehension while actively engaging with students throughout the learning process. They feel that this strategy promotes good connection and participation among students throughout class. Participant 3 said that:

"Akoa jung gina encourage ang mga students na mag answer jud sila, through my powerpoint presentation, mabasahan nila diraa automatic, ginatagaan jud nako silage chance individually nga maka answer jud pud sila, kay usahay man gud ang mga students maulaw or mahadlok, para maengage, gina ingnan nako sila ilang opinion magmatter jud diraa walay mali na answer pero icorrect nato because didtoa man gud usahay makaingon jud ko na positive jud sya, sa akoang pagprepare sa akoang powerpoint is masabtan jud sya, usahay man gud ang student dili jud na sila kasabot specially paglaglom na ang mga words nimo, akoang ginapa simplify aside sa ginapa simplify maghatag kog mga example so base sa example, mangutana ko sa students kung nasabtan nila or wala. Para sa akoa positive sya nga impact kay nagka interact me sa students, naa juy engagement na gina ingon." (IDI-03)

(I encourage the students to answer, through my PowerPoint presentation, they read it automatically, I give them a chance individually to be able to answer, because sometimes the students are shy or afraid, so to engage, I tell them their opinion will matter, there is no wrong answer, but we will correct it because sometimes I can say that it is positive, when I prepare my PowerPoint, they can understand, but sometimes the students really don't understand, especially when your words have been digested, aside from simplifying, I'll give examples, based on the example, I'll ask the students if they understand or not. So, for me, it has a positive impact because I interact with the students, there is already an engagement.)

Moreover, the TPACK skills have a favorable influence on student engagement by instilling confidence and involvement in learning opportunities. They stress the use of visual materials and interactive activities enabled by technology to boost student confidence and encourage active participation in sessions. This technique seeks to increase students' comprehension and application of course content by making learning experiences more interactive and accessible. As what Participant 9 said that:

"One thing that my TPACK skills have positively improved students' engagement kay bay enabling them na mag engage sa tanan learning opportunities na ilang maencounter throughout sa discussion because kung mafoster na sya nga ability or confidence sa bata it will result to better understanding and application sa ilang mga natun'an ana na lesson. By simply providing them with visualized materials using technology og ang pag incorporate sa games, it will give the students more confidence na magengage." (FGD-04)

(One thing that my TPACK skills have positively improved students' engagement is by enabling them to engage in all the learning opportunities that they will encounter throughout the discussion because if the child's ability or confidence can be fostered it will result in better understanding and application of their those who have learned that lesson. By simply providing them with visualized materials using technology and incorporating games, it will give the students more confidence to engage.)

Lastly, TPACK skills improve student engagement, especially when dealing with difficult themes. They use multimedia presentations to effectively explain complicated ideas and interactive activities to keep students engaged throughout the learning session. This technique seeks to reduce boredom and encourage student engagement by making the learning environment more dynamic and engaging. Participant 10 said that:

"In certain cases, dili man jud malikayan na naay lisud na mga topic, so my TPACK skills improved students' participation or engagement in the learning process for example we use multimedia presentations para mas ma explain futher sa ilaha ang mga complex context, and himuon syang interactive learning with the use of different games para dili maging boring ang whole duration, so diraa it will increase students' engagement." (FGD-05)

(In certain cases, it is unavoidable that there are difficult topics, so my TPACK skills improved students' participation or engagement in the learning process for example we use multimedia presentations so that they can explain complex contexts to them better and make them interactive learning with the use of different games so that the whole duration will not be boring, so it will increase students' engagement.)

Effectiveness and Understanding is the third code of the third probed issue. Teachers expressed common responses on their TPACK skills in academic context. In the context of TPACK, it entails not only using technology tools, but also selecting appropriate technologies that correspond to the content being taught, understanding how to teach using these technologies, and evaluating the impact of technology on student learning. Teachers that have high effectiveness and understanding in TPACK are skilled at using technology to foster greater comprehension and engagement among their pupils.

Similarly, the use of TPACK enhances the effectiveness of their teaching. They observe increased student engagement and participation during discussions, attributing this to the engaging nature of their activities and the ability to capture students' attention effectively. This approach ensures that students are more energized and attentive, leading to a deeper understanding of the lesson content. Participant 4 said that:

"With the help of TPACK kay mas ma energize akong student's base sakong naobserve kay mag participate sila sa discussion labi nag engaging kaayo akong activities and also pag discuss like makuha gud nako ilang attention na maminaw jud sakong ginadiscuss." (IDI-04)

(With the help of TPACK, my student's will be more energized based on what I observed because they will participate in the discussion and my activities are more engaging and also when I discuss like I can really get their attention to listen to what I am discussing.)

In addition, it reflects on how their teaching style improves student effectiveness and understanding. They highlight that including engaging activities, games, and rewards into classes improves student enjoyment and comprehension of the material. This method not only boosts student enthusiasm, but it also guarantees that learning objectives are well articulated and understood during conversations. Participant 6 said that:

"I guess in the sense na ang mga studyante mas easier nalang sa ilaha na masabtan ang discussion. Kay bukod sa nag enjoy sila sa different activities na akong ginahatag sa ilaha naa pud diraa ang pag integrate og mga games and prizes kay mas mamotivate man sila muparticipate if engaging and interesting ang topics." (FGD-01)

(I guess in the sense that it is easier for the students to understand the discussion. Because apart from the fact that they enjoy the different activities that I give them, there is also the integration of games and prizes because they will be more motivated to participate if the topics are engaging and interesting.)

Furthermore, TPACK skills improve the efficacy of teaching difficult topics. They use multimedia presentations to effectively explain complicated subjects and interactive activities to keep students engaged throughout the session. This technique seeks to reduce boredom and promote student engagement by making the learning experience interactive and dynamic. Participant 10 stated that:

"In certain cases, dili man jud malikayan na naay lisud na mga topic, so my TPACK skills improved students' participation or engagement in the learning process for example we use multimedia presentations para mas ma explain futher sa ilaha ang mga complex context, and himuon syang interactive learning with the use of different games para dili maging boring ang whole duration, so diraa it will increase students' engagement." (FGD-05)

(In certain cases, it is unavoidable that there are difficult topics, so my TPACK skills improved students' participation or engagement in the learning process for example we use multimedia presentations so that they can explain complex contexts to them better and make them interactive learning with the use of different games so that the whole duration will not be boring, so it will increase students' engagement.)

Continuous Professional Development and Lifelong Learning. In the context of TPACK skills of teachers, it helps teachers integrate technology effectively with pedagogy and subject content. Lifelong learning ensures that teachers continually enhance their technological proficiency, pedagogical strategies, and content knowledge, enabling them to provide high-quality, relevant education that meets the evolving needs of students in a digital age.

Seminars and Workshops is the first code of the fourth probed issue. Teachers expressed common responses on their TPACK skills in academic context. TPACK skills are intended to improve instructors' ability to successfully incorporate technology into their teaching methods. In hands-on activities, collaborative learning experiences, and reflective practices to deepen their grasp of the TPACK framework, enabling them to develop and implement creative, technology-rich lessons that improve student learning outcomes.

Similarly, it highlights the importance of attending seminars and workshops for improving their TPACK abilities. They explain how professional development options given by schools or other organizations help them integrate technology effectively into their teaching methods. Participant 1 stated that:

"One of the professional developments that I've pursued nga nakatabang jud sa pag enhance sakong TPACK skills kay kanang attending seminars and workshops na ginaoffer sa school or sa other organizations." (IDI-01)

(One of the professional developments that I've pursued that has helped to enhance my TPACK skills is attending seminars and workshops that are offered by schools or other organizations.)

Moreover, it outlines the professional progress in TPACK abilities, highlighting the need of attending seminars and workshops as they become available. They also discuss how these chances piqued their interest in conducting more research online, allowing them to expand their expertise and aid others in their learning path. As what Participant 2 stated that:

"Ang ginapursue nako for professional development sakong TPACK skills if naay mga instances like seminar opportunities na gina offer naga attend ko, but most likely ang pinaka dakog help jud nga nakapa enhance kay akong curiosity lang to search up things on internet tapos pahelp sa uban na kabalo." (IDI-02)

(What I am pursuing for professional development in my TPACK skills is that if there are instances like seminar opportunities that are offered, I will attend, but most likely the biggest help is that it has enhanced my curiosity to search up things on the internet and then help others who know.)

Additionally, attending seminars and workshops to further one's professional growth. They highlight attending digital marketing and job enhancement seminars, which have considerably improved their TPACK abilities. These courses give essential insights into efficiently managing students and developing thorough TPACK techniques, so improving their teaching practice. Participant 3 said that:

"Yes, actually naa koy mga seminars na gina apilan specially sa amoa BSBA, parehas anang sa mga digital marketing, so magamit jud namo na sya. Last month nag attend pud ko work improvement skills seminar, so didtoa mas nagamit pud nako sya sakoang professional development kay gi ingon didtoa kung unsaon nimo paghandle imohang mga studeyante og tarong specially sa pag prepare sa imong TPACK dire." (IDI-03)

(Yes, I attended seminars specially in BSBA department, the same as digital marketing, so we can use it. Last month I also attended a work improvement skills seminar, I used it more in my professional development because it was said there how to handle your students properly especially in preparing your TPACK.)

In addition, the importance of on-campus and off-campus seminars and workshops in improving their TPACK abilities. They actively seek out chances to improve their teaching talents, highlighting the combined benefits of personal development and the potential to share new information and skills with their pupils. Participant 6 said that:

"As a teacher, aside from the seminars og orientations sulod sa campus, daghan sad opportunities outside na makatabang magdevelop or mag improve sa akong TPACK skills and gina atenan nako sya because dili lang ako ang matabangan ani, akoa pud syang mashare sakong students." (FGD-01)

(As a teacher, aside from the seminars and orientations inside the campus, there are many opportunities outside that can help me develop or improve my TPACK skills and I take care of them because I can not only help them, but I can also share them with my students.)

Furthermore, it actively participates in professional development to improve their TPACK abilities through webinars, seminars, and conferences. They cherish the possibilities to improve their teaching techniques and effectively use instructional resources. In addition, they seek assistance and ask questions to overcome obstacles and broaden their expertise. Participant 7

"To enhance my TPACK skills, I pursued professional development by attending webinars, seminars and conferences kay kani na mga opportunities nakatabang sya sakong pagtudlo og sa utilization sa mga materials na gamiton. Ako pud ang tao nga hilig mangutana, so naga ask ko sa uban if naa koy mga nalisudan or mga wala nahibal'an." (FGD-02)

(To enhance my TPACK skills, I pursued professional development by attending webinars, seminars and conferences because these opportunities helped me teach and the utilization of the materials to be used. I am also the person who likes to ask questions, so I ask others if I have any difficulties or things I don't know.)

Additionally, regularly attending webinars, seizing chances as they emerge rather than actively pursuing them. They also work with colleagues and friends to improve their TPACK abilities, using professional relationships for extra support and development. Participant 8 stated that:

"Naga attend ko mostly mga webinars kanang magka opportunity ko nga magjoin or iinvite ko, dili sya pursued but taking kung unsay ginaoffer lang, tapos naga collaborate ko sakong co-instructors or sa akong mga friends kanang magpatabang." (FGD-03)

(I attend mostly webinars where I have an opportunity to join or invite me, I don't pursue them but just take what is offered, then I collaborate with my co-instructors or my friends who help me.)

Moreover, TPACK skills are taught through seminars and online resources. They actively seek professional development options that are tailored to their unique requirements, combining formal seminars with self-directed research of internet resources to continually enhance their teaching talents. As what Participant 9 said that:

"In order to improve or ma enhance akong TPACK skills naga attend ko seminars og naga explore ko sa mga online resources na available na macater akong needs for the development sakong skills." (FGD-04)

(In order to improve or enhance my TPACK skills, I attend seminars and explore online resources that are available to meet my needs for the development of my skills.)

Lastly, it highlights the need of professional development, notably through seminars, in order to improve their TPACK abilities. They appreciate these sessions for finding areas for improvement and remaining current on best practices. They also emphasize the significance of working with colleagues to share teaching ideas and improve overall classroom performance. Participant 10 stated that:

"I pursued a variety of professional development to enhance my TPACK skills ilabina gyud mga seminars na ginapahitabo kay importante kaayo sya para makabalo ka unsay mga angay nga iimprove or usabon sa imong skills, og isa napud diraa dili gyud mawala ang making partner or makig coordinate sa colleagues na magshare og mga practices." (FGD-05)

(I pursued a variety of professional development to enhance my TPACK skills, especially seminars that are held because they are very important for you to know what should be improved or changed in your skills, and one more thing is that you will never lose the making

partner or coordinate with colleagues to share practices.)

Seeking Knowledge and Collaboration is the second code of the fourth probed issue. Teachers expressed common responses on their TPACK skills in academic context. TPACK skills for teachers stress the capacity to actively seek new information, skills, and resources related to technology integration in the classroom. It entails looking for chances to work with peers, experts, and resources to improve one's understanding and application of technology, pedagogy, and content knowledge (TPACK).

Teachers involved in this element of TPACK are always striving to develop their professional network, share thoughts, and keep current on advancements in educational technology and successful teaching techniques.

Similarly, professional growth in TPACK abilities, with emphasis on proactive participation in seminars and independent internet research. They emphasize how their curiosity motivates them to seek and share information with others, promoting cooperation and continual learning in educational processes. Participant 2

"Ang ginapursue nako for professional development sakong TPACK skills if naay mga instances like seminar opportunities na gina offer naga attend ko, but most likely ang pinaka dakog help jud nga nakapa enhance kay akong curiosity lang to search up things on internet tapos pahelp sa uban na kabalo." (IDI-02)

(What I am pursuing for professional development in my TPACK skills is that if there are instances like seminar opportunities that are offered, I will attend, but most likely the biggest help is that it has enhanced my curiosity to search up things on the internet and then help others who know.)

Moreover, seeking information and collaboration to improve TPACK abilities. They attend relevant conferences and use internet resources such as instructional videos to learn how to incorporate engaging activities into a variety of applications. This strategy demonstrates their dedication to ongoing learning and skill development in educational technology. Participant 4 said that:

"I attend seminars na somehow relate or makatabang mag improve ang TPACK skills. Tapos naga watch sad kog mga video sa internet on how to use different apps for engaging activities." (IDI-04)

(I attend seminars that somehow relate or help improve TPACK skills. Then I watched videos on the internet on how to use different apps for engaging activities.)

Additionally, it highlights the necessity of attending seminars geared to improve teachers' abilities, pointing out the changing educational scene. They emphasize the need of instructors constantly improving their talents in order to fulfill the evolving requirements of pupils in a fast-changing environment. This proactive approach displays their dedication to adjusting and improving as educators. As what Participant 5 said that:

"There are seminars man nga ginaoffer for teachers to help them enhance their skills kay we are in a world man that is evolving over time that is why students' pud over time is enhancing and the skills of the teachers must suit to the needs of the students." (IDI-05)

(There are also seminars that are offered for teachers to help them enhance their skills because we are in a world that is evolving over time that is why students' also over time is enhancing and the skills of the teachers must suit the needs of the students.)

Furthermore, professional growth enhances TPACK capabilities. They attend webinars, seminars, and conferences to improve their teaching skills and make better use of educational resources. They also underline their openness to seek help and ask questions when faced with problems, demonstrating their dedication to continual learning and cooperation in educational methods. As what Participant 7 stated that:

"To enhance my TPACK skills, I pursued professional development by attending webinars, seminars and conferences kay kani na mga opportunities nakatabang sya sakong pagtudlo og sa utilization sa mga materials na gamiton. Ako pud ang tao nga hilig mangutana, so naga ask ko sa uban if naa koy mga nalisudan or mga wala nahibal'an." (FGD-02)

(To enhance my TPACK skills, I pursued professional development by attending webinars, seminars and conferences because these opportunities helped me teach and the utilization of the materials to be used. I'm also the person who likes to ask questions, so I ask others if I have any difficulties or things I don't know.)

Lastly, seeking information and teamwork for professional growth. They typically attend webinars that they are asked to or have the opportunity to join, preferring to grab existing chances rather actively searching them out. They also underline the need of working with co-instructors and friends to develop their teaching techniques and TPACK abilities, demonstrating their dedication to ongoing growth through shared learning experiences. Participant 8 said that:

"Naga attend ko mostly mga webinars kanang magka opportunity ko nga magjoin or iinvite ko, dili sya pursued but taking kung unsay ginaoffer lang, tapos naga collaborate ko sakong co-instructors or sa akong mga friends kanang magpatabang." (FGD-03)

(I attend mostly webinars where I have an opportunity to join or invite me, I don't pursue them but just take what is offered, then I collaborate with my co-instructors or my friends who help me.)

The Insights of Teachers with regards to Technological Pedagogical Content Knowledge (TPACK) Skills

Displayed in Table 3.2 are the responses of the participants with regards to their insights in TPACK skills of the teachers. There are five themes which are drawn out from the in-depth and focus group discussion of the participants for the second question. The essential themes consisted of codes based from the issues being probed which are summarized in the table.

Tech-Infused Teaching Excellence. In the context of TPACK skills this refers to the use of technology in teaching techniques to improve learning results. It stresses the successful application of technology in combination with pedagogical and subject knowledge, as outlined by the TPACK framework. This method seeks to use technology to provide interesting, effective, and learner-centered teaching practices that are suited to specific subject matter and educational environments.

Technological Proficiency and Integration is the first code of the first probed issue. Teachers expressed common responses on their TPACK skills in academic context. The ability to successfully use a variety of technology in teaching and learning settings. It includes both the technical abilities required to run digital tools and platforms, as well as the pedagogical understanding needed to effectively incorporate these technologies into instructional practices. Teachers with Technological Proficiency and Integration are skilled at selecting relevant technology to improve content delivery, engage students, and support learning outcomes that are consistent with educational objectives.

Table 3.2. *Insights of Teachers with regards to Technological Pedagogical Content Knowledge (TPACK) Skills*

Probed Issues	*Core Ideas*	*Code/ Category*	*Essential Theme*	*Theoretical Perspectives*
Most important aspects of TPACK skills for a teacher	being able to use various technologies and internet sources with pedagogical expertise and content knowledge having lot of things to use in incorporating ideas make the discussion more effective and engaging knowing how to prepare and fix learning materials for your discussion making the life of a teacher easier and less burden to prepare learning materials	Technological Proficiency and Integration	Tech-Infused Teaching Excellence	TPACK Framework
	having pedagogical knowledge as it has a cycle on the process, methods/strategies and practices in teaching and learning having deep understanding with the content that was taught to students having competency of a teacher with the topic having the capacity of a teacher to effectively combine technology, pedagogy and content	Pedagogical Knowledge and Expertise		
	having the ability to integrate technology, pedagogy, and content knowledge having ability to mix technology, pedagogy, and content to fully support students in their learning process	Integration of Technology, Pedagogy, and Content		
Addressing gaps or limitations in your TPACK skills, and taking steps to continually improve the skills	addressing and pointing it out immediately to resolve the gaps and limitations considering the situation between the students to address gaps that need improvement	Improvement and Addressing Gaps	Proactive and Learner-Centered Approach	Constructivist Learning Theory
	considering the diversity to ensure that it is suitable for all students asking students if they understand the topic or not, in order to make it simpler for students knowing the different learning needs of the students making sure that the students understand asking students what are the things they don't understand being always considerate and open to have a good quality of learning	Student-Centered Approach		
Long-term goals for further developing and refining TPACK skills	deeming the need to continue using the knowledge possessed with TPACK developing and refining further TPACK skills learning more to continue enhancing TPACK skills developing and refining further by focusing on the improvement	Continued Development of TPACK Skills	Continuous Professional Growth for Effective Pedagogy	Theoretical Framework for Communities of Practice
	thinking of strategies to make the teaching simpler for students	Becoming Competent		

	continue being a productive teacher for students.	Teacher for Students		
	exploring continuously different ideas found on internet, from friends and from the suggestions of the students creating more collaborative class session collaborating always with my colleagues	Innovative Teaching Practices and Collaboration		
Strategies or resources recommend for teachers looking to enhance their TPACK skills	searching for resources from internet and books exploring online resources and opportunities being offered	Searching Through the Internet	Amplifying Digital Literacy	Connectivism
	watching videos and ideas from websites watching tutorials are really helpful for teachers.	Watching Video Tutorials		
Suggestions for co-teachers to help improve TPACK skills	implementing TPACK skills properly to monitor the things that needs improvement identifying specific ideas that needs improvement. giving time to monitor for the things that needs improvement to enhance TPACK skills reflecting the teaching method delivered to your students	Reflection and Monitoring of TPACK Skills	Self-Assessment of Applied TPACK Skills	TPACK Framework
	applying effectively the knowledge to your students applying ideas that they get from the internet, from others and their own ideas	Application of Skills and Knowledge		

Similarly, the importance of technical competency in their TPACK abilities as teachers. They highlight the capacity to use a variety of technologies and online resources, which is supplemented by pedagogical skills and topic understanding. This holistic approach allows them to efficiently satisfy kids' educational demands while also providing complete assistance throughout their schooling experience. As what Participant 1 said that:

"In my own perception, the most important aspects of TPACK skills para sa akoa as a teacher is to be able to use various technologies and internet sources as well as ang pedagogical expertise and content knowledge kay I can be able to give the needs of the students and makatabang ko fully sa ilahang journey sa pagskwela." (IDI-01)

(In my own perception, the most important aspects of TPACK skills for me as a teacher is to be able to use various technologies and internet sources as well as the pedagogical expertise and content knowledge because I can be able to give the needs of the students, and I can fully help them in their journey to school.)

Moreover, it stresses the relevance of TPACK abilities for teachers, stressing their capacity to successfully use technology in education. They emphasize that using TPACK allows for the assimilation and production of varied ideas, making classes more effective and entertaining. Finally, this strategy increases student learning experiences by providing them with information and skills relevant to their future activities. Participant 4 said that:

"As a teacher it is really important for us to have knowledge and skills in TPACK kay with the use of it daghan tag pwede magamit, daghan ta ma incorporate og daghan ta ideas na makuha to make our discussion more effective and engaging. So, by that daghan malearn ang students na magamit nila in the future." (IDI-04)

(As a teacher it is really important for us to have knowledge and skills in TPACK because with the use of it many tags can be used, we can incorporate many ideas and get many ideas to make our discussion more effective and engaging. So, by that the students will learn a lot that they can use in the future.)

In addition, it highlights the importance of TPACK abilities in organizing and developing successful instructional materials. They emphasize the necessity of organizing talks and coordinating objectives to ensure that students understand. This methodical approach guarantees that learning materials are clear and relevant, allowing for successful teaching and meeting educational objectives throughout the learning process. Participant 3 said that:

"The most important aspects of TPACK skills for teacher is kanang kabalo ka muprepare og paghan'ay sa imong ibutang para sa imong discussion because if ever imohang learning materials dili han'ay dili jud pud na sila makasabot, isa jud na sya sa important aspect the way unsaon nimo pagprepare imohang discussion specially imong objective, if mameet bana sya after or along the way sa imong pagtudlo" (IDI-03)

(The most important aspects of TPACK skills for teachers is that you know how to prepare and organize what you will put for your discussion because if ever your learning materials are not in order they will not be able to understand, this is one of the important aspects the way how should you prepare your discussion especially your objective, if you will meet him after or along the way of your teaching.)

Lastly, it underlines the importance of TPACK skills in simplifying the life of a teacher. They highlight how technology makes it easier

to create teaching materials such as PowerPoint presentations than older ways. They also emphasize that incorporating technology broadens students' learning beyond textbooks, allowing them to do research and access information more effectively. This integration improves teaching efficiency and broadens students' educational experiences. As what Participant 6 said that:

"The most important aspect of TPACK skills as a teacher kay I think it will make the life of a teacher easier. Though dili ingon nga easy nagyud kaayo but it will lessen the burden lang sa teacher specially in making IM's kay pag traditional of course magahinan jud og taas na oras magsulat, magdesign whereas through technology it can easily create a ppt and also through the use of technology, ang learnings sa studen will not be only limited na sa written books lang because makagamit na og technology in doing research." (FGD-01)

(The most important aspect of TPACK skills as a teacher is because I think it will make the life of a teacher easier. Although it's not as easy as it sounds, but it will lessen the burden on the teacher especially in making IM's because in the traditional course it will take a long time to write, design whereas through technology it can easily create a ppt and also through the use of technology , the student's learning will not be only limited to written books because they can use technology in doing research.)

Pedagogical Knowledge and Expertise is the second code of the first probed issue. Teachers expressed common responses on their TPACK skills in academic context. A teacher's profound grasp and ability to implement excellent teaching methods and procedures. It includes the capacity to create and implement instructional strategies that use technology effectively to improve learning outcomes. This expertise involves understanding how to select and adjust teaching techniques, manage classroom dynamics, measure student progress, and design engaging learning experiences that successfully use both material and technology.

Similarly, it underscores the importance of pedagogical knowledge in TPACK skills for teachers. They emphasize that effective teaching requires a cohesive blend of content knowledge, technology, and pedagogical expertise. They assert that pedagogy is essential for tailoring teaching methods to meet students' needs, ensuring that the integration of content and technology is meaningful and impactful in the learning process. Participant 2 said that:

"For me, the most important aspect of TPACK skills for a teacher kay ang Pedagogical Knowledge because direa naka cycle ang process, methods/strategies and practices when it comes to teaching ang learning. If you combine the technology and the content maging useless lang gihapon sya without the pedagogy kay unsa may pulos sa content and technology if imohang style sa pagtulo and how you cater you student's kay dili haom so, I think for me this is the important aspect of TPACK skills for teachers." (IDI-02)

(For me, the most important aspect of TPACK skills for a teacher is Pedagogical Knowledge because there is a cycle of process, methods/strategies and practices when it comes to teaching and learning. If you combine the technology and the content, he will still be useless without the pedagogy because what is the use of the content and technology if your style of teaching and how you cater you students is not appropriate, I think for me this is the important aspect of TPACK skills for teachers.)

In addition, it outlines critical parts of TPACK abilities for instructors, stressing a deep comprehension of the topic, effective use of technology, and strategic teaching techniques. They emphasize that these factors all contribute to the duty of utilizing TPACK to improve teaching effectiveness and student understanding. This comprehensive approach emphasizes the necessity of combining topic knowledge, technology, and pedagogical practices to achieve good educational results. Participant 7 stated that:

"The most important aspects of TPACK skills for a teacher siguro included diraa ang deep understanding sa content na imong itudlo, the ability to effectively use technology and the skill of strategies na matudluan nimog tarong imong students tapos masabtan nila imong ginatudlo because it is like a responsibility kung unsaon pag use sa teacher aning TPACK to effectively teach the students." (FGD-02)

(The most important aspects of TPACK skills for a teacher are probably included in the deep understanding of the content that you are going to teach, the ability to effectively use technology and the skill of strategies that you can teach your students correctly after they understand what you are teaching because it is like a responsibility how can the teacher use TPACK to effectively teach the students.)

Furthermore, it emphasizes the value of pedagogical knowledge and proficiency in TPACK abilities for instructors. They underline that having a deep grasp of the subject allows educators to successfully pick and implement teaching approaches that resonate with their pupils. This ability is required for deliberate integration of TPACK abilities, which will eventually improve instructional quality and student learning outcomes. As what Participant 9 stated that:

"For me I think the most important aspect of TPACK skills for teacher kay ang competencies when it comes sa topic so that a teacher can choose the most effective way to communicate with his/her students so dapat teachers are well-versed in the subject matter to integrate his/her TPACK skills for better teaching." (FGD-04)

(For me I think the most important aspect of TPACK skills for teachers is the competencies when it comes to the topic so that a teacher can choose the most effective way to communicate with his/her students so teachers must be well-versed in the subject matter to integrate his/her TPACK skills for better teaching.)

Lastly, they value the ability to effortlessly blend technology, pedagogy, and topic expertise to provide excellent learning experiences. They argue that effective TPACK abilities allow teachers to improve students' comprehension and vocabulary, emphasizing the

transformational power of well-rounded teaching approaches. Participant 10 stated that:

"Siguro para sa akoa one of the important aspects of TPACK skills for a teacher kay iyahang capacity to effectively combine technology, pedagogy, and content para makaprovide syag effective learning sa iyang mga studyante. Kay a good teacher with good TPACK skills can give improvements og ma expand pa ang vocabulary." (FGD-05)

(Maybe for me one of the important aspects of TPACK skills for a teacher is his capacity to effectively combine technology, pedagogy, and content so that he can provide effective learning to his students. Because a good teacher with good TPACK skills can give improvements and expand the vocabulary.)

Integration of Technology, Pedagogy, and Content is the third code of the first probed issue. Teachers expressed common responses on their TPACK skills in academic context. It focuses on how instructors may effectively use technology into their teaching practice. TPACK helps instructors to smoothly integrate these areas, ensuring that technology supports and improves both pedagogical practices and material knowledge. Teachers with good TPACK abilities may create interesting classes that use technology to enhance students' grasp of the subject.

Similarly, it highlights the necessity of combining technology, pedagogy, and topic understanding to provide effective teaching. They emphasize how this integration helps instructors improve engagement, efficacy, and customization of learning experiences. The participant claims that acquiring this skill not only benefits instructors but also encourages student progress and growth, highlighting the transformational power of well-integrated TPACK abilities in education. Participant 5 stated that:

"I think the most important aspects is the ability to integrate technology, pedagogy, and content knowledge in a cohesive and effective manner. Kay teachers can effectively integrate technology man into their teaching for more engaging, effective, and personalized learning experience for the students so kana na ability sa teacher makacreate jud sya og improvement dili lang sa iyang self but also sa students." (IDI-05)

(I think the most important aspect is the ability to integrate technology, pedagogy, and content knowledge in a cohesive and effective manner. Because teachers can effectively integrate technology into their teaching for more engaging, effective, and personalized learning experience for the students, so that ability of the teacher can create improvement not only in himself but also in the students.)

Additionally, it highlights the importance of combining technology, pedagogy, and content to enhance student learning and academic requirements. They emphasize that this integration is a critical component of TPACK abilities for teachers, and that its efficacy is dependent on how well educators use and implement these components in their teaching methods. This comprehensive approach guarantees that teaching approaches are relevant, engaging, and customized to maximize student learning results. Participant 8 said that:

"For teacher kay siguro their ability to mix technology, pedagogy and content to fully support the students sa ilahang learning og mga panginahanglanon sa ilang pagtuon, that's what I think the important aspect of TPACK skills, kay the usage, the deliver and the relevance of TPACK matter on how the teacher utilize it man." (FGD-03)

(For teachers it is probably their ability to mix technology, pedagogy and content to fully support the students in their learning and the needs of their studies, that's what I think the important aspect of TPACK skills, because the usage, the deliver and the relevance of TPACK matter on how the teacher utilizes it man.)

Proactive and Learner-Centered Approach. In terms of TPACK (Technological Pedagogical Content Knowledge) skills for instructors, a proactive and learner-centered approach stresses teachers anticipating student needs and actively involving students in the learning process. This method not only increases student involvement, but it also promotes the successful integration of technology, topic knowledge, and pedagogical practices into instruction.

Improvement and Addressing Gaps is the first code of the second probed issue. Teachers expressed common responses on their TPACK skills in academic context. In the context of TPACK skills for teachers, it refers to the continual process of identifying areas where instructors may be lacking in Technological Pedagogical Content Knowledge (TPACK) and executing ways to improve their competence in such areas. This category focuses on professional development efforts that try to close these gaps through focused training, collaborative learning, and reflective practices, resulting in more effective technology integration into teaching methods.

Similarly, stresses their proactive approach to improving their TPACK skills. They prioritize recognizing and addressing restrictions to guarantee successful teaching, particularly when catering to different learners. They emphasize the need of continuous improvement by watching and changing their teaching techniques to improve the learning experience for all students. Participant 1 stated that:

"If makanotice ko na there are gaps and limitations sakong TPACK skills, I immediately address it and gina point out nako sya para maresolve dayun og mapangitaan og solutions, specially naa tay diverse learners of course dapat nato na sila iconsider and pangitaan og alternatives or ang pag provide sa materials dapat haom sad para sa tanan and to continually improve this area of course ipadayun nimo ang pag observe sa imong teaching and learning process." (IDI-01)

(If I notice that there are gaps and limitations in my TPACK skills, I immediately address it and point it out to them so that they can be

resolved immediately and find solutions, especially we have diverse learners of course we should consider them and find alternatives or the provide the materials should be suitable for everyone and to continuously improve this area of course you will continue to observe your teaching and learning process.)

Moreover, addressing gaps and limits in their teaching practices and knowing their students' requirements and finding flaws to avoid, emphasizing continual progress. They emphasize the effects on both student learning and their own teaching efficacy, emphasizing the value of continuous reflection and modification in improving educational results. As what Participant 4 said that:

"Gina address nako akong gaps and limitations by considering the situation na naa ko between my students kase kailangan nato iaddress kung unsa ang mga kakulangan and mga dapat iwasan and to improve dapat nato sya buhaton permi, because it may affect not just the students but most specially pati atong pagtudlo." (IDI-04)

(I address my gaps and limitations by considering the situation that I have among my students because we need to address what are the shortcomings and what should be avoided and to improve, we should always do it, because it may affect not just the students but most especially as well as our teaching.)

Student-Centered Approach is the second code of the second probed issue. Teachers expressed common responses on their TPACK skills in academic context. refers to educational strategies that focus on students' needs, interests, and learning styles. It promotes active learning, in which students actively develop their own understanding and knowledge. In the framework of TPACK (Technological Pedagogical subject Knowledge), student-centered instructors utilize technology to assist and enhance this active learning process, ensuring that technology use is consistent with the subject being taught and the pedagogical tactics used. This strategy promotes cooperation, critical thinking, and problem solving among students, resulting in a more engaging and individualized learning experience.

Similarly, it emphasizes the necessity of a student-centered approach to overcoming gaps and limits in TPACK skills. They underline the need of taking student diversity into account when developing teaching practices that are inclusive and appropriate for all. The participant emphasizes the importance of knowing students' strengths and weaknesses throughout the teaching process to ensure that educational techniques successfully satisfy individual learning requirements while also improving overall student engagement and achievement. Participant 2 stated that:

"In addressing gaps and limitations in TPACK skills dapat jud nato iconsider ang diversity to ensure na tanan nato iimplement is suitable sa students. As a teacher kailangan nimo mahibal an ang strength and weaknesses sa imong students because it is important nga along the semester or journey sa imong pagtudlo, hatagan nimo og consideration ang learning needs sa studyante." (IDI-02)

(In addressing gaps and limitations in TPACK skills, we must consider diversity to ensure that everything we implement is suitable for students. As a teacher you need to know the strength and weaknesses of your students because it is important that along the semester or journey of your teaching, you will give consideration to the learning needs of the student.)

Moreover, a student-centered method to improving instructional materials based on student input. They focus knowing pupils' comprehension levels by aggressively soliciting their feedback. When the participant realizes that pupils find the material difficult, they decide to reduce their teaching style for clarity in future courses. This method displays their dedication to tailoring training to students' learning requirements and ensuring successful understanding in the classroom. As what Participant 3 said that:

"Okay so direa usahay as a teacher dili man jud nato ma ano nga perfect atoang learning materials so mangutana jud ko sakong mga student's kung masabtan raba class or dili so diraa mutubag akong mga students na sir medyo lisud kaayo sabton so as a teacher naa nakoy idea karon na mas ipa simplify pa nako akoang discussion or akoang topic, para pagka next discussion nako mas han'ay na." (IDI-03)

(Okay, so sometimes as a teacher, we don't even know how to perfect our learning materials, so I ask my students if they understand the class or not, so my students answer that it's a bit difficult to understand, so as a teacher, I have an idea. now I will simplify my discussion or my topic, so that the next time I discuss it will be more orderly.)

Additionally, aims to transfer the focus of instruction from the instructor to the pupil. It focuses on providing learning experiences that are tailored to each student's unique requirements, interests, and learning styles. This method emphasizes active student interaction, collaboration, and individualized learning paths in order to enable students to take control of their learning experience. The answer offered implies a realization of the necessity of recognizing student needs and continuing improving teaching techniques via training and professional development, which is consistent with the ideals of a student-centered approach. Participant 6 stated that:

"Para ma address nako ang gaps and limitations sa akong TPACK skills kay aside sa hibal'on nako ang different learning needs sa student kay ang mag explore pa by joining trainings siguro and orientations kay direa daghan pud ka matun'an na mga information sa mga angay og dili angay sa pagtudlo and to improve kailangan jud nimo sya buhaton and palawakon pa kay para man pud sya sa akoa tapos makahatag pud ko justice sakong diverse students." (FGD-01)

(To address the gaps and limitations of my TPACK skills because aside from knowing the different learning needs of the students because I will explore by joining trainings and orientations because there is also a lot of information that can be learned from those

who are suitable that is not suitable for teaching and to improve you need to do it and expand it because it is also for me and then I can also give justice to diverse students.)

Furthermore, a student-centered strategy to enhancing TPACK skills by identifying gaps and limits. They stress the need of recognizing varied learning requirements by participating in trainings and orientations. They hope to serve their kids more effectively and fairly by gaining new information and abilities. This proactive approach demonstrates their dedication to continual development and ensuring that educational procedures meet the different requirements of their pupils. Participant 7 stated that:

"One thing na akong ginabuhat pag naga address og gaps and limitations kay ginapasabot nako sya sakong mga studyante, na dapat maging considerate ta and maging open to have a good quality of teaching ang learning kay sa pag generate sa TPACK skills dili lang man ta diretso magprovide, naa man jud tay dapat na mga iwasan." (FGD-02)

(One thing I do when addressing gaps and limitations is because I explain to my students, that we should be considerate and be open to have a good quality of teaching the learning than to generate TPACK skills, we should not just directly provide, there are things we should avoid.)

Lastly, it focuses on the student-centered approach to resolving gaps and limits in their TPACK skills. They emphasize finding areas for development by asking student feedback to guarantee understanding. They emphasize the necessity of taking use of professional development options such as webinars, seminars, and orientations to get insights into good teaching approaches. This strategy demonstrates their dedication to modifying teaching tactics to better suit students' educational requirements and improve learning results. Participant 8 stated that:

"Akong first na ginabuhat to address gaps and limitations kay ginadetermine nako ang areas na required og improvements tapos naga ask ko sakong students kung unsay kulang og naa ba silay nasabtan sa akoa because dili man enough gyud imong TPACK skills kung dili masabtan so with that daghan og considerations na dapat iaddress. So, with the help pud sa mga webinars, seminars and orientations naa pud ta makuha nga information didtoa kung dapat bani nato itudlo or iprovide or dili." (FGD-03)

(The first thing I do is to address gaps and limitations because I determine the areas that require improvements and then I ask my students what is missing, and do they understand anything because your TPACK skills are not really enough if you do not understand so with that there are many considerations that must be addressed. So, with the help of webinars, seminars and orientations, we can also get information there on whether we should teach or provide or not.)

Continuous Professional Growth for Effective Pedagogy. It refers to the continual process by which instructors participate in professional development activities to improve their teaching skills, notably through the lens of Technological Pedagogical Content Knowledge (TPACK). This method focuses on effectively integrating technology into teaching (TPACK), comprehending pedagogical tactics, and maintaining current topic knowledge. It entails reflective practice, collaboration, and the use of new technologies and methodologies to enhance educational results and student learning experiences.

Continued Development of TPACK Skills is the first code of the third probed issue. Teachers expressed common responses on their TPACK skills in academic context. It refers to instructors' continual attempts to improve their Technological Pedagogical Content Knowledge (TPACK). This category includes tactics, training, and activities that attempt to improve teachers' understanding and integration of technology, pedagogy, and content knowledge in educational environments. It entails continuous learning and the use of TPACK frameworks to successfully develop, implement, and evaluate technology-enhanced learning experiences that are aligned with curricular goals and student requirements.

Similarly, it outlines their dedication to developing TPACK abilities throughout their teaching career. They encourage utilizing TPACK information continuously to track progress and learn from both achievements and setbacks in each teaching session. They convey a long-term objective of continuous growth as teachers, emphasizing a step-by-step approach to improving instructional approaches and increasing classroom performance. Participant 1 said that:

"My long-term goal is to continue using the knowledge I have with TPACK along sakong journey as a teacher, because through sa paggamit aning TPACK in every teaching session, I can, and I will see the progress apil na diraa ang mga mali or mga failed na nagamit during sa klase. So, along the journey step by step ko mag improve as a teacher." (IDI-01)

(My long-term goal is to continue using the knowledge I have with TPACK along my journey as a teacher, because through the use of TPACK in every teaching session, I can, and I will see the progress including the mistakes or failed to be used during class. So, along the journey step by step, I will improve as a teacher.)

In addition, it describes the long-term objective of always improving and refining their TPACK skills. They focus resolving their instructional weaknesses and developing areas that need improvement. Their emphasis is on continuous self-assessment and development, ensuring that their teaching approaches evolve to better suit the changing requirements of their pupils throughout time. This commitment displays their drive to continuous professional development and improving teaching effectiveness. As what Participant 2 stated that:

"Akong long-term goal to further develop and refine my TPACK skills is to always give emphasis sa mga short comings nako in

teaching, iaddress ang mga kulang og hatagan permi og pagtagad ang mga dapat pang iimprove." (IDI-02)

(My long-term goal to further develop and refine my TPACK skills is to always give emphasis to my short comings in teaching, address those that are lacking and always pay attention to those that need to be improved.)

Moreover, it highlights the long-term objective of continual learning to improve their TPACK abilities. They acknowledge that education and technology are always improving, emphasizing the significance of keeping current rather than stagnating in obsolete approaches. They emphasize that growing their TPACK expertise greatly assists in producing engaging teaching experiences and is critical for continual progress in their teaching journey. This approach demonstrates their dedication to adjusting and growing as an educator in order to better serve their pupils. Participant 4 said that:

"Maybe one of my long-term goals jud kay mag learn pa, kay naga enhance nga naga enhance atong learning and technology as of now so dapat dili jud ka mag pa bilin lang sa daan kay need nimo og improvements to have an engaging teaching. Having enough knowledge sa TPACK really gives a big help sa imong teaching journey so need jud nimo og continuous learning sad." (IDI-04)

(Maybe one of my long-term goals is to learn more, because our learning and technology are improving as of now, so you shouldn't just stay in the past because you need improvements to have an engaging teaching. Having enough knowledge of TPACK really gives a big help in your teaching journey so you need continuous learning.)

Furthermore, the long-term goals for growing and improving their TPACK abilities, with a focus on continual development in their position as teachers. They emphasize the continuing nature of professional development and the significance of always improving their abilities in order to make progress in their teaching practice. This approach demonstrates their commitment to changing as an educator in order to better support student learning and engagement throughout time. Participant 5 said that:

"My long-term goals for further developing and refining my TPACK skills focus on continuous improvement kay para tuloy2 ang progress as a teacher." (IDI-05)

(My long-term goals for further developing and refining my TPACK skills focus on continuous improvement because the progress as a teacher will continue.)

Becoming Competent Teacher for Students is the second code of the third probed issue. Teachers expressed common responses on their TPACK skills in academic context. TPACK focuses on the skills and knowledge needed to handle the interface of technology, pedagogy, and content matter. Teachers that understand TPACK may design meaningful learning experiences that use technology to improve student engagement, comprehension, and accomplishment in their unique academic fields.

Similarly, it highlights the long-term ambitions, which include becoming a good teacher for their kids. They stress their dedication to developing and executing excellent teaching approaches that make learning easy for pupils. They emphasize the need of ongoing skill development using a variety of tools such as the internet, books, and seminars, demonstrating their proactive commitment to improving their teaching talents over time. This demonstrates their commitment to developing teaching approaches to better fulfill the educational requirements of their pupils. Participant 3 stated that:

"Ang long-term goals nako direa kung unsa pajud akong mga pamaagi para mas mapasayon pa nako ang akoang pagtudlo sakong mga studyante, of course diraa mangita pud ko og paamagi nga madevelop pa akoang skills, so naa man tay mga makuha sa internet, sa libro, sa mga seminars og sa uban pa nga mga ideas na pwede nato magamit." (IDI-03)

(My long-term goals are what are my methods so that I can make it easier for my students to teach, of course I will also find ways to develop my skills, so we also have things that can be found on the internet, in books, in seminars and other ideas that we can use.)

Additionally, it articulates the long-term objective of remaining productive as a teacher while constantly improving and expanding their TPACK abilities. They highlight the necessity of being open to new ideas and constantly looking for ways to enhance their teaching methods. This proactive approach displays their dedication to providing excellent educational procedures that improve their students' learning experiences over time. As what Participant 6 said that:

"Long-term goal siguro nako kay mapadayun ang kaproductive teacher sa akong mga studyante kay every now and then naa juy mga innovations na dapat iconsider so as a teacher, para marefine and madevelop pa akong TPACK skills is to always seek and find a room for improvement sa mga kakulangan." (FGD-01)

(My long-term goal is to continue to be a productive teacher for my students because every now and then there are innovations that should be considered so as a teacher, to refine and develop my TPACK skills is to always seek and find a room for improvement. of deficiencies.)

Innovative Teaching Practices and Collaboration is the third code of the third probed issue. Teachers expressed common responses on their TPACK skills in academic context.

Similarly, describes their long-term objective of improving TPACK capabilities through creative teaching methods and teamwork. They highlight the need of researching various ideas from the internet, coworkers, pupils, and their surroundings. They exhibit a

dedication to ongoing development and modification in their teaching methods to guarantee that their pupils receive trustworthy and high-quality information. This proactive approach demonstrates their commitment to improving as educators and using innovative techniques to improve teaching effectiveness and student learning results. Participant 7 stated that:

"My long-term goal for further development sa TPACK skills na naa ko is to continue explore different ideas found sa internet ba na, sa mga friends, suggestions sa students or sa mga makita nako sa palibot because sa dagan satong life dili man ta mag stick lang ana nga place, kailangan man nato mag move forward og mag improve para naa tay ikaprovide na reliable and quality nga content satong students." (FGD-02)

(My long-term goal for further development of the TPACK skills that I have is to continue exploring different ideas found on the internet, from friends, suggestions from students or from those I see around because in the course of our life we don't stick to each other. that's the only place, we need to move forward and improve so that we can provide reliable and quality content to our students.)

Moreover, highlights their long-term objective of encouraging cooperation in the classroom to improve teaching effectiveness and TPACK skills. They prioritize providing chances for collaborative learning experiences to improve their students' educational journeys. Their goal is to guarantee that students have effective and transformational learning experiences, demonstrating their dedication to improve instructional techniques through collaborative approaches. This approach demonstrates their commitment to using new teaching approaches to help students improve and engage in the learning process. Participant 8 stated that:

"My long-term goal is to create more collaborative ang klase nako para mas maging effective akong teaching og akong TPACK skills na matun'an pud. Kay gusto nako I make sure nga akong students daghan matun'ag and life-changing nga experiences sa ilang journey sa pagskwela." (FGD-03)

(My long-term goal is to create more collaborative in my class so that my teaching can be more effective and my TPACK skills can also be learned. Because I want to make sure that my students have many enlightening and life-changing experiences in their journey to school.)

Lastly, it discusses their approach to addressing gaps in their TPACK skills through innovative teaching practices and collaboration. They emphasize collaborating with colleagues to stay updated on technological advancements in education. They acknowledge their teaching shortcomings and stress the importance of taking action to adapt and improve. Their focus is on enhancing teaching effectiveness to better support student learning experiences, demonstrating a proactive attitude towards professional growth and development in education.Participant 9

"To address any gaps or limitations sakong TPACK skills, nagacollaborate jud ko sakong colleagues and naga update ko sa mga changes when it comes to technology na related sa education, kay bisan ako maobserve sad nako akong mga kakulangan sa pagtudlo and dili man pwede na dili nako sya iaddress, so kailangan aksyonan to change and improve para sa mas effective teaching para sa students." (FGD-04)

(To address any gaps or limitations in my TPACK skills, I am collaborating with my colleagues, and I am updating the changes when it comes to technology related to education, because even I can observe my shortcomings in teaching, and I can't. he will be addressed, so action must be taken to change and improve for more effective teaching for students.)

Amplifying Digital Literacy. It entails providing instructors with the necessary skills to effectively incorporate digital tools and technology into their teaching methods. It stresses not just technical abilities, but also pedagogical practices and subject matter knowledge in order to improve learning experiences using digital means. This strategy seeks to enable educators to use technology in meaningful ways that promote student learning and engagement across several subject areas.

Searching Through the Internet is the first code of the fourth probed issue. Teachers expressed common responses on their TPACK skills in academic context. In the context of TPACK, teacher skills refer to the capacity to successfully browse, analyze, and use online resources to improve teaching and learning. It includes selecting reputable sources, executing efficient searches, critically analyzing material, and using digital technologies into lesson preparation and instruction to promote topic knowledge (TPACK model), pedagogical methods, and successful use of technology in the classroom.

Similarly, it proposes techniques for co-teachers to improve their TPACK abilities, highlighting the necessity of obtaining assistance from competent colleagues and making use of online and printed materials. They emphasize the importance of collaborative learning and conducting independent study to obtain varied viewpoints and instructional resources. This approach displays their proactive attitude toward encouraging continuous learning and professional development among their colleagues in order to successfully enhance teaching techniques. Participant 2 stated that:

"Strategies that I can recommend sakong co-teachers kay ang pag ask sa uban specially sa mga naay alam when it comes to TPACK tapos search for resources makita sa internet and sa books." (IDI-02)

(Strategies that I can recommend to my co-teachers is to ask others especially those who know when it comes to TPACK and then search for resources found on the internet and in books.)

Additionally, proposes ways for their co-teachers to improve their TPACK abilities by investigating accessible resources and possibilities. They highlight the need of attending seminars, using internet resources, and other learning opportunities to gain useful insights and instructional materials. This proactive approach demonstrates their dedication to continual learning and professional development, with the goal of increasing teaching effectiveness and student engagement in the classroom. Participant 9 said that

"Para sa akoa isa ang best strategy nga akong marecommend sakong co-teacher's kay ang pag explore sa mga resources and opportunities na gina offer because diraa daghan ka learnings na magain where you can use sa imong klase, included na diraa ang mga seminars and mga online resources." (FGD-04)

(For me, one of the best strategies that I can recommend to my co-teachers is to explore the resources and opportunities that are offered because there are many learnings that you can use in your class, including seminars and online resources.)

Watching Video Tutorials is the second code of the fourth probed issue. Teachers expressed common responses on their TPACK skills in academic context. Teachers' TPACK abilities include the use of digital resources to improve their teaching techniques. It focuses on how instructors may effectively use online video tutorials to increase their grasp of subject topic, incorporate technology into their pedagogy, and modify instructional methodologies to meet the requirements of various learners. Teachers learn how to choose, assess, and implement appropriate video tutorials into their classes so that student engagement and learning objectives are successfully supported.

Similarly, recommends utilizing video tutorials, particularly on platforms like YouTube, to enhance TPACK skills. They emphasize the availability of instructional videos for learning how to use various apps effectively in classroom discussions. Additionally, they advocate attending seminars related to TPACK to further augment their knowledge and skills. This proactive approach highlights their commitment to leveraging multimedia resources and professional development opportunities to improve teaching practices and student engagement. Participant 4 stated that:

"I recommend watching YouTube videos og sa ubang websites pa about enhancing TRACKS skills. Daghag kaayog videos sa specially sa YouTube that can teach you how to use different apps to have an engaging discussion with your students jud. Also, if naay mga seminars related sa TPACK, attend jud kay sayang ang opportunities nga ma enhance and maka learn more paka." (IDI-04)

(I recommend watching YouTube videos and other websites about enhancing TRACKS skills. There are many videos especially on YouTube that can teach you how to use different apps to have an engaging discussion with your students. Also, if there are seminars related to TPACK, attend because the opportunities to enhance and learn more are wasted.)

Moreover, emphasizes the importance of trainings, orientations, and viewing video tutorials as effective ways to improve TPACK abilities. They underline the personal benefits they have gained from these activities and express their desire to suggest them to others, while also appreciating individual learning styles. This displays their proactive attitude to professional development and dedication to improving teaching techniques via continuous learning and skill-building tactics. As what Participant 6 stated:

"So, like what I have said a while ago, for me trainings, joining orientation, watching tutorials will really help us as a teacher in improving our TPACK skills. So murag mao na akong Nakita nga way sa ako rapud na ha and sa akoa rapud marecommend sa uban because we do have a different preference naman." (FGD-01)

(So, like what I have said a while ago, for me trainings, joining orientation, watching tutorials will really help us as a teacher in improving our TPACK skills. So, it's like that's how I saw that it's not my way and I'm going to recommend it to others because we do have a different preference.)

Self-Assessment of Applied TPACK Skills. Teachers are evaluated on their skill in Technological Pedagogical Content Knowledge (TPACK), which combines their grasp of technology, pedagogy (teaching techniques), and subject matter knowledge. This evaluation assists educators in identifying strengths and areas for growth in order to successfully incorporate technology into instruction and improve student learning outcomes.

Reflection and Monitoring of TPACK Skills is the first code of the fifth probed issue. Teachers expressed common responses on their TPACK skills in academic context. Relates to how instructors analyze, evaluate, and improve their Technological Pedagogical Content Knowledge (TPACK). It entails critically evaluating how well technology is integrated into teaching techniques to improve content delivery and student learning. This approach often consists of self-assessment, feedback from peers or mentors, and continuing monitoring to ensure that TPACK abilities expand and improve with time. Reflection assists instructors in identifying strengths, areas for improvement, and opportunities to better match technology use with educational objectives and student needs.

Similarly, instructs their co-teachers on how to properly utilize and check their TPACK abilities while teaching. They highlight the need of continuous reflection in identifying opportunities for growth and ensuring that teaching techniques are aligned with student needs. This proactive approach demonstrates their dedication to ongoing professional development and improved teaching efficacy through reflective practices and skill monitoring. Participant 1 stated that:

"I could suggest that my co-teachers na iimplement nila properly ilahang TPACK skills in teaching para mamonitor nila ilahang mga kailangan iimprove if there are things na need usabon para sa in'ana na way makita if naa ba changes and naga improve baka as a

teacher sa imong students." (IDI-01)

(I could suggest that my co-teachers properly implement their TPACK skills in teaching so that they can monitor their needs and improve if there are things that need to be changed for that. to your students.)

Additionally, teachers should identify particular areas for growth in their TPACK abilities through reflection and monitoring. They highlight the significance of constant improvement in education in order to maintain the learning experience dynamic and interesting. This approach represents their belief in continuous professional development and the possibility of generating new ideas to improve student learning experiences. Participant 8 said that:

"I recommend kay ang pag identify sa specific areas na need nila iimprove through ana mas maging effective sila sa teaching field and dili boring ilahang journey as teacher, because I or we believe jud baya sa saying na there will be always room for improvement, so diraa mas makahelp ta sa atong students and mas daghan pa ta ideas na magather." (FGD-03)

(I recommend that by identifying the specific areas that they need to improve through that, they will be more effective in the teaching field and their journey as a teacher will not be boring, because I or we believe in the saying that there will always be room for improvement, so there you go. we can help our students more and we have more ideas to gather.)

Moreover, recommends their co-teachers to set some time to track their progress in developing TPACK abilities. They highlight the value of continuous improvement through the investigation of online resources and creative ideas. This proactive approach demonstrates their dedication to ongoing learning and professional development, with the goal of optimizing teaching methodologies and effectively integrating new technology into classroom practices. Participant 4 stated that:

"I suggest to my co-teachers nga maglaan jud silage time to monitor if naga improve ba sila or not para ma enhance nila ilahang TPACK skills kay para makacreate napud kag another strategy na magamit nimo and ayaw paghunong just like what I have said nga mag explore through internet og mga ideas kay daghan man sa mga apps and websites." (IDI-04)

(I suggest to my co-teachers that they should take time to monitor if they are improving or not so that they can enhance their TPACK skills so that they can create another strategy that you can use and don't stop just like what I have said to explore through internet and ideas because there are many apps and websites.)

Lastly, proposes that their co-instructors evaluate their teaching approaches to discover areas for growth or adjustment. They highlight the need of reflective practice in improving teaching abilities and ensuring that students get good teachings. This method demonstrates their dedication to continual improvement and professional development, with the goal of optimizing teaching effectiveness and student learning outcomes via rigorous examination of instructional approaches. Participant 9 said that:

"marecommend nako sakong co-intructors kay ang pagreflect sa mga teaching methods na nadeliver sa students kung naa bay mga dapat iimprove or ichange kay it might help them have a chance nga maenhance pa ilahang skills sa pag tudlo." (FGD-04)

(I would recommend to my co-instructors to reflect on the teaching methods that have been delivered to the students if there are any that should be improved or changed because it might help them have a chance to improve their teaching skills.)

Application of Skills and Knowledge is the second code of the fifth probed issue. Teachers expressed common responses on their TPACK skills in academic context. Refers to instructors' capacity to successfully integrate technology (T), pedagogy (P), and content knowledge (CK) into their teaching activities. This entails not just knowing how to utilize technological tools, but also knowing when and why to use them to improve the teaching and learning of certain subject areas. Teachers in this category are proficient in selecting suitable technology, providing relevant learning experiences, and measuring student learning outcomes, all while adhering to educational goals and content standards.

Similarly, advises that their co-instructors reflect on their teaching approaches to discover areas that might be improved or changed. They believe that reflective practice may greatly improve teaching abilities and lead to better instructional delivery for students. This approach displays their dedication to continual professional growth as well as the effective use of reflective tools to better teaching skills. Participant 6 stated that:

"I always aim for the best jud sakong mga students and sama sa mga tubag nako gaina dili na mawala diraa ang mga trainings and seminars but one thing nga akong masuggest sa ilaha, dili man mahimong effective ang teaching nimo og dili nimo iapply imong knowledge sa diraa imohang makita sa imong studyante unsay mga kakulangan na dapat nimo iimprove and daghan kaayo sources na pwede kuhaan og ideas para sa mas effective og quality nga teaching." (FGD-01)

(I always aim for the best for my students and like my answers, the trainings and seminars will never disappear, but one thing I can suggest to them is that your teaching will not be effective if you do not apply your knowledge to Here you can see your student's weaknesses that you should improve and there are many sources where you can get ideas for more effective and quality teaching.)

Moreover, proposes that their co-teachers improve their TPACK abilities by actively using ideas from the internet, comments from colleagues, and their own inventions. They underline the need of using multiple knowledge sources, such as ideas from seminars and trainings, to improve teaching approaches. This proactive approach reflects their commitment to continual learning and the use of

diverse tools to increase teaching effectiveness and student engagement. As what Participant 7 stated that:

"Akong masuggest sa akong co-teachers that might help sa ilang TPACK skills in teaching kay ang pag apply sa mga ideas na ilahang makita sa internet, sa mga suggestions sa uban og ang ilahang sarili nga idea because there are a lot of knowledge man gikan sa uban na imong magamit, sa seminars and trainings palang daan what more kung madiggest pa nimo ang uban knowledge sa palibot so mao na akong suggestion." (FGD-02)

(I can suggest to my co-teachers that it might help their TPACK skills in teaching because they apply the ideas they find on the internet, the suggestions of others and their own ideas because there are a lot of knowledge from others you can use, in seminars and trainings beforehand, what more if you can digest the other knowledge around, so that's my suggestion.)

Data Integration of the Salient Quantitative and Qualitative Findings

The present study on the technological pedagogical content knowledge skills of the teachers in a local college carries out a mixed method approach employing convergent parallel approach. The fifth research question of the study involves the corroboration of the findings from quantitative and qualitative phase. The table 4 on the salient quantitative and qualitative findings presents the focal points in the first column which contains the aspect or focal points of the study followed by the quantitative and qualitative findings in the second and third column. The findings from the quantitative and quantitative phase are usually the indicators with the highest mean while the qualitative findings which display the identified responses show confirmation or disconfirmation to the quantitative results. The fourth column is the nature of the data integration, and the fifth column contains the axiological implications made based on the data described in preceding columns.

Technological Pedagogical Content Knowledge (TPACK) Skills of Teachers. In quantitative phase, under the indicator technology knowledge, the specific item was rated by the participants as very high, know how to use web technologies (e.g. blogs, social networks). This result is connected with the qualitative findings, which is categorized as Searching Through the Internet in core idea searching for resources from internet and books, under the essential theme Amplifying Digital Literacy. It is safe to say that the qualitative merges the quantitative.

Table 4. *Joint Display of Salient Quantitative and Qualitative Findings*

Aspect Or Focal Point	*Quantitative Findings*	*Qualitative Findings*	*Nature Of Data Integration*	*Axiological Implications*
Technological Pedagogical Content Knowledge (TPACK) Skills of Teachers	On Table 2 under the indicator technology knowledge with an overall mean of 4.71 specifically the item number 4 - know how to use web technologies (e.g. blogs, social networks) – 4.70; Very high.	On Table 3.1 under the category of Searching Through the Internet specifically in core idea 1 - searching for resources from internet and books.	merging-converging	The high average of tech knowledge indicates strong skills and confidence, showing the value of digital literacy and effective use of technology.
	On Table 2 under the indicator pedagogy knowledge with an overall mean of 4.78 specifically the item number 2 - can manage activities for individual, partner, group, and whole class work (4.73; Very high).	On Table 3.1 under the category of Individual and Group-based Assessment specifically in core idea 1 - assessing students through games and group activities.	merging-converging	The high score in managing different classroom activities shows that educators are very skilled at organizing and leading individual, partner, group, and whole-class work.
	On Table 2 under the indicator content knowledge with an overall mean of 4.50 specifically the item number 2 - can comprehend English text accurately (4.63; Very High).	On Table 3.1 under the category of Student-Centered Approach specifically in core idea 2 - asking students if they understand the topic or not, in order to make it simpler for students.	merging-converging	The high average content knowledge means a strong grasp of complex information. This helps educators adjust their teaching for better clarity and effectiveness, improving the learning experience and meeting student needs more effectively.
	On Table 2 under the indicator Technological Content Knowledge with an overall mean of 4.64 specifically the item number 3 - know about technologies that I can use to teach English vocabulary (4.65; Very High).	On Table 3.1 under the category of Clarity in Instruction specifically in core idea 1 - making the learning materials easier to be understood by the students.	merging-converging	The high score in Technological Content Knowledge shows that educators are very skilled at using technology to teach English. This expertise helps make

				learning materials clearer, boosting student understanding and engagement.
	On Table 2 under the indicator Pedagogical Content Knowledge with an overall mean of 4.61 specifically the item number 2 - can choose an appropriate approach to teach learners (e.g. communicative approach, direct method) – 4.66; Very high.	On Table 3.1 under the category of Pedagogical Knowledge and Expertise specifically in core idea 1 - having pedagogical knowledge as it has a cycle on the process, methods/strategies and practices in teaching and learning	merging-converging	The high scores show that teachers have strong knowledge and skills in teaching methods. They can choose the right approaches and understand how teaching practices evolve. This means they are well-prepared to use various effective methods, which benefits student learning.
	On Table 2 under the indicator Technological Pedagogical Knowledge with an overall mean of 4.63 specifically the item number 4 - can design relevant learning experiences to promote student learning, using technology (4.61; Very high).	On Table 3.1 under the category Interactive Activities from Online Resources specifically in core idea 1 - being able to use interactive activities found on internet like games and relevant graphics and utilizing it in the class.	merging-converging	The high score in Technological Pedagogical Knowledge shows that educators are skilled at creating technology-based learning experiences that improve student learning. It highlights the value of using technology to make lessons more engaging and effective.
	On Table 2 under the indicator Technological Pedagogical and Content Knowledge with an overall mean of 4.64 specifically the item number 5 - can participate in digital learning communities to explore creative applications of technology to improve student learning (4.57; Very high).	On Table 3.1 under the category Seminars and Workshops specifically in core idea 4 - participating in seminars and orientations inside and outside the campus.	merging-converging	The high scores in Technological Pedagogical and Content Knowledge show that teachers value using technology to boost student learning. Their active participation in digital learning communities, seminars, and workshops further confirms their commitment to staying updated and improving their skills.
Perspectives of Teachers with regards to Technological Pedagogical Content Knowledge (TPACK) Skills	On Table 2 under the indicator Technological Pedagogical Knowledge with an overall mean of 4.63 specifically item number 3 - can adapt the use of the technologies that I am learning about to different teaching activities (4.61; Very high).	On Table 3.1 under the category Effectiveness and Understanding specifically in core idea 3 - using multimedia presentations to further explain complex context and make it more interactive learning with the use of different activities.	merging-converging	The high scores in Technological Pedagogical Knowledge suggest that technology is well-integrated into the classroom, making learning more accessible and interactive. This shows that using flexible, tech-based teaching methods is key to boosting student engagement and understanding.
	On Table 2 under the indicator Technological Pedagogical Knowledge with an overall mean of 4.63 specifically item number 1 - can evaluate the appropriateness of a technology for teaching a lesson (4.66; Very high).	On Table 3.1 under the category Regular Monitoring and Evaluation specifically in core idea 2 - regularly evaluating and assessing students' engagement, performances and feedback.	merging-converging	The high rating shows that teachers are very good at selecting IT resources to improve lessons. This skill helps them effectively monitor and assess student participation and progress. Using technology well

				makes ongoing assessment easier and enhances teaching and learning.
	On Table 2 under the indicator Pedagogy Knowledge with an overall mean of 4.78 specifically item number 3 - can adapt my teaching style to different learners (4.77; Very high).	On Table 3.1 under the category Seeking Knowledge and Collaboration specifically in core idea 6 - I also collaborate with my co-instructors and friends.	merging-converging	These results show that educators highly value flexible teaching and cooperative learning. They are dedicated to using adaptive methods and working together.
Insights of Teachers with regards to Technological Pedagogical Content Knowledge (TPACK) Skills	On Table 2 under the indicator Pedagogy Knowledge with an overall mean of 4.78 specifically item number 1 - know how to maintain classroom management (4.81; Very high).	On table 3.2 under the category Improvement and Addressing Gaps specifically in core idea 1 - addressing and pointing it out immediately to resolve the gaps and limitations.		The high rating for-classroom management skills shows a strong focus on teaching knowledge and effectively handling classroom dynamics. It highlights a commitment to proactive problem-solving and efficient management.
	On table 2 under the indicator Technological Pedagogical and Content Knowledge with an overall mean of 4.64 specifically item number 4 - can use a range of technologies that enable students to become active participants (4.81; Very High).	Table 3.2 under the category Technological Proficiency and Integration specifically in core idea 2 - having lot of things to use in incorporating ideas make the discussion more effective and engaging.		The high score suggests that using various technologies to boost student engagement is well-supported. Having a range of tools helps make classroom discussions more effective and engaging.
	On Table 2 under the indicator Pedagogy Knowledge with an overall mean of 4.78 specifically item number 5 - can select teaching materials appropriate to the needs of learners (4.78; Very high).	On Table 3.2 under the category Student-centered Approach specifically in core idea 1 - considering the diversity to ensure that it is suitable for all students.		The average score shows a strong ability to meet diverse learning needs, aligning with a student-centered approach. This reflects a commitment to considering diversity and providing personalized instruction, which enhances the quality of education.

Similarly, in quantitative phase, under the indicator pedagogy knowledge, the specific item was rated by the participants as very high, can manage activities for individual, partner, group, and whole class work. This result is connected with the qualitative findings, which is categorized as Individual and Group-based Assessment in core idea assessing students through games and group activities, under the essential theme Formative Assessment of Learning. It is safe to say that the qualitative merges the quantitative.

In addition, in quantitative phase, under the indicator content knowledge, the specific item was rated by the participants as very high, can comprehend English text accurately. This result is connected with the qualitative findings, which is categorized as Student-Centered Approach in core idea asking students if they understand the topic or not, in order to make it simpler for students, under the essential theme Proactive and Learner-Centered Approach. It is safe to say that the qualitative merges the quantitative.

Moreover, in quantitative phase, under the indicator Technological content knowledge, the specific item was rated by the participants as very high, know about technologies that I can use to teach English vocabulary. This result is connected with the qualitative findings, which is categorized as Clarity in Instruction in core idea making the learning easier to be understood by the students, under the essential theme Instructional Effectiveness through Technology Integration. It is safe to say that the qualitative merges the quantitative.

Consequently, in quantitative phase, under the indicator Pedagogical content knowledge, the specific item was rated by the participants as very high, can choose an appropriate approach to teach learners. This result is connected with the qualitative findings, which is categorized as Pedagogical Knowledge and Expertise in core idea having pedagogical knowledge as it has a cycle on the process, methods/strategies and practices in teaching and learning, under the essential theme Tech-Infused teaching Excellence. It is safe to say that the qualitative merges the quantitative.

Furthermore, in quantitative phase, under the indicator Technological Pedagogical knowledge, the specific item was rated by the participants as very high, can design relevant learning experiences to promote student learning using technology. This result is

connected with the qualitative findings, which is categorized as Interactive Activities from Online Resources in core idea being able to use interactive activities found on internet like games and relevant graphics and utilizing it in the class, under the essential theme Interactive and Engaging Technologically Aided Activities. It is safe to say that the qualitative merges the quantitative.

Additionally, in quantitative phase, under the indicator Technological Pedagogical and Content knowledge, the specific item was rated by the participants as very high, can participate in digital learning communities to explore creative applications of technology to improve student learning. This result is connected with the qualitative findings, which is categorized as Interactive Seminars and Workshops in core idea participating in seminars and orientations inside and outside the campus, under the essential theme Continuous Professional Development and Lifelong Learning. It is safe to say that the qualitative merges the quantitative.

Perspectives of Teachers with regards to Technological Pedagogical Content Knowledge (TPACK) Skills. In quantitative phase, under the indicator Technological Pedagogical knowledge, the specific item was rated by the participants as very high, can adapt the use of the technologies that I am learning about to different teaching activities. This result is connected with the qualitative findings, which is categorized as Effectiveness and Understanding in core idea using multimedia presentations to further explain complex context and make it more interactive learning with the use of different activities, under the essential theme Interactive and Engaging Technologically Aided Activities. It is safe to say that the qualitative merges the quantitative.

Moreover, in quantitative phase, under the indicator Technological Pedagogical knowledge, the specific item was rated by the participants as very high, can evaluate the appropriateness of a technology for teaching a lesson. This result is connected with the qualitative findings, which is categorized as Regular Monitoring and Evaluation in core idea regularly evaluating and assessing students' engagement, performances and feedback, under the essential theme Formative Assessment of Learning. It is safe to say that the qualitative merges the quantitative.

Furthermore, in quantitative phase, under the indicator pedagogy knowledge, the specific item was rated by the participants as very high, can adapt my teaching style to different learners. This result is connected with the qualitative findings, which is categorized as Seeking Knowledge and Collaboration in core idea I also collaborate with my co-instructors and friends, under the essential theme Continuous Professional Development and Lifelong Learning. It is safe to say that the qualitative merges the quantitative.

Insights of Teachers with regards to Technological Pedagogical Content Knowledge (TPACK) Skills. In quantitative phase, under the indicator pedagogy knowledge, the specific item was rated by the participants as very high, know how to maintain classroom management. This result is connected with the qualitative findings, which is categorized as Improvement and Addressing Gaps in core idea addressing and pointing it out immediately to resolve the gaps and limitations, under the essential theme Proactive and Learner-Centered Approach. It is safe to say that the qualitative merges the quantitative.

Similarly, in quantitative phase, under the indicator Technological Pedagogical and Content knowledge, the specific item was rated by the participants as very high, can use a range of technologies that enable students to become active participants. This result is connected with the qualitative findings, which is categorized as Technological Proficiency and Integration in core idea having lot of things to use in incorporating ideas make the discussion more effective and engaging, under the essential theme Tech-Infused Teaching Excellence. It is safe to say that the qualitative merges the quantitative.

Consequently, in quantitative phase, under the indicator pedagogy knowledge, the specific item was rated by the participants as very high, can select teaching materials appropriate to the needs of learners. This result was connected with the qualitative findings, which is categorized as Student-centered Approach in core idea considering the diversity to ensure that it is suitable for all students, under the essential theme Proactive and Learner-Centered Approach. It is safe to say that the qualitative merges the quantitative.

Conclusions

Based on the finding of the study, the following conclusions were drawn:

First, the status of Technological Pedagogical Content Knowledge skills is very high in terms of technology knowledge, pedagogy knowledge, content knowledge, technological content knowledge, technological pedagogical knowledge and technological pedagogical and content knowledge. Hence, this indicate that the indicators of professional well-being are always manifested by the teachers.

Second, the thematic analysis of the qualitative data was done based from the responses gained through the conduct of in-depth interview (IDI) and focus group discussion (FGD). The results gave more information in terms of their perceptions in TPACK. Qualitatively, teachers have different insight with regards to their TPACK skills. The following themes had emerged: Instructional Effectiveness through Technology Integration, Formative Assessment of Learning, Interactive and Engaging Technologically Aided Activities, and Continuous Professional Development and Lifelong Learning.

Third, from the participants responses, other themes are identified which show the insight shared of teachers with regards to their TPACK skills. The following are the themes: Tech-Infused Teaching Excellence, Proactive and Learner-Centered Approach, Continuous Professional Growth for Effective Pedagogy, Amplifying Digital Literacy, and Self-Assessment of Applied TPACK Skills.

Lastly, to better understand the impact of teachers' TPACK skills, responses were analyzed thematically, corroborating the quantitative

findings of the study. The integration of findings from both phases provided a comprehensive view based on the research plan. The quantitative results indicated the status of teachers' TPACK skills, which aligned with the insights gained from the qualitative phase. The analysis showed that despite the changing world, such us the integration of technology in teaching, the overall TPACK skills of teachers was largely positive. Both quantitative and qualitative results confirmed that while there were negative aspects, the benefits and positive effects on teachers' skills were significant. This synthesis demonstrates the importance of prioritizing teachers' knowledge when it comes to technology, pedagogy and content, as it directly impacts their effectiveness and professionalization in teaching.

Based on the findings of the study, the following recommendations were being drawn:

Since technological content knowledge was rated low among the seven TPACK indicators, the teachers are advised to improve their technological competencies through professional learning and development. To do this, teachers should consider ways of incorporating technology into substance, ways of carrying out formative assessments, and favorable ways of participating in technology supported activities. Training will provide smoother continuation to professional growth so teachers will have a better knowledge to enhance the instructional practices to engage students.

Moreover, information gained from the teachers' self-evaluation should reflect the developing skills among them. Through the years, the delivery of lessons in the classroom also advances (teachers need to implement new fast approaches to fill in the gaps of learning and requirements of students). This involves a session, availing materials of the topic, providing or offering discussions, and also attending seminars to update the acquired knowledge.

Lastly, it is crucial that teachers get across or pass on to their students an understanding of what is relevant from what is not relevant knowledge to disseminate potentially misleading information and incongruent ideas. Teachers that have insisted on their personal development as well as implementing the following suggested measures will be in a better position to sustain their teaching and in the process established a favorable learning milieu.

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Affiliations and Corresponding Information

Louilyn U. Magallanes
Kapalong College of Agriculture, Sciences and Technology – Philippines

Jonelson C. Escandallo, PhD
Kapalong College of Agriculture, Sciences and Technology – Philippines