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Research Article

21st Century Technological Pedagogical Content Knowledge (TPACK) Level Among English Language Educators: A Pilot Study

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Abstract

Today, the role of technology in education is so crucial, that educators can no longer use the traditional method of teaching (chalk and talk method), but they have to integrate technology in their teaching. Not only that, but they are also required to teach and equip students with 21st century skills, on top of teaching their subject matter. Therefore, educators need to prepare themselves with sufficient technological pedagogical content knowledge (TPACK). In this pilot study, the purpose was to determine the level of 21st century TPACK among English language educators in Malaysia. This was a quantitative descriptive study which involved 30 respondents who were selected through two-stage cluster sampling technique. Based on the results of the study, it was found that the respondents scored themselves the highest on the pedagogical content knowledge (PCK). Meanwhile, they scored themselves the lowest on the technological knowledge (TK) and technological content knowledge (TCK) domains. In general, their score on the overall 21st century TPACK domain was moderate.

Keywords: English language, TPACK, 21st century education, 21st century TPACK.

1. Introduction

Education has since evolved accordingly following the Industrial Revolutions. As the world embraces the evolvement of the 21st century, education is also affected greatly with the rapid development of technology. Educators today are not only required to impart knowledge to students, but also to integrate technology while teaching. On top of that, educators are also required to equip and teach students with 21st century skills that would help them to develop themselves into well-rounded, well-balanced, and holistic learners. Therefore, it could be concluded that teaching nowadays is more complicated than before, especially with technology in the mix.

"The process integrating the technology with education is complex and multidirectional" [1]. This statement is true as there are a lot of aspects that an educator has to think through before integrating technology in their teaching. There are a lot of educational technological tools, software, and frameworks to help teachers to integrate technology in teaching and learning sessions. Among the most familiar and well-known framework is the Technological Pedagogical Content Knowledge (TPACK) framework, which was introduced by [2] as they expanded this framework from [3], originally known as Pedagogical Content Knowledge (PCK) framework. The TPACK framework will be discussed in detail in the literature review section.

Malaysia is currently embracing and developing towards the Fourth Industrial Revolution (4IR), realizing its importance economically, politically, and socially. The Ministry of Education specifically is taking this advantage to further improve the education scenario in Malaysia to ensure that students are not left out and are updated in their learning. When it comes to technology in learning, the ministry is keen to improve the Information and Communications

Technology (ICT) facilities in schools. As stated in the Malaysian Education Blueprint 2013 – 2025, the ministry will leverage ICT in schools to upgrade the quality of learning across Malaysia by providing access of internet and virtual learning to all schools, implementing online content sharing of best teaching practices among teachers, and expanding access to high quality teaching by maximising the use of ICT [4].

However, even though the MoE has plans to upgrade and improve the use of ICT in schools, there is no specific technology-integrated framework included in the education policy [5]. This would mean that the Ministry is not restricting the use of any framework that would help to improve the integration of teaching and learning in Malaysia. Therefore, this study focused on the TPACK framework by Mishra and Koehler to further understand the educators' ability in integrating technology in the classroom.

There were a number of studies conducted regarding TPACK level among educators in Malaysia [5], [6], [7], [8], [9], [10], however these studies mostly involved pre-service teachers, validity and reliability of TPACK instruments, and the implementation of TPACK framework in teaching and learning. There is a scarcity in the studies of 21st century TPACK level among English language educators in Malaysia, especially involving the in-service teachers. It is imperative to figure out how the English language educators rate their ability in integrating 21st century and technology based on the TPACK framework. Thus, the purpose of this pilot study was to determine the educators' level of 21st century TPACK in teaching the English language as a second language.

2. Literature Review

This section will discuss thoroughly on the TPACK framework by [2], as it guided this pilot study. As mentioned before, the TPACK framework was expanded by Mishra and Koehler from the original framework of PCK by [3]. According to [3], teachers need to know not only the content of a subject, but they need to be able to manipulate and interpret the content in ways that students will be able to understand and access the content easily. As technology becomes an increasingly important element in education, Mishra and Koehler expanded the framework to include technology.

The TPACK Framework

It is said that it is not easy to develop a theory integrating technology and education, as there are various factors that could affect the process of integrating technology such as the ability of students, educators, technology facilities, and others [2]. This is true as in a classroom, students come from different socioeconomic backgrounds, technology facilities in a school might not be sufficient, and educators might not be capable enough to adapt these changes in the teaching process. Educators cannot change the students' socioeconomic background, and to upgrade and improve the technology facilities in a school or institution would take a complicated and long process. However, an educator is able to control the teaching knowledge and methodology, and this is the part where the TPACK framework plays its role.

According to [11], TPACK is a framework that describes the interaction of educational technologies and pedagogical content knowledge (PCK) with one another in order to help educators to teach effectively with technology. There are seven domains in the TPACK framework and they are: technological knowledge (TK), content knowledge (CK), pedagogical knowledge (PK), pedagogical content knowledge (PCK), technological content knowledge (TCK), technological pedagogical knowledge (TPK), and technological pedagogical content knowledge (TPACK) domains. All of these domains are interrelated to each other, as shown in the figure below:

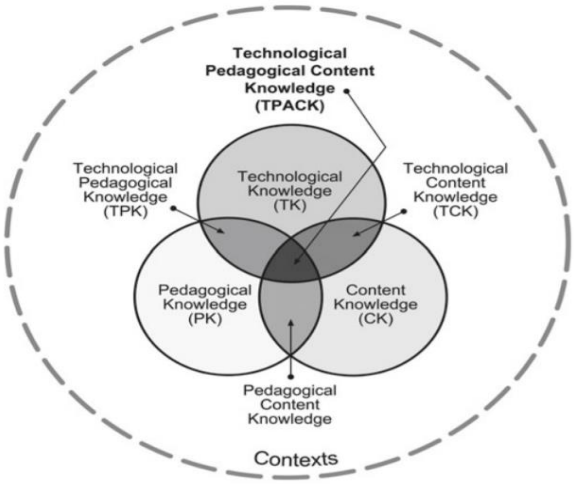

Fig. 1: Technological pedagogical content knowledge framework. Adapted from Koehler, M. J., Mishra, P., Kereluik, K., Shin, T. S., & Graham, C. R. (2014). The technological pedagogical content knowledge framework. In *Handbook of Research on Educational Communications and Technology: Fourth Edition* (pp. 101-111). Springer New York. https://doi.org/10.1007/978-1-4614-3185-5_9

Koehler et al. (2014) further explained in their article regarding each domain listed in the figure above:

1. Content Knowledge (CK): the knowledge of content of a subject matter that an educator possesses and is responsible to teach.
2. Pedagogical Knowledge (PK): the knowledge of methodologies, methods, techniques, strategies, and instructional practices that an educator possesses to teach in a classroom.
3. Technological Knowledge (TK): the knowledge regarding technology (either traditional or modern) that an educator can use while teaching.
4. Pedagogical Content Knowledge (PCK): the knowledge that an educator possesses on how to interpret, organize, and present the contents of a subject matter to students in understandable ways.
5. Technological Content Knowledge (TCK): the knowledge of relationship between technology and content that an educator possesses.
6. Technological Pedagogical Knowledge (TPK): the knowledge that an educator possesses regarding technology, and how it can restrict or support the educator's instructional practices and teaching pedagogies.
7. Technological Pedagogical Content Knowledge (TPACK): the knowledge that an educator possesses regarding the relationship among technology, content, and pedagogy in order to develop suitable and appropriate instructional practices in the classroom.

From the explanations above, it is understood that educational technology does not stand on its own; rather it is intricately related with the educators' TK, CK, PK, and PCK, and they move together as a whole. It is insufficient for an educator to only know how to use technology. Today, students are also able to use technology and at times they might be more advanced than their educators, especially when it comes to digital technology. However, students might or might not have the ability to use the technology to assist their learning. Therefore, this is the part where the educators need to know how to operate and use the said technology, as well as know how to operate, manipulate, and utilize them to teach the content of a subject matter to students effectively.

The 21st Century TPACK Framework

The TPACK framework above is limited to the knowledge of a subject matter that an educator has to teach. However, over the years, teaching and learning is no longer limited to knowing the contents of a subject matter. Recently, the education field places a lot of emphasis on developing students' 21st century skills such as communication skills, collaboration skills, critical and creative thinking skills, and many more. Therefore, the TPACK framework alone is not sufficient to support the 21st century teaching and learning.

Today, it is vital to develop a framework that can support both educational technology and 21st century teaching and learning [13], as the educators' responsibilities are becoming more complicated. Without an updated TPACK framework, educators might find it difficult to combine both educational technology and 21st century skills teaching and learning. Frameworks are needed by the educators to assist them in the teaching process, such as to develop materials and instructional strategies. From these frameworks, policy makers will then be able to create plans and guidelines for educators to refer to when they teach in the classroom.

[13] conducted a study to update the TPACK measurement instrument to fit the 21st century teaching and learning, which involved pre-service teachers. In this study, they employed the Confirmatory Factor Analysis (CFA) and found a strong factorial structure which showed that their TPACK-21 instrument was valid and reliable. They also found that the "Correlations between latent TPACK-21 elements aligned with the assumed TPACK framework" (p. 23). These results have influenced the researcher of the current study to further investigate the effectiveness of the 21st century TPACK instrument. Hence, this pilot study adapted some items from the TPACK-21 instrument to develop a new 21st century TPACK instrument that was suited to English language subject.

3. Research Methodology

To conduct this pilot study, a quantitative research was conducted to achieve the objectives of the study. The quantitative research involves collecting numerical data, which are then analysed statistically [14]. Specifically, this study chose survey research design to answer the research questions listed above. This research design was chosen due to its characteristics of collecting data from a sample of population, allowing a researcher to ask questions and use the answers as data which would then help to describe the characteristics of the population studied [15].

The population of this pilot study was English language educators in Malaysia. A sample size of 30 respondents was successfully gathered to take part in this survey research. As stated in the statement of problem above, there is a lack of studies conducted on English language educators' TPACK, hence the reason that they were chosen to be the population of this study. Teaching language provides them with a lot of opportunities to incorporate technology in their teaching and learning sessions.

The target population in this study involved a very wide area and a big size of population. Therefore, a probability sampling procedure was selected to be employed. As the target population size is big, thus it was not possible to get the list of all English language educators' names. Therefore, this pilot study employed the two-stage cluster sampling technique to gather the respondents to overcome this issue [14]. In one particular district in Selangor, there are 48 secondary school altogether. From these 48 schools, 10 schools were included, and 3 English language educators from each school were chosen to participate in the survey.

Instrumentation is an important part in a study, as it is the whole preparation process of collecting data [15]. Since this was a survey design study, a self-assessed questionnaire was employed to gather the data needed. The questionnaire was adapted from two studies, which were from [16] and [13]. The items in the questionnaire were developed accordingly to help this study to answer the research questions. Afterwards, the questionnaire was referred to subject matter experts for face and content validity. After receiving some feedbacks from the experts, the questionnaire items were then amended accordingly.

To ensure the questionnaire was reliable before the conduct of the pilot study, a reliability test was performed. [14] explained that reliability in a quantitative research means that all items in a questionnaire are capable to measure concepts consistently, which is also known as reliability of internal consistency. Therefore, to measure the internal consistency reliability of the 21st century TPACK questionnaire in this study, the Cronbach's Alpha internal consistency reliability test was performed accordingly. The result of the test is shown in the below table:

Table 1: Reliability Test Result

Cronbach's Alpha	N of Items
.988	34

Based on Table 1.1 shown, the overall internal consistency value of the 21st century TPACK developed was 0.988 for all 34 items in the questionnaire. This shows that the reliability for the questionnaire used in the pilot study is very high, hence it is reliable to be used as an instrument when the actual data collection is conducted. All 34 items will be utilized in the actual study later.

For the purpose of data analysis, this study utilized the Statistical Package for Social Sciences (SPSS) software to analyse the data gathered. The raw data were entered into the SPSS software, then they were analysed descriptively to answer the research question of this paper. The use of descriptive statistics analyses meant that the results were presented in means and standard deviations for each of the sections included in the questionnaire.

4. Findings And Data Analysis

The questionnaire in this pilot study consisted of seven sections altogether. The sections included were:

1. technological knowledge (TK),
2. content knowledge (CK),
3. pedagogical knowledge (PK),
4. pedagogical content knowledge (PCK),
5. technological pedagogical knowledge (TPK),
6. technological content knowledge (TCK), and
7. technological pedagogical content knowledge (TPACK).

The scale measurement used was the Likert Scale, as this scale measures the strength of an opinion or attitude [17]. In this study, the respondents had to rate their answers accordingly for each item from 1 to 7 (1 = strongly disagree, 7 = strongly agree). As the purpose of this paper is to determine the English language educators' level of 21st century TPACK in teaching English, the descriptive statistics analyses were conducted, and the results for each analysis were tabled accordingly.

English Language Educators' Technological Knowledge (TK) Level

The first section in the questionnaire measured the educators' TK level. This section consisted of five items, and the respondents rated their answers from the scales of 1 to 7 (as mentioned above). The results of the descriptive statistics analysis are as below:

Table 2: English Language Educators' TK Level

Items	Mean	SD
1) I can solve ICT related problems.	4.83	1.262
2) I am familiar with new technologies and their features.	4.70	1.179
3) I keep up with important new technologies.	4.60	1.163
4) I have the technical skills I need to use technology.	4.77	1.278
5) I know about a lot of different technologies.	4.43	1.331
Overall TK level	4.67	1.113

Table 2 shows the descriptive statistics results of the English language educators' TK level. Based on the table above, it shows that the highest mean score is 4.83 (SD = 1.262), which refers to item "I can solve ICT related problems". This is followed by the item "I have the technical skills I need to use technology", with a mean score value of 4.77 (SD = 1.278). On the other hand, the lowest mean score is 4.43 (SD = 1.331) which refers to item "I know about a lot of different technologies". The overall mean score for TK level among English language educators is 4.67 (SD = 1.113). This score indicates a moderate score, which means that the educators rated themselves as moderate in the technological knowledge.

English Language Educators' Content Knowledge (CK) Level

The second section of the questionnaire measured the educators' self-assessed CK level. This section contained five items as well, just like in the first section. The respondents had rated their answers accordingly from 1 to 7, and descriptive statistics analysis was performed. The results of the analysis are as per below table:

Table 3: English Language Educators' CK Level

Items	Mean	SD
6) I have sufficient knowledge in developing contents in English language subject.	5.10	1.322
7) I know the basic theories and concepts of English language subject.	5.13	1.358

8) I know the history and development of important theories in English language subject.	4.63	1.351
9) I am familiar with recent research in English language subject.	4.47	1.502
10) I have various ways and strategies of developing my understanding of English language subject.	5.07	1.311
Overall CK level	4.88	1.216

Table 3 above represents the English language educators' CK level as rated by the respondents. As seen in the table, the item "I know the basic theories and concepts of English language subject" has the highest mean score (M = 5.13, SD = 1.358), followed by the item "I have sufficient knowledge in developing contents in English language subject" (M = 5.10, SD = 1.322). Meanwhile, the item "I know the history and development of important theories in English language subject" has the lowest mean score, which is 4.63 (SD = 1.351). The overall mean score for the CK level is 4.88 (SD = 1.216). This score indicates a high moderate score, which means that the English language educators rated their CK level as highly moderate.

English Language Educators' Pedagogical Knowledge (PK) Level

Next, is the third section of the questionnaire, the pedagogical knowledge level among the educators. In this section, there were five items that respondents had to rate accordingly from 1 to 7. Descriptive statistics analysis was executed, and the results of the analysis are shown as follows:

Table 4: English Language Educators' PK Level

Items	Mean	SD
11) I know how to assess students' performance in a classroom.	5.30	1.236
12) I can adapt my teaching style to different learners.	5.17	1.117
13) I can assess students' learning in multiple ways.	5.40	1.329
14) I can use a wide range of teaching approaches in classroom setting.	5.17	1.367
15) I know how to organize and maintain classroom management.	5.10	1.494
Overall PK level	5.23	1.218

Table 4 above depicts the descriptive statistics results of the educators' pedagogical knowledge level. As shown in the table provided, the highest mean score is 5.40 (SD = 1.329), which refers to the item "I can assess students' learning in multiple ways". The second highest mean score is 5.30 (SD = 1.236) and this score refers to the item "I know how to assess students' performance in a classroom". In contrast, the item "I know how to organize and maintain classroom management" obtains the lowest mean score, which is 5.10 (SD = 1.494). The overall mean score of the PK level is 5.23 (SD = 1.218) and this score reveals a relatively high score. Therefore, this means that the respondents in this study rated their pedagogical level as relatively high.

English Language Educators' Pedagogical Content Knowledge (PCK) Level

The PCK level was the fourth section of the questionnaire in this study. Just like the other three sections, there were five items available that required responses from the respondents. The respondents rated their answers accordingly from the scales of 1 to 7. The results of the descriptive statistics analysis implemented are shown in the below table:

Table 5: English Language Educators' PCK Level

Items	Mean	SD
16) In teaching English language subject, I know how to guide students to communicate with each other.	5.37	1.426
17) In teaching English language subject, I know how to guide students' critical thinking.	5.10	1.242

18) In teaching English language subject, I know how to guide students to collaborate with each other in group work.	5.50	1.383
19) In teaching English language subject, I know how to guide students' creative thinking.	5.03	1.159
20) In teaching English language subject, I know how to guide students in learning values and ethics.	5.27	1.202
Overall PCK level	5.25	1.214

In Table 5 above, it the English language educators' pedagogical content knowledge level. The table reveals that the item "In teaching English language subject, I know how to guide students to collaborate with each other in group work" has the highest mean score (M = 5.50, SD = 1.383). This is then followed by the item "In teaching English language subject, I know how to guide students to communicate with each other" with a mean score of 5.37 (SD = 1.426). The item "In teaching English language subject, I know how to guide students' creative thinking" has the lowest mean score, which is 5.03 (SD = 1.159). The mean score for the overall PCK level is 5.25 (SD = 1.214), which is a relatively high score. The overall mean score value shows that, the English language educators scored themselves as relatively high in the pedagogical content knowledge.

English Language Educators' Technological Pedagogical Knowledge (TPK) Level

In the fifth section of the questionnaire, it measured the educators' level of TPK. This section was also comprised of five items that the respondents had to rate from a scale of 1 to 7. To analyse the data, a descriptive statistics analysis was conducted, and the results are as per below:

Table 6: English Language Educators' TPK Level

Items	Mean	SD
21) I know how to use ICT in teaching as a tool to stimulate students' critical thinking.	5.00	1.232
22) I know how to use ICT in teaching as a tool to stimulate students' creative thinking.	5.00	1.114
23) I know how to use ICT in teaching as a tool for students to collaborate with each other.	5.07	1.363
24) I know how to use ICT in teaching as a tool for students to communicate.	5.17	1.392
25) I know how to use ICT in teaching as a tool to teach values and ethics to students.	5.03	1.217
Overall TPK level	5.05	1.180

Based on Table 6 above, it depicts the technological pedagogical level among the English language educators as rated by the respondents. The table shows that the highest mean score obtained is 5.17 (SD = 1.392). This mean score refers to the item "I know how to use ICT in teaching as a tool for students to communicate" while the item "I know how to use ICT in teaching as a tool for students to collaborate with each other" has the second highest mean score value, which is 5.07 (SD = 1.363). On the contrary, the lowest mean score value is obtained by the items "I know how to use ICT in teaching as a tool to stimulate students' critical thinking" (M = 5.00, SD = 1.232) and "I know how to use ICT in teaching as a tool to stimulate students' creative thinking" (M = 5.00, SD = 1.114). The overall mean score for this section is 5.05 (SD = 1.217), which is a relatively high mean score. This means that for the technological pedagogical level in teaching, the English language educators rated their level as relatively high.

English Language Educators' Technological Content Knowledge (TCK) Level

The next section included in the questionnaire was the technological content knowledge level. Different from other sections, this section only involved four items for the respondents to respond and rate. To obtain the mean score values for all items, the descriptive statistics analysis was once again employed. The results are shown as per below:

Table 7: English Language Educators' TCK Level

Items	Mean	SD
26) I know websites with online materials for teaching English language subjects and 21st century skills.	4.90	1.348
27) I know ICT-applications which are used by professionals in teaching English language subjects and 21st century skills.	4.57	1.223
28) I know ICT applications which I can use to better understand the contents of English language subjects and 21st century skills.	4.67	1.295
29) I know which technologies I can use to illustrate difficult contents in teaching English language subjects and 21st century skills.	4.57	1.278
Overall TCK level	4.68	1.173

Table 7 above describes the English language educators' TCK level as rated by the respondents. Based on the table, the highest mean score is 4.90 (SD = 1.348) which refers to the item "I know websites with online materials for teaching English language subjects and 21st century skills". This is followed by the second highest mean score, which is obtained by the item "I know ICT applications which I can use to better understand the contents of English language subjects and 21st century skills" (M = 4.67, SD = 1.295). Meanwhile, the items "I know ICT-applications which are used by professionals in teaching English language subjects and 21st century skills" and "I know which technologies I can use to illustrate difficult contents in teaching English language subjects and 21st century skills" both get the lowest mean score, which is 4.57 (SD = 1.223 and 1.278 respectively). In this section, the overall mean score is 4.68 (SD = 1.173) which shows that it is a moderate score. This means that for technological content knowledge level, the respondents rated their level as moderate.

English Language Educators' Technological Pedagogical Content Knowledge (TPACK) Level

Lastly is the seventh section in the questionnaire, which was the TPACK level section. In this section, there were five items included for the respondents to rate from a scale of 1 to 7, just like the other sections. A descriptive statistics analysis was conducted as well to obtain the mean scores and standard deviation for all items in this section. The results are shown in the table as per below:

Table 8: English Language Educators' TPACK Level

Items	Mean	SD
30) I can teach lessons that appropriately combine English language, technologies, 21st century skills, and teaching approaches.	4.83	1.262
31) I can select technologies to enhance what I teach, how I teach, and what students learn in English language class.	5.03	1.377
32) I can use strategies that combine content, technologies, 21st century skills, and teaching approaches in English language class.	4.77	1.278
33) I can provide leadership in helping others to coordinate the use of content, technologies, 21st century skills, and teaching approaches at my school.	4.63	1.273
34) I can choose technologies that enhance the content for English language lesson and 21st century skills.	4.87	1.074
Overall TPACK level	4.83	1.182

In Table 8 above, it reports the mean scores and standard deviations of all items in the TPACK level among the English language educators. Based on the table shown, the highest mean score is 5.03 (SD = 1.377), which is obtained by the item "I can select technologies to enhance what I teach, how I teach, and what students learn in English language class". The second highest mean score is 4.87 (SD = 1.074) and the item with this score is "I can choose technologies that enhance the content for English language lesson and 21st century skills". In the

meantime, the item "I can provide leadership in helping others to coordinate the use of content, technologies, 21st century skills, and teaching approaches at my school" has the lowest mean score (M = 4.63, SD = 1.273). Overall, the mean score for all items in this section 4.83 (SD = 1.182) which shows that this is a high moderate score. Therefore, this indicates that the respondents scored themselves as highly moderate in the technological pedagogical content knowledge level.

English Language Educators' Overall 21st Century TPACK Level

Based on the respondents' responses on all seven sections in the questionnaire, this study analysed their overall 21st century TPACK level in teaching English language using the descriptive statistics analysis as well. The result is as shown in the table below:

Table 9: English Language Educators' Overall 21st Century TPACK Level

	Mean	SD
Overall 21st century TPACK level	4.94	1.086

Based on Table 9 above, the overall mean score is 4.94 (SD = 1.086). This indicates a high moderate score, which means that the respondents in this study scored their 21st century TPACK level in teaching English language as highly moderate.

5. Discussion

In this pilot study, the findings and data analyses section above has revealed important results for this pilot study. To start this discussion, it is comprehensive to see the comparisons of all aspects of TPACK levels as a whole. This is done to clearly see which aspects that the respondents felt least or most confident with. The means and standard deviations of all aspects are compiled in the below table:

Table 10: Comparison of All Sections in the Questionnaire

Dimensions	Mean	SD
1) Technological Knowledge (TK) level	4.67	1.113
2) Content Knowledge (CK) level	4.88	1.216
3) Pedagogical Knowledge (PK) level	5.23	1.218
4) Pedagogical Content Knowledge (PCK) level	5.25	1.214
5) Technological Pedagogical Knowledge (TPK) level	5.05	1.180
6) Technological Content Knowledge (TCK) level	4.68	1.173
7) Technological Pedagogical Content Knowledge (TPACK) level	4.83	1.182
Overall 21st century TPACK level	4.94	1.086

In Table 10 above, it is shown that the aspect with the lowest mean score is the technological knowledge (TK) level with a mean score of 4.67 (SD = 1.113). The second lowest mean score is obtained by the technological content knowledge (TCK) level, as the mean score is 4.68 (SD = 1.173). These results are similar with a study conducted by [20]. This means that the respondents felt the least confident with the technological and technological content knowledge. Even though the use of technology is very rampant in education today, it seems that the English language educators still need more help and improvement when it comes to using technology in teaching. However, [6] and [18] found different results as the lowest mean score referred to the TPACK level while the TK level was the second lowest. Even though the lowest mean score in this pilot study was different from the studies by [6] and [18], all these studies revealed that the technological knowledge was an aspect that the respondents needed to work on.

Meanwhile, the highest mean score is 5.25 (SD = 1.214) which refers to the PCK level. This result indicates that the respondents felt the most confident with their pedagogical content knowledge. It might be due to the fact that as English language educators, they have been trained exclusively to teach this subject. Having a high mean score in PCK level means that the respondents in this study truly understood how to combine the knowledge of content and pedagogy in their teaching. As explained by [2] in their article, PCK occurs when educators transform and interpret their subject matter in multiple ways to be represented to the learners in a way that the learners will easily understand. Teaching experience also plays a role in determining the PCK level among educators. This is supported by [19], who reported that PCK is developed when an educator gains real

experience when teaching in the classroom, attending workshops and trainings, and receiving helps from colleagues.

The overall mean score 21st century TPACK level in this study is 4.94 (SD = 1.086) that illustrates a high moderate score. This score shows that the respondents' confidence with their TPACK level was at moderate. This result is in contrast with the studies by [1] and [20], as in their studies, the TPACK level was the highest. Meanwhile, [20], [6], and [21] found that the TPACK level was the lowest. A lot of probabilities might contribute to these conflicting results. Among the factors could be different geographical factors, accessibility to technology while teaching, and teaching experiences of the respondents, and trainings received by respondents related to teaching with technology. [22] reported in her study that more experienced teachers scored themselves in TPACK lower compared to beginner teachers, as technological knowledge is an important aspect in the TPACK domain. Their confidence in technological knowledge was low, hence the reason they scored themselves lower in the TPACK domain. As to the respondents in this pilot study, since they scored themselves highly moderate, this showed that they had enough technological knowledge when teaching, however, their confidence level was not enough to rate themselves highly in the TPACK domain.

6. Conclusion

The purpose of this pilot study was to determine the level of 21st century TPACK of English language educators. 21st century TPACK here means that the educators were measured not only in teaching English language using technology, but they were also measured in teaching 21st century skills like communication, collaboration, critical and creative thinking skills, as well as values and ethics. The respondents in this study rated themselves in this regard, since teaching and learning processes nowadays are far beyond imparting only knowledge to the students, but to ensure students are able to embrace and face the 21st century requirements and challenges.

This study revealed that the respondents were highly confident of their PCK level, which is expected as teaching English language is their expertise. The formal education gained through teacher training contributed to this result, and in-service training, mentoring, and observation from more experienced colleagues also play significant roles [19]. Teaching experience also plays a role in determining the educators' PCK level. As their experiences increase, their confidence in their PCK level will also increase accordingly.

The results of this study also showed that the respondents were not confident with their technological knowledge (TK) and their technological content knowledge (TCK). This result is very important to be addressed today, as technology is increasingly becoming more dominant in education today. To overcome this issue, educators need to be exposed more to not only technological content, but also to technological tools that could help them to fully utilize technology when teaching in the classroom, as suggested by many [1], [18],[20], [23]. Professional development courses have to be provided as needed by the educators, until they are confident enough to embrace and integrate technology in their teaching and learning sessions

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