International Journal of Open-Access, Interdisciplinary & New Educational Discoveries of ETCOR Educational Research Center (iJOINED ETCOR)

ETCOR Educational Research Center PHILIPPINES
Sta. Ana, Pampanga, Philippines
INTERNATIONAL MULTIDISCIPLINARY RESEARCH CONFERENCE
Google Scholar Website: https://etcor.org

iJOINED ETCOR
P - ISSN 2984-7567
E - ISSN 2945-3577

The Exigency
P - ISSN 2984-7842
E - ISSN 1908-3181

Technological and Pedagogical Knowledge: Its Influence on Teaching Performance

Eddie C. Manzano
Eastern Samar State University – Guiuan Campus, Guiuan, Eastern Samar, Philippines
Corresponding Author email: *eddiecmanzano@gmail.com*

Received: 13 March 2023 **Revised**: 04 April 2023 **Accepted**: 07 April 2023

Available Online: 08 April 2023

Volume II (2023), Issue 2, P-ISSN – 2984-7567; E-ISSN - 2945-3577

Abstract

Aim: This study aimed to determine the perceived technological, pedagogical knowledge, and teaching performance of faculty members in the teacher education program of Eastern Samar State University- Guiuan.

Methodology: The descriptive-correlational study was utilized to determine the technological and pedagogical knowledge and its influence on the teaching performance of faculty members of the teacher education programs of Eastern Samar State University-Guiuan, Eastern Samar, Philippines. The study used an adapted survey questionnaire.

Results: Results reveal that teachers are technologically and pedagogically knowledgeable. Moreover, results show that the faculty members are outstanding in their teaching performance based on the gathered and analyzed data. Utilizing Pearson's correlation coefficient, the findings show a significant correlation between technology and teachers' pedagogical knowledge, where r = 0.505 and a p-value of 0.004. In contrast, no significant correlation is observed between technology and pedagogical knowledge to the teaching performance of the faculty, with r = 0.53, -0.46, and a p-value of 0.783 and 0.808, respectively. It indicates that the faculty members are often knowledgeable in providing technology and pedagogy in classroom teaching and learning activities *vis-à-vis* teaching performance.

Conclusion: Faculty members of the teacher education programs of the College of Education are often competent when it comes to providing technology and using pedagogy in their classroom teaching and learning activities. However, it can also be concluded that despite the perceived competence in technology and pedagogy, the faculty members are outstanding in their teaching performance. Similarly, there is no significant relationship between technology competence, pedagogical competence, and faculty teaching performance.

Keywords: Competence, Instruction, Strategies, Teacher Education

INTRODUCTION

Implementing the curriculum suggests a multidisciplinary approach to delivering instruction in a constructivist classroom. These approaches enable teachers to employ different strategies and the learners to progress and develop the necessary learning competencies they will acquire through the process (Dizon & Sanchez, 2020). Currently, "classroom instruction is characterized by the acceleration of instructional technologies designed to increase efficiency, expand productivity, and ultimately enhance students' total learning experiences" (Apau, 2017, p. 167). Ghavifekr et al. (2016) believed that ICT in education has the potential to transfer teaching. They emphasize how the integration of ICT in instruction influences the teaching and learning process. Teachers' competence, capability, and knowledge are highly significant variables regarding technology, content, and pedagogy.

Several studies have explored and examined the development of technological pedagogical content knowledge (TPCK) of various sets of a population. There were studies in the context of technological pedagogical and content knowledge conducted in different fields like Physical Education (Scrabis-Fletcher et al., 2016; Cengiz, 2015), Mathematics (Bate et al., 2013), English language (Ersanli, 2016) and in social sciences (Apau, 2017). These studies explicitly focus on how TPCK influences [pre-service] teachers' effectiveness in general and specific fields or disciplines. Appropriately, they believed that when pre-service teachers have the necessary ICT education, they could figure out how these technologies offer power in enhancing learning and instruction in the classroom environments, as stated by Karaca (2015). As such, technical competence and technical literacy require knowledge and skills on how to use these technologies and eventually provide comprehensive learning and teaching and the power and limitations of these technologies (Kazu & Erten, 2014).

ETCOR Educational Research Center PHILIPPINES
Sta. Ana, Pampanga, Philippines
INTERNATIONAL MULTIDISCIPLINARY RESEARCH CONFERENCE
Website: https://etcor.org
iJOINED ETCOR
P - ISSN 2984-7567
E - ISSN 2945-3577
The Exigency
P - ISSN 2984-7842
E - ISSN 1908-3181

Moreover, teachers can integrate technology into their instruction only if they are technology-competent professionals (Can et al., 2017; Sanchez & Sarmiento, 2020). On the other hand, pre-service teachers would be capable and competent in integrating ICT into their teaching, given that they acquire the necessary knowledge to teach with technology (Apau, 2017). Malubay and Daguplo (2018) conducted a cross-sectional correlation study to investigate secondary mathematics teachers' technological pedagogical content knowledge. According to the result, mathematics teachers with technological pedagogical content knowledge in technology and integration are generally novice, young, and single female teachers who are also knowledgeable in content and pedagogy. However, when Keçeci and Zengin (2017) observed the TPACK of science teacher candidates, they revealed that the teacher candidates' technological pedagogical content knowledge level is moderate. This is in favor of the pre-test and post-test scores, which are significantly different; therefore, it is essential that they have to attend courses in teacher training programs to evaluate their competency in TPACK.

However, the use of technology in teaching is not merely by using ICT resources. Teachers need to consider the connections of technology integration to content and pedagogy, which is commonly known as technological pedagogical content knowledge (TPACK). Mishra and Koehler (2006) defined technological pedagogical content knowledge as a framework on the interrelatedness of technology, content, and pedagogy for developing good teaching. However, Govender and Govender (2014), as cited in Liu et al. (2015), chronicled that "most teachers with access to technology and competency skills in computers fail to integrate technology in their teaching" (p. 161). In other words, the need for effective ICT integration requires well-trained individuals to use 21st-century technology knowledge vis-à-vis content and pedagogy to measure teachers' efficacy in integrating technology.

In 2009, Koehler and Mishra defined content knowledge (CK) as the actual knowledge of teachers to the subject matter that is to be taught to the learners. This is consistent with the definition as written in Sanchez (2023a) and in Muńoz & Sanchez (2023). It includes teachers' understanding of theories, concepts, ideas, organizational frameworks, evidence, and proof and established practices and approaches toward developing such knowledge (Shulman, 1986, as cited in Koehler et al., 2013). As such, teachers' content knowledge would require enough preparation for teachers to be competent and knowledgeable concerning content on specific content areas and related disciplines to deepen learners' skills. This is to elude students from receiving incorrect information and develop misconceptions on the subject matter (Apau, 2017).

As such, to effectively execute the constructs of the TPACK framework, teachers must be knowledgeable on the use of technological tools and resources vis-à-vis content and pedagogy for effective and quality instruction.

In the TPACK framework, ICT integration would help as a thinking tool in instruction, specifically along with the construct of content knowledge in developing learners' 21st-century skills. Through content knowledge, teachers enable learners to think critically and analytically as they develop an understanding of the concepts in a specific subject area to elude misconceptions. On the other hand, knowledge of ICT integration would likewise help learners deepen their understanding as ICT provides different materials that enable them to help visualize abstract and complex ideas into visual representations. It aids individual learner with a full grasp of understanding contents and ultimately strengthens teaching. Similarly, these various elements considered in ICT integration are equally indispensable in enhancing the 21st-century skills of learners as part of the technological knowledge structure. Tao and Gunstone (1999, as cited in Saxena, 2017) that the implementation of Information Technology and Communication in [Science and mathematics] education can help improve students' problem-solving skills, theoretical understanding, and group productivity skills. In totality, teachers' technological, pedagogical, and content knowledge will eventually promote higher learning and instruction.

These accounts suggest that pre-service teachers' rejoinders relate to the importance of developing technological pedagogical content knowledge while still in the teacher training institutions and other professional development programs where they can assess and conduct self-evaluation of their TPACK competence. Furthermore, these studies address teachers of teacher education institutions to practice or model the use of technology in their teaching.

Further, the established gap in this study is based on Can et al. (2017) recommendation to carry out studies focusing on TPACK of the faculties of education. As faculty teaching in the teacher education programs in the university, teachers must serve as role models in the use of technology and how these technologies relate to pedagogy and its influence on the teaching performance of faculty.

ETCOR Educational Research Center PHILIPPINES
Sta. Ana, Pampanga, Philippines
INTERNATIONAL MULTIDISCIPLINARY RESEARCH CONFERENCE
Website: https://etcor.org
iJOINED ETCOR
P - ISSN 2984-7567
E - ISSN 2945-3577
The Exigency
P - ISSN 2984-7842
E - ISSN 1908-3181

Objective

The present study aimed to determine the perceived technological, pedagogical knowledge, and teaching performance of faculty members in the teacher education program of Eastern Samar State University- Guiuan. Specifically, it sought to answer the following questions:

1. How may the respondents be described in terms of the following variables:
    1.1. technological knowledge;
    1.2. pedagogical knowledge; and
    1.3. teaching performance?
2. Is there a significant relationship between technological competence, pedagogical competence, and teaching performance?

Theoretical Framework

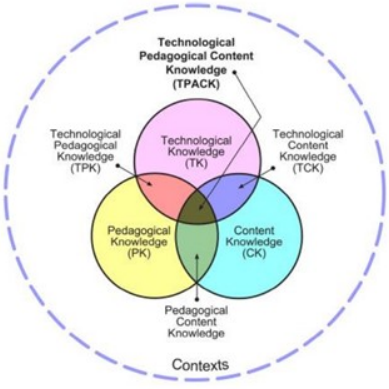
The TPACK framework serves as the theoretical underpinning of this study. It has three major core components of knowledge: content, pedagogy, and technology with the relationship among another knowledge. Thus, it describes the interrelatedness of the three core components of knowledge and other overlapping knowledge resulting in eight other knowledge components. The overlap in pedagogy, content, and technology knowledge with other knowledge structures gave and illustrated the relationships among PCK (pedagogical content knowledge), TCK (technological content knowledge), and TPK (Technological pedagogical knowledge) structures as depicted in figure 1. With regards to this investigation, the focus is to look into the TK (technological knowledge), PK (pedagogical knowledge), and CK (content knowledge) of teacher education faculty.

Pedagogical knowledge (PK) refers to "teachers' deep knowledge about the processes and practices or methods of teaching and learning" (Mishra & Koehler, 2006, p. 64). The authors shared their ideas in which pedagogical knowledge involves the knowledge of techniques and strategies to be used in the classroom, the nature of learners, and strategies in evaluating student understanding (Mishra & Koehler, 2006).

Technological Knowledge (TK) is knowledge about standard technologies such as books, chalk, and blackboard, and other advanced technologies such as the internet, digital videos, and other soft wares (Mishra & Koehler, 2006). Can et al. (2017) posited that technological knowledge denotes the use of information technology, hardware, software, and tools. This knowledge construct also pertains to the competence of an individual towards technology manipulation. In this context, technological knowledge is significant in using many ICT resources and materials available for instruction, mainly science education. Such knowledge would help learners deepen their skills and enhance science teaching in developing 21st-century skills since ICT would help learners and teachers to serve as a thinking tool in the teaching and learning context.

Figure 1

The TPACK framework and its knowledge structures (Koehler & Mishra, 2009, p. 63)



Conceptual Framework

In this study, the researcher investigated the perceived technological, pedagogical knowledge, and teaching performance of faculty members in the teacher education program of Eastern Samar State University- Guiuan. Figure 2 illustrates the paradigm which utilizes the independent variable and dependent variable (IV-DV) model. As shown,

ETCOR Educational Research Center PHILIPPINES
Sta. Ana, Pampanga, Philippines
INTERNATIONAL MULTIDISCIPLINARY RESEARCH CONFERENCE
Google Scholar
Website: https://etcor.org
iJOINED ETCOR
P - ISSN 2984-7567
E - ISSN 2945-3577
The Exigency
P - ISSN 2984-7842
E - ISSN 1908-3181

the independent variables include the technological and pedagogical knowledge of teacher education faculty. On the other hand, the dependent variable of this study is the teaching performance of the faculty.

Figure 2
The Research Paradigm

METHODS

Research Design

This research employed a quantitative design to answer the research questions raised in this study. Moreover, the researcher in quantitative research "identifies a research problem based on trends in the field or on the need to explain why something occurs," as Creswell (2012) added. This research design would help the researcher determine the technological and pedagogical knowledge and its influence on faculty members' teaching performance, which requires in-depth analysis and quantitative interpretation of the perceived problem.

Participants and Sampling Procedure

The study involved a total of thirty-two (32) faculty of the teacher education program during the academic year 2022- 2023. As inclusion criteria, the teacher respondents should be handling and teaching different subjects (courses) in the teacher education program regardless of their specializations. Both plantilla and non-plantilla faculty were included as respondents. On the other hand, as an exclusion criterion, teacher participants who were not teaching in the college during the conduct of this study were excluded. The respondents were selected through total population sampling. Total population sampling is a purposive method that examines the entire population with a particular set of characteristics (dissertation.laerd.com/total-population-sampling.php). In this context, the teacher respondents share similar characteristics since they all teach in the teacher education program.

Instrumentation

An adapted and modified questionnaire from Hosseini and Kamal (2012) in their study "Developing an Instrument to Measure Perceived Technology Integration Knowledge of Teachers" was used to investigate faculty members' perceived technological and pedagogical knowledge. Further, to determine the teaching performance of the faculty members, a walk-through class observation was conducted using the adapted classroom observation tool of the university. The walk-through observation was conducted to ensure the reliability and validity of the observation performed.

Ethical Consideration

The selection of subjects was made through the willingness of the respondents to voluntarily engage in the conduct of the study. To ensure the safety and rights of the possible participants, informed consent, voluntary participation, rights of participants, anonymity, and confidentiality were considered (Chigona et al., 2010).

Treatment of Data

To give meaning to the problems, objectives and questions posed in this study, data obtained was consolidated, organized, and tabulated. The perceptions of faculty members on their technological and pedagogical knowledge, means and weighted means were utilized. The actual mean scores of faculty teaching performance were

ETCOR Educational Research Center PHILIPPINES
Sta. Ana, Pampanga, Philippines
INTERNATIONAL MULTIDISCIPLINARY RESEARCH CONFERENCE
Website: https://etcor.org
iJOINED ETCOR
P - ISSN 2984-7567
E - ISSN 2945-3577
The Exigency
P - ISSN 2984-7842
E - ISSN 1908-3181

used. Pearson's Correlation coefficient was employed as the most appropriate statistical tool to determine the relationship between and among the studied variables.

RESULTS and DISCUSSION

This section presents the data, analyses, and interpretation of the results of this study. This study dealt with the faculty's technological and pedagogical knowledge and its influence on teaching performance.

Table 1
Mean Scores of Faculty Responses on Technological Knowledge

	Indicators	Mean	Description	Interpretation
1.	I know how to solve my own technical problems	3.82	Often	MK
2.	I can learn technology easily	3.64	Often	MK
3.	I keep up with important new technologies	3.82	Often	MK
4.	I frequently play around the technology.	5.00	Always	HK
5.	I know about a lot of different technologies.	4.43	Often	MK
6.	I have the technical skills I need to use technology.	3.73	Often	MK
7.	I have had sufficient opportunities to work with different technologies.	4.27	Often	MK
8.	I can use technology tools to process data and report results.	4.18	Often	MK
9.	I can use technology in the development of strategies for solving problems in the real world.	3.27	Sometimes	SK
10.	I have ability to design webpages and to use authoring software	2.36	Rarely	LK
11.	I understand the legal, ethical, cultural, and societal issues related to technology	4.45	Often	MK
	Mean	3.37	Often	MK

Legend: MK – Moderately Knowledgeable, HK- Highly Knowledgeable, SK- Slightly Knowledgeable, LK- Least Knowledgeable

Table 1 shows the mean scores of faculty members' responses on technological knowledge. Based on the table, teachers are often competent in technology based on the obtained mean score of 3.37. Among the indicators, indicator 4 got the highest mean score of 5.00, where teachers always play around with technology. On the other hand, most of the indicators got an "often" interpretation, which means that the faculty are often competent in these indicators. One is the technical skills they need to use and having sufficient opportunities to work with different technologies, with a mean score of 3.73 and 4.27, respectively. On the other hand, the indicator "I have the ability to design webpages and t us authoring software" got the lowest mean score of 2.36, which was then interpreted as rare.

It implies that the teacher education program faculty are often competent in using technology in their instruction. Further, based on the revealed results, there is a need for the faculty members to undergo training and workshops relative to technology use and technology competence in order for them to teach the pre-service teachers the use of technology in learning instruction. Further, as stated in section 6.2e of CHED memo no 75 series of 2017, graduates of teacher education programs are expected to "apply skills in the development and utilization of ICT effectively to promote quality, relevant and educational practices."

Further, this trend in educational technology is also supported in the Philippine Professional Standards for Teachers (PPST) per Department Order No. 42, series of 2017, where teaching and learning resources, including ICT, are observed. Educators continue to provide a learning environment that encourages significant classroom interactions towards high learning standards through technology and being technologically competent. The idea of technology competence boils down to how teachers would help learners hone their skills through technology. Mishra and Koehler (2006) chronicled that technical knowledge is about standard technologies such as books, chalks, blackboards, and other advanced technologies such as the internet, digital videos, and other software. Can et al.

ETCOR Educational Research Center PHILIPPINES
Sta. Ana, Pampanga, Philippines
INTERNATIONAL MULTIDISCIPLINARY RESEARCH CONFERENCE
Google Scholar
Website: https://etcor.org
ISSN
iJOINED ETCOR
P - ISSN 2984-7567
E - ISSN 2945-3577
The Exigency
P - ISSN 2984-7842
E - ISSN 1908-3181

(2017) posit that technical knowledge and competence denote information technology, hardware, software, and tools use.

Moreover, there are other studies that support the current findings, such as the study of Al-Ammary (2012), as cited in Galleto and Pangilinan (2018) which narrated that many educators perceived technology as a tool for enhancing the presentation of material for making lessons more fun for the students and for making administration more efficient. Aside from in-service teachers, the findings of Apau (2017) and of Sanchez, et al. (2022) showed that even prospective teachers should be ready to learn new emerging technologies. However, it was also reported that teachers need to learn more about technological elements and cannot keep up with new technologies (Owusu, 2014; Roig-Vila et al., 2015, as cited in Apau, 2017).

Table 2
Mean Scores of Faculty Responses on Pedagogical Knowledge

	Indicators	Mean	Description	Interpretation
1.	I know how to assess student performance in a classroom.	5.00	Always	HK
2.	I can adapt my teaching based on what students currently understand or do not understand.	4.60	Always	HK
3.	I can use a wide range of teaching approaches in a classroom setting (collaborative learning, direct instruction, inquiry learning, problem/project-based learning etc.).	4.30	Often	MK
4.	I am familiar with common student understandings and misconceptions	5.00	Always	HK
5.	I know how to organize and maintain classroom management.	5.00	Always	HK
6.	I can assess student learning in multiple ways.	5.00	Always	HK
7.	I can adapt my teaching style to different learners.	5.00	Always	HK
8.	I know how to select effective teaching approaches to guide student thinking and learning	4.20	Often	MK
9.	I am able to manage my students' learning about (the particular content).	3.60	Often	MK
10.	I know instructional strategies that are suitable for the topic (content).	3.90	Often	MK
	Mean	4.56	Always	HK

Legend: MK – Moderately Knowledgeable, HK- Highly Knowledgeable

Table 2 shows the mean scores of teachers' pedagogical knowledge. It reveals that teachers in the teacher education program are always competent regarding their pedagogical knowledge, with a mean score of 4.43. Among the indicators, item 1, "I know how to assess student performance in a classroom," item 4, "am familiar with common student understandings and misconceptions," item 5, "I know how to organize and maintain classroom management," item 6, "I can assess student learning in multiple ways," and item 7, "can adapt my teaching style to different learners" are typically perceived by teachers that they are typically always competent when it comes to these indicators on pedagogical competence with a mean score of 5.00 respectively. On the other hand, items 3, 4, 8, 9, and 10 got a homogenous response from the respondents.

One of the essential aspects to consider in classroom instruction is how teachers can utilize pedagogy in their specific classroom teaching and learning activities (Sanchez, Sanchez & Sanchez, 2023). Teachers perform their duties and employ and develop teaching strategies and techniques that will help pre-service teachers become more acquainted and exposed to various pedagogical influences. Further, the results of this study also show that teachers are often competent regarding pedagogy. Thus, they can cater to every learner's needs excitingly and effectively. Teachers can manage and control classroom activities and establish a conducive learning environment with their competence. It suggests teachers' capability to adapt to situations they think would help their teaching effectively and the student's learning to be productive. This capability is called for even in various industries (Sanchez, 2022), and should also be given attention in the field of education for the ultimate benefits of the learners.

Accordingly, teachers need to be experts in using appropriate methods and processes of teaching (Malubay & Daguplo, 2018). The work of Tanner (2018), as cited in Gonzales (2018) mentioned that it is essential to utilize

ETCOR Educational Research Center PHILIPPINES
Sta. Ana, Pampanga, Philippines
INTERNATIONAL MULTIDISCIPLINARY RESEARCH CONFERENCE
Website: https://etcor.org
iJOINED ETCOR
P - ISSN 2984-7567
E - ISSN 2945-3577
The Exigency
P - ISSN 2984-7842
E - ISSN 1908-3181

various strategies in teaching because "if a teacher chooses a singular approach like lecturing or concept-mapping, regardless of the nature of the approach, it could result in the alienation and exclusion from learning of a subpopulation of students." Further, Luna and Aclan (2015) added that when teachers are competent in the subject matter, they can also be competent in pedagogy if they have undergone appropriate training to be skilled in pedagogy and content.

Table 3
Mean Scores of Faculty Teaching Performance

Indicators	Mean	Interpretation
1. Knowledge of the subject matter	4.80	Outstanding
2. Methodology and teaching strategies	4.55	Outstanding
3. Other qualities	4.44	Very Satisfactory
Mean	4.60	Outstanding

Table 3 shows the mean scores of faculty members on teaching performance. The results revealed that faculty members are outstanding in teaching performance, as observed from the mean score of 4.60. Moreover, knowledge of the subject matter got the highest mean score of 4.80 and is classified as outstanding. Teachers' performance regarding methodology and teaching strategies, as well as other qualities, got a mean score of 4.55 and 4.44, respectively.

The results imply that almost all of the faculty from the teacher education programs are outstanding regarding teaching performance. Such results may impact the development of the students towards content, pedagogy, and technology. It is expected that as the molder of pre-service teachers, knowledge of the subject matter is essential. Similarly, as faculty of the teacher education program, it is equally significant that when teaching pre-service teachers, application and demonstration of methodology and teaching strategies has equal bearing as to the subject matter mastery. In like manner, other qualities of a teacher, such as the use of language in instruction, voice and correct diction and pronunciation, composure, and self-confidence, are also good indicators that teachers have to be mindful of so that role modeling may happen.

With these results, teachers must be knowledgeable of the content or subject matter they will be teaching to share the knowledge and correct certain misconceptions about specific concepts or topics. Findings suggest that teachers' content knowledge requires preparation to be competent and knowledgeable concerning content areas to deepen learners' skills. Such a reason eludes students from receiving incorrect information and developing misconceptions about the subject matter (Apau, 2017). Continued professional education is advantageous when providing pedagogical resources. Teachers who continuously submit themselves to further education become a strong pillar in the educational system. Further, Luna and Aclan (2015) added that when teachers are competent in the subject matter, they can also be competent in pedagogy if they have undergone appropriate training for teachers to be skilled in pedagogy and content.

Table 4
Correlation Between and Among Technology Competence, Pedagogical Competence and Teaching Performance

Variables	Correlation coefficient	p-value
Technology Competence and Pedagogical Competence	0.505**	0.004
Technology Competence and Teaching Performance	0.53^{NS}	0.783
Pedagogical Competence and Teaching Performance	-0.46^{NS}	0.808

NS Correlation is not significant at the 0.01 level
**Correlation is significant at the 0.01 level (2-tailed)

Utilizing Pearson's correlation coefficient, the study showed a significant correlation between technology competence and pedagogical competence where r = 0.505 and a p-value of 0.004, highly correlated at 0.01 level. On the other hand, no significant correlation was observed between and among technology competence, pedagogical competence, and teaching performance, with r = 0.53, -0.46, and a p-value of 0.783 and 0.808, respectively.

ETCOR Educational Research Center PHILIPPINES
Sta. Ana, Pampanga, Philippines
INTERNATIONAL MULTIDISCIPLINARY RESEARCH CONFERENCE
Google Scholar
Website: https://etcor.org
ISSN
iJOINED ETCOR
P - ISSN 2984-7567
E - ISSN 2945-3577
The Exigency
P - ISSN 2984-7842
E - ISSN 1908-3181

The significant correlations implied that teachers from the teacher education programs are competent in the use of technology as well as pedagogy. Thus, technology must go with pedagogy during classroom instruction as the molder of future technology-savvy and pedagogy-oriented teachers. Moreover, based on the correlation data, teachers' technology and pedagogy competence have nothing to do with the teaching performance of the faculty. The result of this study indicates that faculty of the teacher education programs of the college of education are often competent when it comes to providing technology and using pedagogy in their classroom teaching and learning activities. However, despite the perceived competence in technology and pedagogy, the faculty members are outstanding in their teaching performance. Similarly, there is no significant relationship between technology competence, pedagogical competence, and faculty teaching performance.

Conclusion

The result of this study indicates that faculty of the teacher education programs are competent when it comes to providing technology and using pedagogy in their classroom teaching and learning activities. Moreover, teachers have an immense understanding of their technological and pedagogical knowledge. On the other hand, the teaching performance of the faculty members are not influenced by their technological knowledge and pedagogical knowledge. Educational technology, nowadays, is evolving. Teachers are becoming adaptive in addressing the necessities of every learner. Hence, requisites for every teacher to be technologically knowledgeable and competent in the use of ICT resources and how to integrate such concerning content as well as pedagogy are inevitable.

Recommendation

It is recommended that the teacher education programs continuously provide provisions on professional development for teachers on the use of technology-based instruction. As teachers continue to progress in their professional education, they can gain additional knowledge to address possible misconceptions and provide effective instruction. Hence, teachers believe in the significance of pursuing continuing professional education as it is a demand in becoming an effective and efficient teacher.

Acknowledgment

The researcher would like to acknowledge all the faculty members of the College of Education of the Eastern Samar State University-Guiuan Campus for the utmost participation in the conduct of this endeavor.

REFERENCES

Apau, S. K. (2017). Technological Pedagogical Content Knowledge Preparedness of Student-Teachers of the Department of Arts and Social Sciences Education of the University of Cape Coast. *Journal of Education and Practice, Vol. 8* (10). https://files.eric.ed.gov/fulltext/EJ1139820.pdf

Bate, F. G., Day, L., & Macnish, J. (2013). Conceptualizing Changes to Pre-Service Teachers' Knowledge of How to Best Facilitate Learning in Mathematics: A TPACK Inspired Initiative. *Australian Journal of Teacher Education, 38*(5), n5. https://files.eric.ed.gov/fulltext/EJ1014049.pdf

Can, B., Erokten, S., & Bahtiyar, A. (2017). An Investigation of Pre-Service Science Teachers' Technological Pedagogical Content Knowledge. *European Journal of Educational Research, 6*(1), 51-57. https://files.eric.ed.gov/fulltext/EJ1133804.pdf

Cengiz, C. (2015). The development of TPACK, technology integrated self-efficacy and instructional technology outcome expectations of pre-service physical education teachers. *Asia-Pacific Journal of Teacher Education, 43* (5) 411–422. http://dx.doi.org/10.1080/1359866X.2014.932332

CHED Memorandum Order No. 75 Series of 2017. (n.d.). Policies, Standards, and Guidelines for Bachelor of Secondary Education (BSEd). https://ched.gov.ph/wp-content/uploads/2017/11/CMO-No.-75-s.-2017.pdf

Chigona, A., Chigona, W., Kausa, M., & Kayongo, P. (2010). An empirical survey on domestication of ICT in schools in disadvantaged communities in South Africa. *International Journal of Education and Development Using Information and Communication Technology, 6*(2), 21-32.

ETCOR Educational Research Center PHILIPPINES
Sta. Ana, Pampanga, Philippines
INTERNATIONAL MULTIDISCIPLINARY RESEARCH CONFERENCE
Google Scholar
Website: https://etcor.org
ISSN
iJOINED ETCOR
P - ISSN 2984-7567
E - ISSN 2945-3577
The Exigency
P - ISSN 2984-7842
E - ISSN 1908-3181

Creswell, J. W. (2012). Educational Research: Planning, Conducting and Evaluating Quantitative and Qualitative Research, 4th Edition. Pearson

Dizon, E. C., & Sanchez, R. D. (2020). Improving select grade 7 Filipino students' reading performance using the eclectic model. *Journal of World Englishes and Educational Practices,* 2(2), 216-221.

DO 42, s. 2017. National adoption and implementation of the Philippine professional standards for teachers. https://www.deped.gov.ph/2017/08/11/do-42-s-2017-national-adoption-and-implementation-of-the-philippine-professional-standards-for-teachers/

Ersanli, C. Y. (2016). Improving technological pedagogical content knowledge (TPACK) of pre-service English language teachers. *International Education Studies, 9*(5), 18. https://files.eric.ed.gov/fulltext/EJ1098929.pdf

Galleto, P. G., & Pangilinan, N. B. (2018). Diagnosing Technological Pedagogical Content Knowledge Landscape: The Case of the Mathematics Teachers in Government-Funded University. *International Journal of Scientific Research and Education, 6*(7), 7994-8002.

Ghavifekr, S., Kunjappan, T., Ramasamy, L., & Anthony, A. (2016). Teaching and Learning with ICT Tools: Issues and Challenges from Teachers' Perceptions. *Malaysian Online Journal of Educational Technology, 4*(2), 38-57. https://files.eric.ed.gov/fulltext/EJ1096028.pdf

Gonzales, A. L. (2018). Exploring technological, pedagogical, and content knowledge (TPACK) and self-efficacy belief of senior high school biology teachers in Batangas City. *Palawan Scientist, 10*, 29-47. http://www.palawanscientist.org/tps/wp-content/uploads/2018/07/3_Gonzales_-Palawan-Scientist_2018.pdf

Hosseini, Z., & Kamal, A. (2012). Developing an instrument to measure perceived technology integration knowledge of teachers. In Proceedings of International Conference of Advanced Information System, E-Education & Development (pp. 7-8). https://www.researchgate.net/publication/309493447_Developing_an_Instrument_to_Measure_Perceived_Technology_Integration_Knowledge_of_Teachers

Karaca, F. (2015). An investigation of pre-service teachers' technological pedagogical content knowledge based on a variety of characteristics. *International Journal of Higher Education, 4*(4), 128. https://files.eric.ed.gov/fulltext/EJ1077795.pdf

Kazu, I. Y., & Erten, P. (2014). Teachers' Technological Pedagogical Content Knowledge Self-Efficacies. *Journal of Education and Training Studies, 2*(2), 126-144. https://files.eric.ed.gov/fulltext/EJ1055505.pdf

Keçeci, G., & Zengin, F. K. (2017). Observing the technological pedagogical and content knowledge levels of science teacher candidates. *Educational Research and Reviews, 12*(24), 1178-1187. https://files.eric.ed.gov/fulltext/EJ1164648.pdf

Koehler, M., & Mishra, P. (2009). What is technological pedagogical content knowledge (TPACK)?. *Contemporary Issues in Technology and Teacher Education, 9*(1), 60- 70.

Koehler, M. J., Mishra, P., & Cain, W. (2013). What is technological pedagogical content knowledge (TPACK)?. *Journal of Education, 193*(3), 13-19. http://www.bu.edu/journalofeducation/files/2014/02/BUJoE.193.3.Koehleretal.pdf

Liu, S. H., Tsai, H. C., & Huang, Y. T. (2015). Collaborative professional development of mentor teachers and pre-service teachers in relation to technology integration. *Educational Technology & Society, 18*(3), 161-172. https://pdfs.semanticscholar.org/5ec4/232935a6c89c6b88b88d1446c372b2f2153d.pdf

ETCOR Educational Research Center PHILIPPINES
Sta. Ana, Pampanga, Philippines
INTERNATIONAL MULTIDISCIPLINARY RESEARCH CONFERENCE
Website: https://etcor.org
iJOINED ETCOR P - ISSN 2984-7567 E - ISSN 2945-3577
The Exigency P - ISSN 2984-7842 E - ISSN 1908-3181

Luna, C. A., & Aclan, E. G. (2015). The influence of teachers' mathematics pedagogy content knowledge training on pupils' mathematics achievement. *American Journal of Educational Research, 3*(10), 1311-4. DOI:10.12691/education-3-10-16. http://pubs.sciepub.com/education/3/10/16/

Malubay, J., & Daguplo, M. S. (2018). Characterizing mathematics teachers' technological pedagogical content knowledge. *European Journal of Education Studies, 4*(1), 199- 219. https://doi: 10.5281/zenodo.1160586

Mishra, P., & Koehler, M. J. (2006). Technological pedagogical content knowledge: A framework for teacher knowledge. *Teachers College Record, 108*(6), 1017-1054. https://doi: 10.1111/j.1467-9620.2006. 00684.x

Muńoz, M. C., & Sanchez, R. D. (2023). Exploring Fernandino Teens TV as a supplementary learning delivery modality: Opportunities and challenges from the lens of select learners. *International Journal of Open-access, Interdisciplinary and New Educational Discoveries of ETCOR Educational Research Center (iJOINED ETCOR)*, 2(1), 358-374.

Sanchez, A. M. P. (2022). HR practitioners' perceptions on boosting employees' loyalty and commitment: Inputs for a 21st century-responsive human resource system. *International Journal of Open-access, Interdisciplinary and New Educational Discoveries of ETCOR Educational Research Center (iJOINED ETCOR)*, 1(4), 89-102.

Sanchez, R. (2023). Utilization of the daily lesson logs: An evaluation employing the CIPP model. *International Journal of Open-access, Interdisciplinary and New Educational Discoveries of ETCOR Educational Research Center (iJOINED ETCOR)*, 2(1), 199-215.

Sanchez, R. D. (2023). Unveiling the moral-theological foundations of the nullity of marriage due to psychological incapacity. *International Journal of Open-access, Interdisciplinary and New Educational Discoveries of ETCOR Educational Research Center (iJOINED ETCOR)*, 2(1), 397-404.

Sanchez, R., & Sarmiento, P. J. (2020). Learning together hand-in-hand: An assessment of students' immersion program in a schools division. *International Journal of Research Studies in Education*, 9(1), 85-97.

Sanchez, R., Sarmiento, P. J., Pangilinan, A., Guinto, N., Sanchez, A. M., & Sanchez, J. J. (2022). In the name of authentic public service: A descriptive phenomenological study on the lives of Filipino teachers in select coastal villages. *International Journal of Open-access, Interdisciplinary and New Educational Discoveries of ETCOR Educational Research Center (iJOINED ETCOR)*, 1(1), 35-44.

Sanchez, R. D., Sanchez, A. M. P., & Sanchez, J. J. D. (2023). Delving into the Integration of Research Subjects in the Junior High School Curriculum from the Learners' Point of View. *International Journal of Open-access, Interdisciplinary and New Educational Discoveries of ETCOR Educational Research Center (iJOINED ETCOR)*, 2(1), 432-442.

Saxena, A. (2017). Issues and impediments faced by Canadian teachers while integrating ICT in pedagogical practice. *Turkish Online Journal of Educational Technology-TOJET, 16*(2), 58-70. https://files.eric.ed.gov/fulltext/EJ1137791.pdf

Scrabis-Fletcher, K., Juniu, S., & Zullo, E. (2016). Pre-service Physical Education Teachers' Technological Pedagogical Content Knowledge. *Physical Educator, 73*(4), 704. https://doi.org/10.18666/TPE-2016-V73-I4-6818

Total population sampling, (n.d.). Total population sampling. https://dissertation.laerd.com/total-population-sampling.php