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Research Article

Self-Perceived TPACK of Public Secondary English Teachers: Basis for an Extension Program

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ABSTRACT

The need for quality education was the fourth sustainable development goal of UNESCO which ensured inclusive, equitable, and lifelong learning opportunities for all learners. Its implication to increasing the supply of qualified teachers in developing countries was part of the major roles of teacher education institutions. Through complete enumeration, this study examined the self-perceived technological pedagogical and content knowledge of junior and senior high school English teachers in a large public school for S.Y. 2024-2025. It further aimed to design an extension training program for implementation in the research locale. After a series of preliminaries including the online orientation and obtaining informed consent in person, an adopted and validated survey questionnaire was administered in Google form in a group chat. Statistical information analyzed through the computation of weight and mean revealed that the respondents are generally competent to very much competent in terms of TPACK. There were suggested learning objectives, activities, and materials applicable and purposeful for an extension program designed to enhance the competence of the faculty recipients in integrating technology in both online and classroom-based teaching.

Keywords: *English language teaching, Extension program, Needs assessment, Pedagogy, Teacher education, Technology*

Introduction

The dire need for quality education was highlighted by UNESCO's Sustainable Development Goal (SDG) which ensured inclusive and equitable quality education and promoted lifelong learning opportunities for all. It targeted to increase the supply of qualified teachers in developing countries which indicates the supply of qualified teachers or the proportion

of teachers with the minimum required qualifications, by education level in the UN SDG framework in 2030 (Roser, 2023). It further addressed strategic area 5 of the Strategic Development Plan of the Philippine Normal University. Specifically, it supported the community extension and development endeavors of PNU Mindanao by boosting the university's engage-

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ment and impact among its external stakeholders. It sought to establish relevant, evidence-based, and innovative response mechanisms to the needs, demands and requirements of different community partners to sustain the institution's leadership in Teacher Education.

This research was significant to the priorities of the university being the National Center for Teacher Education in the Country. At the regional level, one strong driver for PNU Mindanao was to maintain its status as the Center of Excellence (COE) in Caraga. It was driven to produce competent and future-ready teachers and school leaders even in its extension and linkages undertakings. This study further supported the university's core faculty function in extension embed in the Adopt a School for Quality Education (ASQUE). It was conducted to help maintain teacher quality and well-being as reflected in PNU's Research and Creative Work Agenda through research-based solutions to the on-going challenges on the teaching of English with technology integration in the high school levels. This Endeavor was an offshoot of the university's collaboration with the Department of Education (DepEd), particularly the Agusan del Sur National High School (ASNHS) of the Division of Agusan del Sur.

The foundation for research, extension, and education integration was to have a common direction in planning, discussing, implementing, and demonstrating appropriate program performance and accountability. PNU Mindanao fortified its role as a Multicultural Hub by developing and conducting projects for development and innovation aimed at developing innovative and effective pedagogies, producing contextualized, localized, and indigenized instructional materials through research, and creating multicultural and gender sensitive programs and services. Since conducting extension services was part of its core functions, the campus university derived its plans and programs for the delivery of community services from instruction and research.

The kind of generation that students had at present was a concrete definition of "hi-tec students" as they were exposed to technology and the World Wide Web. Some students were actually more learned and susceptible to the use of instructional materials and other resources

integrated with technology. They had a notion that teachers kept abreast with the current nuances of pedagogical processes. Bostan and Sener (2021) studied how students perceived the TPACK of English as a Foreign Language (EFL) teachers using quantitative methodology through convenience sampling method. The data were collected from one state school with all students as respondents. They made use of the TPACK scale of Tseng (2014) which showed that high school students perceived that the competencies of their EFL teachers were positive.

Moreover, the past health crisis brought both challenges and opportunities in education in terms of English language pedagogies. Obos, Aridah, and Rusmawaty (2023) studies how English teachers implement TPACK in online learning context and explore the challenges they experiences. Their qualitative approach involved the descriptive analysis of reducing, displaying and concluding data. The research revealed that English teachers of Bunga Bangsa Islamic Junior High School Samarinda used social media applications such as WhatsApp, Zoom meeting and Google Classroom. Their difficulties included limited quota, limited internet connectivity, the behavior of students, and their adaption to the applications.

In the Philippines, Pangket (2022) identified the TPACK of the English Public Junior and Senior High School teachers in Bontoc, Mountain Province. It focused on integrating technology in the teaching and learning process as used by 25 English language teachers through mixed methods. Self-perception of the language teachers which was adopted in the present study manifested that they were competent in their content and pedagogical knowledge. It was likewise found out that integrating technology in teaching and learning had issues and challenges to English language teachers. There was a need for the respondents to improve their technological pedagogical practices, particularly on student engagements. The study recommended to emphasize the provision of workshops and training on technological pedagogical approaches to enhance the knowledge of teachers in these areas.

These researches highlighted how TPACK played a significant part in addressing student

and faculty perceptions and their adaption to new pedagogical drivers. English teachers perceived positively on their TPACK competencies and they were convinced that their proficiency indicated an alignment with their students' perceptions as they have strength in content and pedagogical knowledge. However, there

were challenges in effectively integrating technology to engage students as well as limited internet access and difficulties in adapting to digital tools. Hence, this study was in support to the professional development of high school English teachers to capacitate them in improving their competency in TPACK pedagogies.

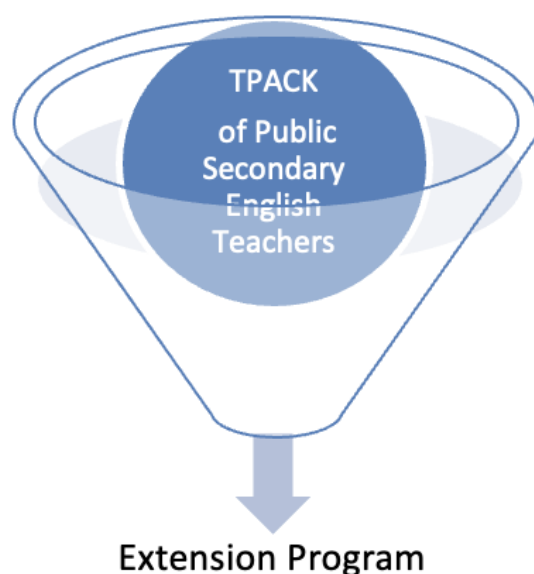


Figure 1. Conceptual Framework of the Study

The teacher's knowledge of educational technology to support student learning was also known as technological pedagogical and content knowledge (Mishra & Koehler, 2006) which sprung from the integration of technology to other components of a teacher's knowledge based on Shulman's (1987) idea of pedagogical content knowledge (PCK). For this research, the need to equip public-school teachers of English and Literature with competencies in the trends of TPACK was deemed vital for successful instruction and enhancement their research skills to address issues in teaching and learning and even material development. This, this study aimed to examine the technological pedagogical and content knowledge of the Public Junior and Senior High School English teachers of Agusan del Sur National High School (ASNHS) for S.Y. 2024-2025 and design an extension training program related to TPACK for implementation in the research locale.

Materials and Methods

This study used descriptive developmental methods aimed at describing a population, situation or phenomenon in an accurate and systematic manner. Online survey research allowed to gather data from the respondents on their self-perception on their competence in content and pedagogical knowledge wherein frequencies and mean were employed to analyze data as posited by McCombes (2019). The developmental nature of this research was reflected in the extension activity designed and implemented for the target respondents.

The study used a **total enumeration sampling technique, wherein all** 42 English teachers in Agusan del Sur National High School (ASNHS), with 28 of them teaching Junior High School and 14 handling Senior High School classes for SY 2024-2025 were included as participants. The sampling technique is appropriate when the target population is relatively small and accessible, which allowed the researcher to collect data from all members of

the group (Creswell & Creswell, 2018). It fosters **validity and reliability** of the results by removing sampling bias and ensuring that all relative perceptions within the specific context are represented (Etikan et al., 2016).

The teachers' demographic profiles related to gender, years in teaching, educational background, grade level and subjects taught were elicited. However, due to health reasons some of the faculty were not able to participate in the needs assessment. A few respondents likewise failed to join the online sessions of the extension activity due to limited data or internet connectivity in the residential areas. This variation in participation implies **digital divide** among teachers, specifically their accessibility to stable internet connectivity. This issue remains significant in education, which created disparities in accessing digital tools and infrastructure, affecting participation and learning opportunities (UNESCO, 2021). Moreover, limited access to reliable internet and digital devices may constraint the ability of teachers to engage in technology-mediated professional development (Trust & Whalen, 2020). It was evident that this gap affected inclusivity of teachers in the extension program which was reliant on technology integration.

Of the 38 faculty who were able to answer the needs assessment, only 33 (86.8%) were females. Their age data revealed that five (13.2%) were 21 to 30 years old, fifteen (39.5%) were 31 to 40 years old, nine (23.7%) were 41 to 50 years old, and nine more (23.7%) were 51 years old and above. Based on their highest educational attainment, there were twenty-four (63.2%) had bachelor degrees and fourteen (36.8%) were Master of Arts degree holders. More than half of them (57.9%) has been teaching in the research locale for 6 to 15 years, six (15.85) served DepEd for 26 to 35 years, four (10.5%) served for 1 to 5 years, four (10.5%) more had been in the service for 16 to 25 years, one (2.6%) server for 26 to 35 years, and one more (2.65) has been teaching for 5 to 15 years. They taught English and literature subjects across different levels in secondary.

A survey questionnaire adapted from Pangket (2022) with the permission with permission secured from the original researcher. In the previous study, the instrument showed a

high level of internal consistency, with an overall Cronbach's alpha coefficient of $\alpha = 0.97$, which indicated high reliability. This indicated that the items consistently measure the constructs related to TPACK. Moreover, the content of the instrument was validated by two language teachers from the Department of Languages at Mountain Province State Polytechnic College (MPSPC), which ensured its relevance, clarity, and appropriateness for assessing competencies of the teachers.

For ease of administration in the present study, the instrument was converted into a Google form which was floated to the respondents through a group chat. This instrument included a checklist of the respondents self-reported competency in TPACK with varying number of indicators. Furthermore, the TPACK questionnaire was designed to assess the competencies of participants in various domains which were significant in teaching in technology-integrated English subjects. The domains include Technological Knowledge (TK), Pedagogical Knowledge (PK), Content Knowledge (CK), and their intersections—Technological Pedagogical Knowledge (TPK), Technological Content Knowledge (TCK), Pedagogical Content Knowledge (PCK), and Technological Pedagogical Content Knowledge (TPCK).

In addition, each of the domain assessed competencies such as the selection of the right technological application or device for instruction, application of appropriate methods for teaching, and the technological integration to subject content. The questionnaire uses a Likert scale to measure levels of competency, providing insights into areas where educators feel confident or need improvement. This tool served as a valuable resource for professional development through targeted trainings aimed at enhancing the integration of technology in teaching practices.

Initial communications with the school principal were made to establish rapport and talk about the proposed extension program. The signing of MOA took place during a ceremony organized by the campus university. A virtual orientation on the background of the study was conducted online wherein the English language faculty were requested to fill out the survey questionnaire as needs assessment

in Google form reflecting their informed consent with signature within a period of five days from September 17, 2024. A printed version of the informed consent was distributed to the respondents for their signature during the launching activity.

A Likert scale following common conventional researches in education and social science (Tseng, 2014; Bostan & Sener, 2021) were employed. The statistical data were analyzed through frequency count to interpret the needs assessment of the English teachers. The weighted mean further interpreted their responses with the use of a Likert scale using the following range and qualitative interpretation: 4-very competent; 3-competent; 2-fairly competent; and, 1-less competent to describe their TPACK competence. From the findings of the needs assessment, the researcher developed a blueprint of the extension activity following the course intended learning outcomes of a Ph.D. ELE elective course (ELE 809-Technology in Language Education) which she has been teaching for five years.

Result and Discussion

Self-Perceived TPACK of Public Secondary English Teachers

Initially, the design of the proposed extension training program was influenced by the demographic profile of the respondents, ensuring its context-responsive nature and at par with their professional needs. It ensured that the extension activities were inclusive, responsive, and with increased potential impact on the professional development of teachers. Since the data showed that most of the respondents were within the early to mid-career stage, as 39.5% aged 31 to 40 and 57.9% with 6 to 15 years of teaching experience. This suggested that majority of the participants were in a crucial phase of professional growth and needed capacity-building in research.

In terms of their educational attainment, 63.2% of the teachers had only a bachelor's degree, while 36.8% of them completed a master's program, which indicated differentiated training approaches. For teachers with bachelor's degrees, the extension program may incorporate basic lessons on action research, which would include guided research development,

mentoring, and scaffolded activities. It was hoped that the activities may encourage pursuit of graduate-level studies or credit-bearing professional development with PNU and DepEd standards, particularly that a number of teachers were students of the former.

Considering that the teachers taught English and literature subjects I both junior and senior high school levels, the program should include discipline-specific research topics that directly influenced classroom practice. Including research-based solutions was likewise important for the alignment of the extension program with the PNU's Research and Creative Work Agenda (2024–2028), emphasizing evidence-based practice and teacher-led innovation. Moreover, with the varied years of teaching experience, the program adopted an accommodating structure, which allowed beginning teachers to develop foundational competencies. More experienced teachers were given opportunities as lead researchers with refined research skills. Mentoring, collaborative learning, and practical research outputs were integrated to address varied needs.

Furthermore, there were varying levels of competence in technology among ASNHS English teachers. Most of them showed a competence of 2.38 to 3.07 in opting for the right technologies used for instruction, utilization of new technologies, and attending to computer-related problems of their students. A few were noted to be proficient in providing solution on issues on hardware and even in software installation. Some of the participants responded that they were 'less competent' in this indicator. These findings corroborated with the study of Nurhidayat, Mujiyanto, Yuliasri, and Hartono, (2023) who found out that though teachers possessed technological skills like operating technological devices and digital resources, many faced difficulties with technical issues such how to trouble shoot hardware issues and how to effectively integrate technology in teaching and learning.

The English faculty showed strengths in pedagogical knowledge competencies as majority of them are competent or very competent in the latest instructional strategies. Moreover, most of them claimed to be effective in managing their classrooms. They were also competent

at designing practical assessments and managing misconceptions of high school students; however, they were challenged in employing the appropriate teaching methods to suit the varying needs of their students with responses of fairly competent to less competent. In terms of knowledge of subject matter, the ASNHS English teachers were strongly proficient as over 70% of them were competent to very competent in the application of linguistic knowledge, solution of linguistic problems, and horizontalization of course content with learning objectives. Nonetheless, there were teachers who were less competent in improving instances and relating English topics with relevant areas.

Moreover, there were gaps in the integration of technology with pedagogy as the English faculty showed moderate competence in planning and using technology in teaching reflected by the mean score of 2.75. It was evident among the majority of the respondents that they promote online teaching and learning and use varied methods. Only few of the teachers demonstrated that they were fairly competent in this indicator. This implied that though English teachers had the ability to employ digital resources for the delivery of information and instruction, there were challenges in the application of these tools for a student-centered learning through activities that foster collaboration and interactive engagement (Akram, Abdelrady, Al-Adwan, and Ramzan, 2022). In terms of their Technological Pedagogical Content Knowledge, the respondents showed diverse abilities in employing technology in delivering content. It was noted that there was a high competence in the use of software tools and creation multimedia presentations. Even so, it was challenging for some English teachers to use graphical tools and animations as manifested by their response of "fairly competent" in this indicator.

As to the Pedagogical Content Knowledge, most of the respondents were confident in their competence in their teaching strategies based on the English curriculum. Most of them were competent in the explanation of the contents of the curriculum and in dealing with learning challenges. However, nine teachers indicated that they were fairly competent in the

use of research-based methods and addressing misconceptions. Further, there were challenges in the integration of technology, pedagogy, and content to support the comprehension skills of students and the promotion of strategies in the research locale. Though the English faculty showed competence (mean score of 2.90) in merging technology in lesson planning and assessment, this implied as a serious area for improvement.

The Disconnect Between Knowledge and Practice

The results of this study revealed a notable irony, that while public secondary English teachers reported to have high levels of self-perceived TPACK, they had significant challenges in engaging with students and the practical adaptation of digital tools. This indicated that their high self-perceived competence does not automatically translate into smooth classroom integration. Moreover, the high self-perception of TPACK suggested that teachers were confident in their theoretical understanding of the ways technology, pedagogy, and English content integrate. Meanwhile, the challenges with student engagement indicated that this knowledge may be hindered by what Ertmer (1999) characterized as first-order barriers. While the teachers were confident in the use of technology, they were confronted by external factors which were out of their control.

One primary issue could be the discrepancy between perceived competence and tool adaptation performance, which indicates that infrastructure was a challenge. Teachers with superior self-perceived TPACK could not effectively conduct a technology-related lesson if there was a limited school-wide bandwidth or if a "digital divide" existed in terms of accessing hardware (Koehler & Mishra, 2009). In public secondary school settings, these systemic restraints could make even the most technologically competent teacher to be less effective in the teaching and learning process.

In addition, the results suggested that TPACK frameworks often focus heavily on the capabilities of teachers, which sometimes overlooked the readiness and behavior of students. Howard and Mozejko (2015) highlighted that integrating technology is a mutual process. If

students had limited digital literacy in accessing and engaging with the tools or of they resist to screen-based learning, the high level of TPACK of teachers becomes a debatable idea. This further suggested that the identified engagement gap maybe a result of student-related factors rather than a deficiency of teacher expertise.

TPACK Integration in the Teaching of Secondary English

The needs assessment implied concerns to content knowledge and challenges in teaching through context point toward the implementation of an extension program. Thus, a training design was crafted for the ASNHS faculty and implemented through blended modalities. The succeeding part of this discussion presented the extension training activity designed to adapt pedagogy suitable to varied socio-economic conditions, leverage limited resources, and foster reasonable teaching and learning processes integrated with technology.

From the results of the needs assessment conducted, the first phase of the extension program dubbed as “TPACK Integration in the Teaching of Secondary English” was designed to answer the needs of the English faculty respondents in their Technological, Pedagogical and Content Knowledge (TPACK) in the teaching of English. The suggested learning objectives, activities, outcomes and materials were applicable and purposeful based on the Needs Assessment. These were designed to enhance the competence of the faculty recipients in integrating TPACK in both online and classroom-based teaching. This further serves as avenue to strengthen their competence and boost their confidence in teaching in the 21st century. For PNU Mindanao, it was a venue for the M.A. and Ph.D. English Language Education faculty and students to conduct extension activities to be of service to the community as teacher educators.

The eight-day webinar workshop was conducted from 5:30 PM to 8:30 PM every Tuesday and Friday which was beyond the office hours of the respondents. The topics include ‘Overview of Technological, Pedagogical and Content Knowledge in Language Education’ aimed at describing the global trends in education and how these trends and instructional systems

shape knowledge, skills, attitudes and values of the learners effectively. It was followed by a discussion on “Digital Citizenship” which sought to capacitate the English faculty to identify and practice being digital citizens and educators. Another topic focused on a discussion on “Computer Assisted Language Learning” which sought to guide the teachers to become familiar with a range of Computer-Assisted Language Learning (CALL) applications and their social and cultural aspects. Participants engaged in lectures, simulations, and open discussions.

Meanwhile, the data gathered indicated that future professional development should shift lean towards contingency-based pedagogy which would include training teachers on how to manage disengaged student due to technological concerns. Continuing the series, a workshop was conducted with a prior discussion on “Computer Assisted Instructional Materials” which sought to guide English teachers in creating instructional materials for online and offline language instruction. One more topic was on “Gamification and Game-based Learning” where practice strategies for continuous updating of computer literacy for teachers and students were presented. A talk and walkthrough of “Learning Management System Technologies and Software Solutions for Online Teaching” followed which aimed to identify particular technologies can be used to support learning in both in offline and online delivery. It further explored innovative, game-based learning techniques and develop strategies for effective technology use in classrooms.

Part of the training was “Online Assessments” which guided the respondents to decide which technological assessment tools were appropriate in assessing learning before, during, of after offline and online classes. This was succeeded by a topic on “Teaching and Learning with Technology in Classrooms” where methodologies, approaches, issues and trends in teaching and learning language with technology in the classroom. Another topic dealt with “Security Issues, Ethics, and Emerging Technologies in Education” which aimed to direct the respondents or make informed decisions about social and ethical issues involving technology. The last session included a topic on “Blended

learning” which sought to define, discuss, and evaluate blended learning and flexible teaching learning as a trend in progressive learning. This was followed by a discussion on “Technology, Digital Media, and Curriculum Integration” which focused on ways of developing strategies and commitment to explore new and emerging educational technologies and applying learning theory to evaluate quality technology experiences. Capping the training was a topic on “Learning Poverty and its Implication to Reading” which presented the English teachers with current issues and challenges in English language teaching and learning.

As part of the extension activity, the respondents were expected to craft a lesson plan with the option to use a suggested template or that of DepED showing technology integration in both online and onsite classes. A group of English faculty served as demonstration teachers and showcased their enhanced competence in teaching English with technology integration both in onsite and virtual classroom in 60 minutes. Relevant findings of the study such as the topics included in the training could be embedded in courses related to Technology for Teaching and Learning and Technology in Language Education with focus on technological pedagogical knowledge.

Conclusion

This study highlighted the competency needs of public Junior and Senior High School English teachers of Agusan del Sur National High School (ASNHS) in doing action research. It provided empirical basis for the development of an extension training program related to TPACK. Relevant findings showed specific gaps in competencies related to research, specifically in planning, data analysis, and the integration of technology, which required structured and context-responsive professional development.

Significantly, the study fostered the role of PNU Mindanao as a multicultural hub and Center of Excellence (COE) in teacher education. The proposed extension program highlighted the university’s commitment in promoting inclusive, culturally responsive, and research driven initiatives that addressed various educational settings through attending to the

needs of ASNHS teachers. It further demonstrated leadership in teacher education by advancing the research capacity of in-service teachers. The conduct of a needs-based professional development program grounded on evidence-based practices in support to with the TEI’s mission of producing innovative, reflective, and research-oriented teachers.

This study added impact by connecting institutional goals with the needs of the community. It positions the extension program not only as a training initiative, but also a strategic intermediation, by enhancing teacher quality, fostering a culture of research, and supporting sustainable educational development. Through translating research results into an extension program for professional development, PNU Mindanao connected the gap between theory and practice by capacitating teachers to be reflective practitioners and agents of change. This integration of research, instruction, and extension advanced institutional goals while influencing the long-term improvement of quality of education in diverse communities. Thus, the study confirmed that teacher education institutions had crucial roles in promoting sustainable development through evidence-based projects.

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