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Readiness of Gen-X English High School Teachers in Integrating Teaching with Technology

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ABSTRAK

Di masa pandemi, hampir semua kegiatan sekolah mengandalkan penggunaan teknologi. Guru diharapkan untuk mengajar menggunakan platform online. Penelitian ini bertujuan menganalisis kesiapan guru bahasa Inggris SMA yang termasuk dalam Gen X dalam mengintegrasikan teknologi dalam pengajaran, dengan menggunakan kerangka kerja TPACK. Penelitian ini menggunakan desain deskriptif kualitatif. Subyek penelitian adalah 58 guru bahasa Inggris SMA Gen X di salah satu provinsi di Indonesia. Pengumpulan data dilakukan dengan menyebarkan kuesioner online kepada para guru. Analisis data triangulasi dilakukan dengan melakukan wawancara semi terstruktur kepada guru sukarela. Temuan mengungkapkan bahwa guru Gen X belum siap untuk mengintegrasikan pengajaran dengan teknologi. Dari ketujuh variabel integrasi dalam TPACK, basis pengetahuan tingkat pertama direspon secara positif. Pada basis pengetahuan tingkat kedua dan ketiga, respon guru cenderung menurun. Beberapa masalah dalam integrasi teknologi terungkap selama wawancara. Pelatihan profesionalisme guru bagi guru generasi X dirasa perlu, terutama pelatihan pemanfaatan teknologi dan internet dalam pembelajaran. Integrasi kurikulum TIK juga merupakan isu penting. Akhirnya, keterbatasan dan implikasi bagi otoritas pendidikan dan penelitian masa depan dibahas.

ABSTRACT

During pandemic, almost all school activities rely on the use of technology. Teachers are expected to teach using the online platforms. This study aims at analyzing the readiness of English high school teachers who are categorized into Gen X in integrating technology in teaching, by using TPACK framework. The study applies a descriptive qualitative design. Research subjects were 58 Gen X English high school teachers in one province in Indonesia. Data were collected by distributing online questionnaire to the teachers. Data analysis of triangulation was conducted by doing semi-structured interviews to volunteered teachers. The findings revealed that the Gen X teachers were not ready to integrate teaching with technology. Of all seven integration variables in TPACK, the first level knowledge bases are responded positively. When it comes to the second and third level knowledge bases, the teachers' responses tend to decrease. Some problems in the technology integration were revealed during the interview. Trainings of teachers' professionalism for teachers from generation X are considered necessary, especially training on the use of technology and the internet in learning. ICT curriculum integration is also an important issue. Finally, limitations and implications for the education authorities and future research were discussed.

1. INTRODUCTION

COVID-19 pandemic which began in 2019 has had a great impact on human life. This situation forces humans to live with limited mobility. During pandemic, almost all activities use online platforms. It is undeniable that these conditions bring serious challenges to all sectors, including education sector (Adedoyin & Soykan, 2020; Bozkurt & Sharma, 2020; Muthuprasad et al., 2021). With the high number of Covid-19 cases, learning is carried out remotely. The recent increase in cases of the new variant of the Covid-19 has forced government in many countries to close schools, including Indonesia. In Indonesia, before the pandemic condition, educational situation had not been satisfying. This was shown by the Program for International Student Assessment (PISA). Among PISA-participating countries and economies, Indonesia was ranked 72 out of 77 countries for reading competence, ranked 72 out of 78 country for Mathematics, and ranked 70th out of 78 countries for Science (Afriyanti et al., 2018; Murtiyasa & Perwita, 2020). The scores tended to be stagnant in the last 10 to 15 years. Apart from the issue that English low proficiency might be the cause of this low rank, this fact somehow indicated that Indonesian student performance is low. This situation will surely get worse with long school closures as education system is likely to meet external dangers i.e. major learning loss (Bozkurt & Sharma, 2020; Kaffenberger, 2021).

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During the remote teaching and learning process, teachers indeed still need to create a meaningful learning process for students. In fact, learning challenges during the pandemic are opportunities for the growth of learning innovations by teachers in schools. The word innovation refers to a new idea, device, or method and also refers to the act or process of introducing new ideas, devices, or methods. Innovation can be interpreted as an update or something new or considered new by a person or group of people (Krayneva et al., 2021; Serdyukov, 2017). Innovations in education are often associated with the use of technology and the internet to access materials and to conduct learning interactions, such as through websites, Learning Management Systems (LMS), mobile applications, and social media. In reality, often innovative practices in education are limited to technology media and digital channels, and the ability to conquer the technology is also different from one generation to another generation (mostly referred to as gen) (Reisenwitz, 2009; Weiwei et al., 2021). Teachers who are working at present time are those who belong to Gen Baby Boomers (many are retiring), Gen X, and Gen Y. Among these three generations, Gen X are selected as subject researches as they were born in the beginning years of technology and information development (Kupperschmidt, 2000; Putra, 2016; Smola & Sutton, 2002).

Some studies researching about Gen X as workers and teachers were conducted, and some were done by comparing them with another generation. The first was aimed at examining the meaningful work level of generation X and generation Y teachers, in the form of descriptive survey model. The results revealed that meaningful work levels of teachers are high for both generations. It was also revealed that generation X teachers found their work relatively more meaningful than Generation Y (Akar, 2020). The second research was done to find out the differences and similarities between 241 Gen X and Baby Boomers as public employees. It was found that there was a surprising level of similarities between the two generations. It was also found that there were three significant areas on the differences between them, leading to implications on training, recruiting, retention, motivation and human resources processes (Jurkiewiecz, 2000). The next research conducted SWOT analysis on the school administrators' perspectives on teachers from different generations: baby Boomers, Gen X and Gen Y. The analysis revealed that especially for Gen X, they work with determination, claims to know everything, and acts as a bridge between generations. One threat was they are disloyal (Polat et al., 2019). In organizations and marketers, one study showed that Gen X is less amenable to more computer use than Gen Y, is similar with Gen Y in in its interest in volunteerism and its work orientation, and is more brand loyal and more risk averse compared to Generation Y (Reisenwitz, 2009). The last one revisited the issue of generational differences and the causes of those differences. The study showed that to a lesser degree, work values also change as workers grow older. Gen X-ers showed a stronger desire to be promoted more quickly. Gen X-ers felt more strongly that 'working hard makes one a better person' to indicate their moral importance of work (Smola & Sutton, 2002)

The infusion of technology and education is unavoidable. Related to this, there are some frameworks introduced in the infusion of technology and pedagogy (Cilliers, 2017; Kumar et al., 2008; Sugiarti, 2019). One of the approach or framework to combine the technology and learning components was developed by Mishra & Koehler and is called Technology, Pedagogy, and Content Knowledge (TPACK) framework (Bostancıoğlu & Handley, 2018; König et al., 2020; Mishra & Koehler, 2006). TPACK is a framework that integrates Technological Knowledge, Pedagogical Knowledge, and Content Knowledge in a learning context. TPACK was originally developed who described Pedagogical and Content Knowledge (PCK) (Hamilton et al., 2016; Hilton, 2016; Mishra & Koehler, 2006). In this framework, learning success occurs when the teacher understands the content of certain subjects to be taught and how to deliver these subjects. Later, technology components are included in this framework.

These frameworks intersect with each other and create seven integration variables of the components in the TPACK framework: (1) Technological Knowledge (TK), i.e. knowledge of how to use different technologies; (2) Pedagogical Knowledge (PK), i.e. the ability to approaches in learning; (3) Content Knowledge (CK), i.e. subject matter of knowledge; (4) Technological Content Knowledge (TCK), i.e. knowledge of how to utilize appropriate technology to support teaching and learning approaches without considering the subject matter; (5) Pedagogical Content Knowledge (PCK), i.e. knowledge about how to convey content or information on a subject understood by others; (6) Technological Pedagogical Knowledge (TPK), i.e. knowledge about how technology can facilitate pedagogical approaches; (7) Technological Pedagogical Content Knowledge (TPACK), i.e. knowledge about how to facilitate the learning of trainees from certain content through pedagogical and technological approaches (Habibi et al., 2020; Hilton, 2016; Mishra & Koehler, 2006).

Base on those problem and result from previous studies the researcher is interested in conducting study. This present study used TPACK framework in assessing the West Sumatera's Gen-X English High School teachers' readiness in infusing technology in education, utilized the EFL-based TPACK to explore the readiness, and also described the teachers' problems in integrating the technology in class. The aims of this study is to analyzing the readiness of English high school teachers who are categorized into Gen X in integrating technology in teaching, by using TPACK framework.

2. METHOD

The study applies a descriptive qualitative design. The research subjects were English teachers who were born from the year of 1965 to 1980, categorized as Gen X, and teach in high schools in West Sumatera. In Indonesia, high schools are categorized as public and private, and are also categorized into general high school and vocational high schools. This study had English teachers teaching in public general high school and public vocational school. There were two instruments used in this study. The first instrument is a questionnaire which was distributed online. There were 58 teachers responded to the questionnaire. The questionnaire was adapted from EFL-based TPACK survey which evaluated the content validity of the initial items by inviting 36 international experts in computer-assisted language learning (CALL) to discuss the items (Bostancıoğlu & Handley, 2018). The next processes were exploration and validation by administrating questionnaire to 542 EFL practitioners and Exploratory Factor Analysis (EFA) and Confirmatory Factor Analysis (CFA). The results were 37 final items which provide support for approaches to English language teaching in the efforts of integrating TK, PK, and CK (Malik, 2018). The EFL-based TPACK was then adapted and the adapted one was validated by two expert judgements. The experts were lecturers in the fields of educational technology and English education. Some items were revised and 3 items were eliminated since they did not fit in the educational context of Indonesia. The second instrument was an interview guide. Six voluntarily teachers were interviewed by doing semi-structured interviews. The grid of the research instruments of the study is show in Table 1.

Table 1. Grid of the Research Instruments

Variables	Indicators	Question Items	Instruments
Technological Knowledge (TK)	know how to use different technologies	1 - 5	questionnaire
Pedagogical Knowledge (PK)	know how to use approaches in learning	6 – 8	
Content Knowledge (CK)	have subject matter of knowledge	9 - 12	
Technological Content Knowledge (TCK)	know how to utilize appropriate technology to support teaching and learning approaches	13 - 16	
Pedagogical Content Knowledge (PCK)	know how to convey content or information on a subject understood by others	17 - 19	
Technological Pedagogical Knowledge (TPK)	know how technology can facilitate pedagogical approaches	20 - 23	
Technological Pedagogical Content Knowledge (TPACK)	know how to facilitate the learning from certain content through pedagogical and technological approaches	24 - 27	
General knowledge in Integrating technology into teaching	use and integrate technology in teaching using some applications	1 - 6	semi-structured interview
Problems encountered when integrating the technology into teaching	encounter problems when integrating technology into teaching	7 - 10	

Having been adapted and validated, the final questionnaire used to collect data consist of 27 items with the details of the items are as follows: 1) Technological Knowledge (TK) is 5 items; (2) Pedagogical Knowledge (PK) is 3 items; (3) Content Knowledge (CK) is 4 items; (4) Technological Content Knowledge (TCK) is 4 items; (5) Pedagogical Content Knowledge (PCK) is 3 items; (6) Technological Pedagogical Knowledge (TPK) is 4 items; and (7) Technological Pedagogical Content Knowledge (TPACK) is 4 items. The interview was semi-structured type and the questions were derived from the literature review with the purpose to confirm teachers' overall knowledge in integrating technology into teaching. The interviews were also intended to discuss on the problems the teachers encountered when integrating the technology into teaching.

The data were analyzed by using triangulation technique where researchers use different data collection sources techniques to get data from the same source to develop a comprehensive understanding of phenomena (Carter et al., 2014; Noble & Heale, 2019; Sugiyono, 2015). Data from the results of interviews were used to compare data from the questionnaire. Data technique analysis were done by doing data display (data presentation). In this research, the presentation of the quantitative data from the questionnaire was done in the form of tables and graphs. Then it was followed by drawing conclusion or verification. The qualitative data analysis from the interviews was done by doing inference and verification (Miles et al., 2014; Morse, 2006).

3. RESULT AND DISCUSSION

Result

Gen X English Teachers' Technological Knowledge

Teachers' technological knowledge covers the knowledge of the basics of technology that can be used to support teaching and learning, for example, the use of software, animation programs, internet access. The data taken from this study are shown in the graph below from 5 items in the assessment. Chart of Gen X English teachers' technological knowledge is show in Figure 1.

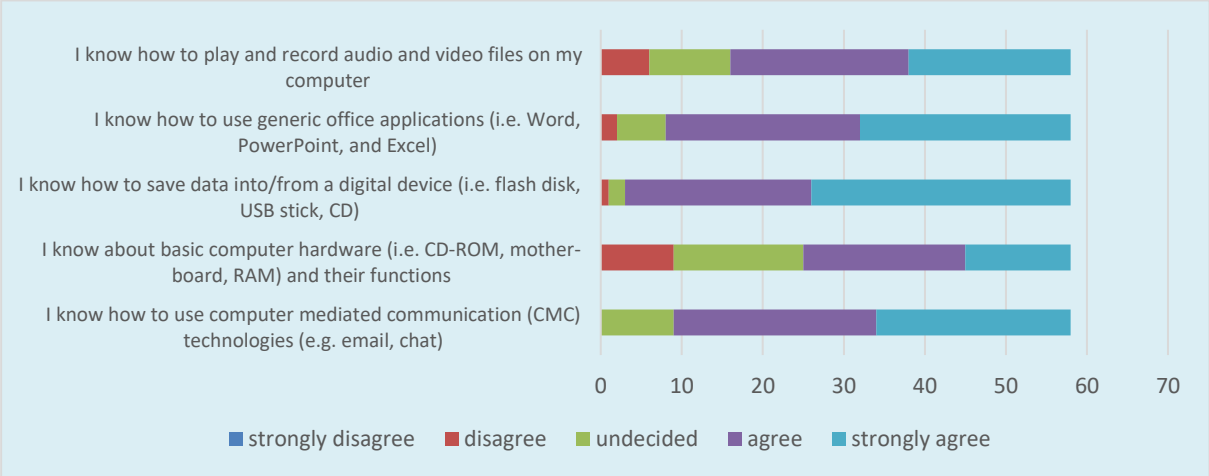

Figure 1. Gen X English Teachers' Technological Knowledge

As seen from Figure 1, most Gen X English teachers' responses on their technological knowledge were dominated with agree and strongly agree, and very few responses are for undecided, disagree and strongly disagree. For statement *I know how to use computer mediated communication (CMC) technologies (e.g. email, chat),* the response for agree and strongly agree was 84%, undecided was 15.5%, and disagree plus strongly disagree was 0%. The next statement *I know about basic computer hardware (i.e. CD-ROM, mother-board, RAM) and their functions*, the response for agree and strongly agree was 56.9%, undecided was 27.6%, and disagree plus strongly disagree was 15.5%. The statement *I know how to save data into/from a digital device (i.e. flash disk, USB stick, CD)* received 94.8% strongly agree and agree responses, 3.4% undecided, and 1.7% disagree and strongly disagree responses. The statement *I know how to use generic office applications (i.e. Word, PowerPoint, and Excel)* gained 86.28% strongly agree and agree responses, 10.3% undecided, and 3.4% disagree and strongly disagree responses. The last statement *I know how to play and record audio and video files on my computer*, the response for agree and strongly agree was 72.4%, undecided was 17.2%, and disagree plus strongly disagree was 10.3%. From these percentages, the average percentage for agree and strongly agree which indicate the teachers' technological knowledge is 79%. It can be said that Gen X English teachers technological knowledge responses were positive. Two things need to point out are: (1) the undecided responses which indicate their non-confidence is quite a few; and (2) all teachers are able to do CMC technology.

Gen X English Teachers' Pedagogical Knowledge

Teachers' pedagogical knowledge involve in-depth knowledge related to teaching and learning theory and practice which includes objectives, processes, assessment learning methods, strategies and others. The following graph shows the data obtained from 3 statements in the assessment as show in Figure 2. Figure 2 shows that most Gen X English teachers' responses on their pedagogical knowledge were dominated with agree and strongly agree, and very few responses are for undecided, disagree and strongly disagree. For statement *I can support learners' interaction,* the response for agree and strongly agree was 75.9%, undecided was 24.1%, and disagree plus strongly disagree was 0%. The next statement *I can assess student learning in multiple ways*, the response for agree and strongly agree was 69%, undecided was 27.6%, and disagree plus strongly disagree was 3.4%. The last statement *I know how to organize and maintain classroom management* received 89.7% strongly agree and agree responses, 8.6% undecided, and 1.7% disagree and strongly disagree responses. From these percentages, the average percentage for agree and strongly agree which indicate the teachers' pedagogical knowledge is 78.2%. It can be said that Gen X English teachers' pedagogical knowledge responses were positive. Two things need to point out is that the undecided responses which indicate their non-confidence is quite a few, and that all teachers are able to support learner's interaction.

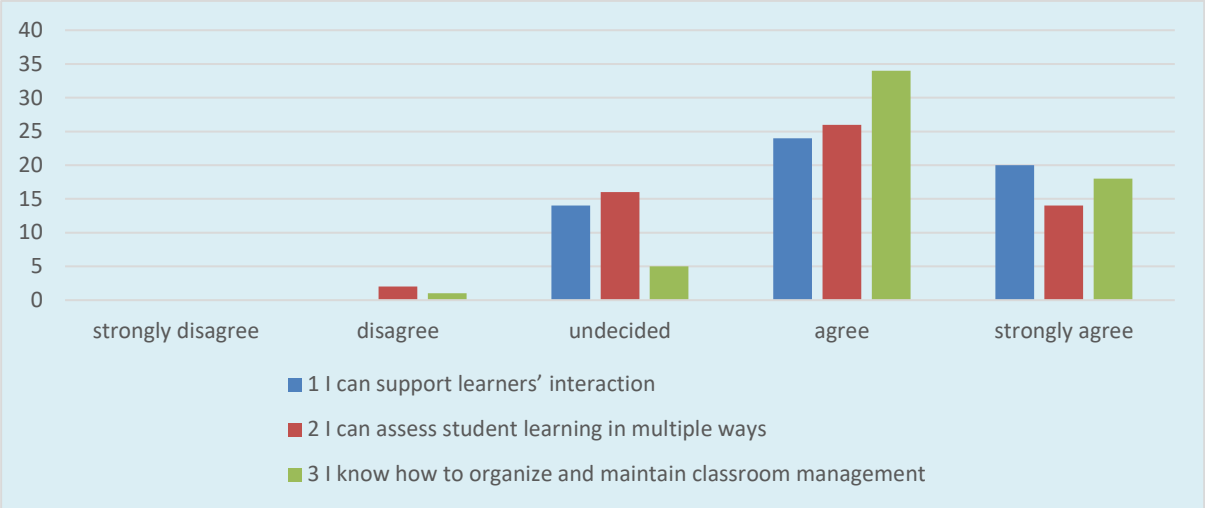

Figure 2. Gen X English Teachers' Pedagogical Knowledge

Gen X English Teachers' Content Knowledge

Teachers's content knowledge means the knowledge of the subject matter to be taught to the students. Data revealed in the next graph show the Gen X English teachers' content knowledge from 4 items in the assessment as show in Figure 3.

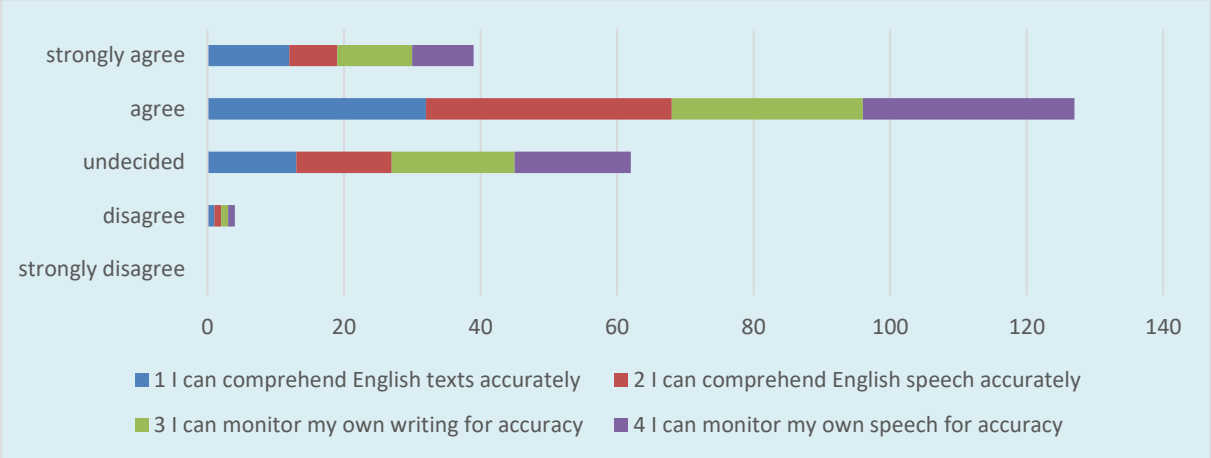

Figure 3. Gen X English Teachers' Content Knowledge

Figure 3 shows that most Gen X English teachers' responses on their content knowledge were also dominated with agree and strongly agree, and very few responses are for undecided, disagree and strongly disagree. For statement *I can comprehend English texts accurately*, the response for agree and strongly agree was 75.9%, undecided was 22.4%, and disagree plus strongly disagree was 1.7%. The next statement *I can comprehend English speech accurately*, the response for agree and strongly agree was 74.1%, undecided was 24.1%, and disagree plus strongly disagree was 1.7%. The next statement *I can monitor my own writing for accuracy* received 67.2% strongly agree and agree responses, 31.0% undecided, and 1.7% disagree and strongly disagree responses. The last statement, *I can monitor my own speech for accuracy*, the response for agree and strongly agree was 69.0%, undecided was 29.3%, and disagree plus strongly disagree was 1.7%. From these percentages, the average percentage for agree and strongly agree which indicate the teachers' content knowledge is 71.6%. It can be said that Gen X English teachers' content knowledge responses were positive. There are more undecided answers received in this integration variables.

Gen X English Teachers' Technological Content Knowledge

This knowledge includes the understanding of technology and subject matter that can help and influence other components. The next graph shows the data gained about this knowledge from 4 items in the assessment as show in Figure 4.

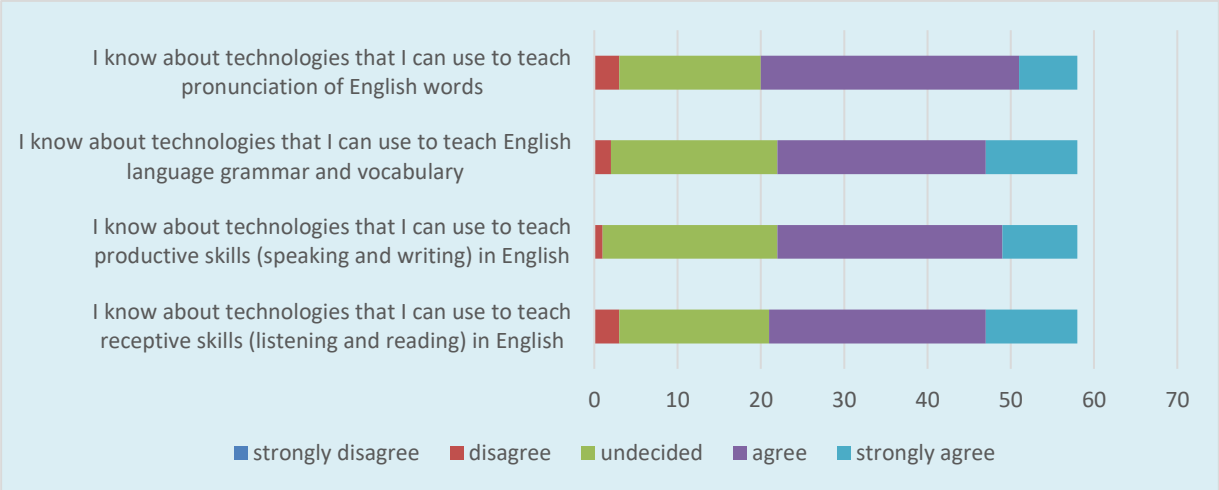

Figure 4. Gen X English Teachers' Technological Content Knowledge

Figure 4 shows that most Gen X English teachers' responses on their technological content knowledge were also dominated with agree and strongly agree, and very few responses are for undecided, disagree and strongly disagree. For statement *I know about technologies that I can use to teach receptive skills (listening and reading) in English*, the response for agree and strongly agree was 63.8%, undecided was 31%, and disagree plus strongly disagree was 5.2%. The next statement *I know about technologies that I can use to teach productive skills (speaking and writing) in English*, the response for agree and strongly agree was 62.1%, undecided was 36.2%, and disagree plus strongly disagree was 5.2%. The next statement *I know about technologies that I can use to teach English language grammar and vocabulary* received 62.1% strongly agree and agree responses, 34.5% undecided, and 3.4% disagree and strongly disagree responses. The last statement, *I know about technologies that I can use to teach pronunciation of English words*, the response for agree and strongly agree was 65.5%, undecided was 29.3%, and disagree plus strongly disagree was 5.2%. From these percentages, the average percentage for agree and strongly agree which indicate the teachers' technological content knowledge is 63.4%. It can be said that Gen X English teachers' technological content knowledge responses were positive enough, eventhough the percentage decreases from the first level knowledge bases.

Gen X English Teachers' Pedagogical Content Knowledge

This knowledge includes interactions and intersections between pedagogy and subject matter. Figure 5 shows the data for this from 3 items in the assessment.

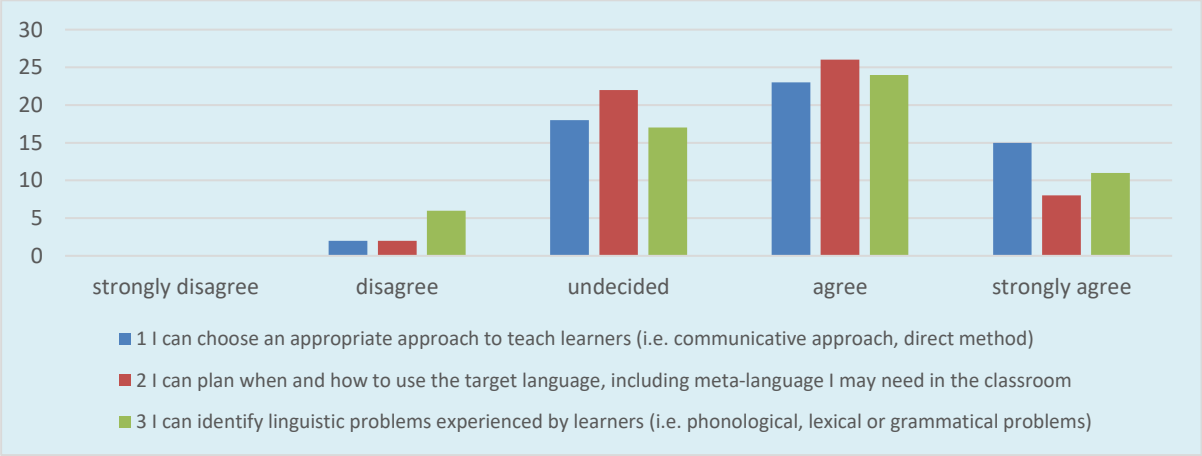

Figure 5. Gen X English Teachers' Pedagogical Content Knowledge

Figure 5 shows that most Gen X English teachers' responses on their pedagogical content knowledge were also dominated with agree and strongly agree, and some responses are found for undecided, disagree and strongly disagree. For statement *I can choose an appropriate approach to teach learners (i.e. communicative approach, direct method)*, the response for agree and strongly agree was 65.5%, undecided was 31.0%, and disagree plus

strongly disagree was 3.4%. The next statement *I can plan when and how to use the target language, including meta-language I may need in the classroom,* the response for agree and strongly agree was 58.6%, undecided was 37.9%, and disagree plus strongly disagree was 3.4%. The last statement, *I can identify linguistic problems experienced by learners (i.e. phonological, lexical or grammatical problems),* the response for agree and strongly agree was 60.3%, undecided was 29.3%, and disagree plus strongly disagree was 10.3%. From these percentages, the average percentage for agree and strongly agree which indicate the teachers' pedagogical content knowledge is 61.5%. It can be said that Gen X English teachers' pedagogical content knowledge responses were positive enough, with a lower percentage from the first level knowledge bases.

Gen X English Teachers' Technological Pedagogical Knowledge

This knowledge is a series of understanding how learning changes occur by utilizing technology that is used to support active learning and can help and facilitate the concepts of subject matter. It shown in the graph as show in Figure 6.

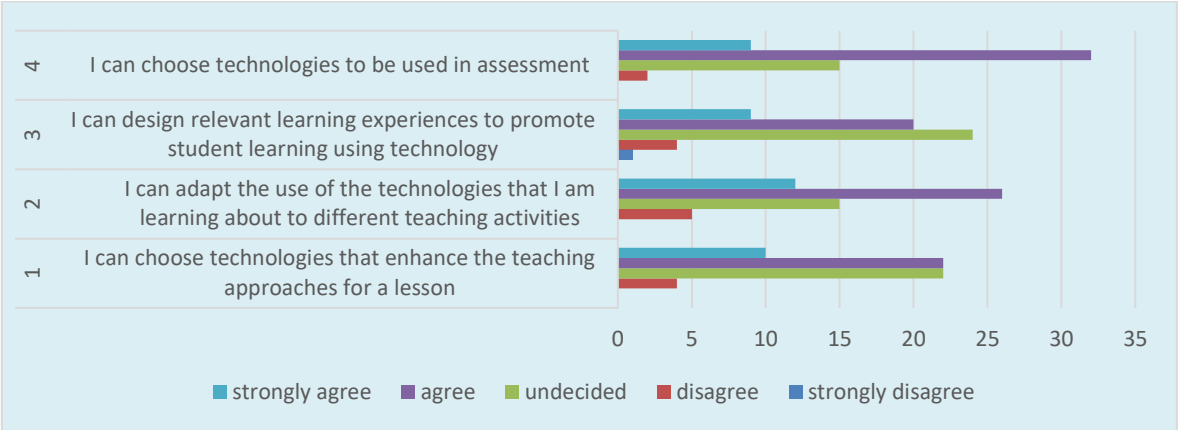

Figure 6. Gen X English Teachers' Technological Pedagogical Knowledge

As seen from Figure 6, most Gen X English teachers' responses on their technological pedagogical knowledge were also dominated with agree and strongly agree, and few responses are for undecided, disagree and strongly disagree. For statement *I can choose technologies that enhance the teaching approaches for a lesson,* the response for agree and strongly agree was 55.2%, undecided was 37.9%, and disagree plus strongly disagree was 6.9%. The next statement *I can adapt the use of the technologies that I am learning about to different teaching activities,* the response for agree and strongly agree was 65.5%, undecided was 25.9%, and disagree plus strongly disagree was 8.6%. The statement *I can design relevant learning experiences to promote student learning using technology* received 50% strongly agree and agree responses, 41.4% undecided, and 8.6% disagree and strongly disagree responses. The last statement *I can choose technologies to be used in assessment,* the response for agree and strongly agree was 70.7%, undecided was 25.9%, and disagree plus strongly disagree was 3.4%. From these percentages, the average percentage for agree and strongly agree which indicate the teachers' technological pedagogical knowledge is 60.3%. It can be said that Gen X English teachers technological pedagogical knowledge responses gained the lowest percentage from the second level knowledge bases.

Gen X English Teachers' Technological Pedagogical and Content Knowledge

This knowledge summarizes a series in teaching where the ability to master technology in an integrated manner cannot be separated from one another from its constituent components. This was revealed in Figure 7. As seen from Figure 7, most Gen X English teachers' responses on their technological pedagogical and content knowledge were also dominated with agree and strongly agree, and some responses are for undecided, disagree and strongly disagree. For statement *I can select technologies to use in my classroom that enhance what I teach, how I teach, and what students learn,* the response for agree and strongly agree was 56.9%, undecided was 39.7%, and disagree plus strongly disagree was 3.4%. The next statement *I can use technology effectively to communicate relevant information to students and peers,* the response for agree and strongly agree was 56.9%, undecided was 39.7%, and disagree plus strongly disagree was 3.4%. The statement *I can use a range of technologies that enable students to become active participants* received 58.6% strongly agree and agree responses, 36.2% undecided, and 5.2% disagree and strongly disagree responses. The last statement *I can facilitate intercultural understanding by using technology to engage students with different cultures,* the response for agree and strongly agree was 46.6%, undecided was 41.4%, and disagree plus strongly disagree was 12.1%. From these percentages, the average

percentage for agree and strongly agree which indicate the teachers' technological pedagogical and content knowledge is 54.7%. It can be said that Gen X English teachers' technological pedagogical and content knowledge responses gained the lowest percentage among the first and second level knowledge bases.

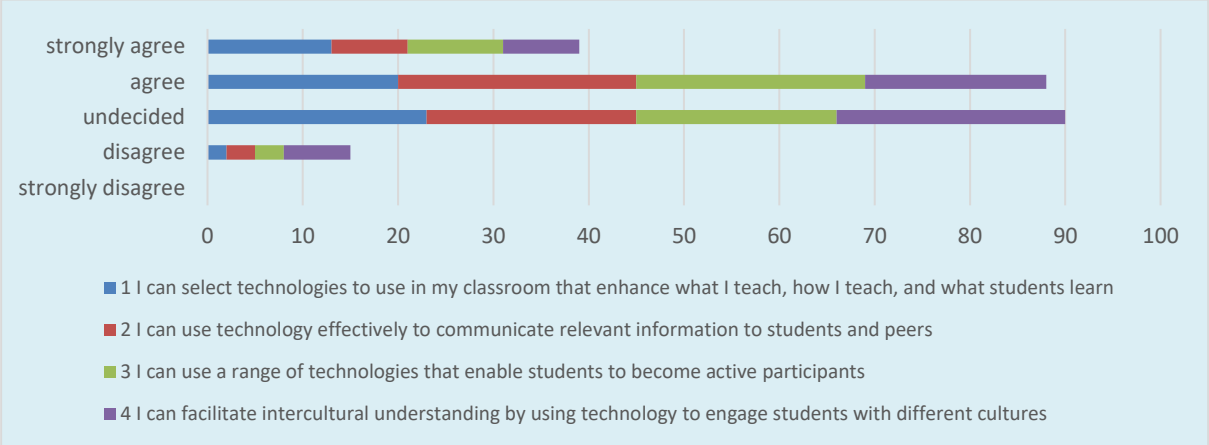

Figure 7. Gen X English Teachers' Technological Pedagogical and Content Knowledge

The results of the questionnaire were confirmed from the interview of six teachers. Only two teachers (T2 and T4) said that their knowledge in integrating technology to teaching was good. Three others (T3, T5 and T6) felt that their knowledge were good enough and one teacher (T1) said that she had a poor knowledge about it. When asked about applications that they ever used in teaching during the pandemic, all teachers mentioned some applications such as Telegram, Whatsapp, Zoom/Google Meet, Google Classroom, Kahoot, Quizziz, Geschool, and Google Form. The synchronous learning using Zoom/Google Meet were ever done by three teachers with difficulties (T4, T5 and T6). The rests (T1, T2 and T3) preferred to use asynchronous ones such as Telegram, Whatsapp, Google Classroom, Kahoot, Quizziz, Geschool, and Google Form.

When asked about problems they faced during the use of technology in teaching English, T5 and T6 responded that they have no problem faced so far. They said that every time they use the applications, synchronous or asynchronous, there were not any problems at all. Other teachers (T1, T2, T3 and T4) who responded yes to the same question mentioned that the problems were signal (T1 and T2), doing essay assessment in Google Classroom (T5), and when sharing screen for the first time during the Google Meet (T4). T1 mentioned that students were only present during the attendance check and did not do the task given. In addition, there were students who did not own android phone and had to share one phone with the brother and sisters. To solve the problems, T1 asked the students who did not own android phone to go to school and picked up handouts and assignments so that they could still catch up the lessons. T2 had no solutions so far to the signal problem since the internet connection in her place was not good. T4 with the problem of sharing screen solved the problem by asking her friend who knew how to do it. T5 who had a problem in assessing essays in Google Classroom learned from Youtube, thus solved the problem eventually.

Discussion

The Gen Xers are now in the age around 58 – 43 years old. As a worker, Gen Xers are less amenable to more computer use than Gen Y, show a stronger desire to be promoted more quickly, and has a high moral importance of work (Reisenwitz, 2009; Smola & Sutton, 2002). As a teacher, from the school administrators' perspectives, Gen X teachers are reported to be determined, responsive, collaborative, problem solvers, and a mediator between the generations of babay boomers and Gen Y.

Related to the ability of Gen X teachers in integrating technology in class, particularly the English teachers, the results of the research indicate that from the seven integration variables in TPACK, only first level knowledge bases were responded positively, they are technological knowledge (TK), pedagogical knowledge (PK) and content knowledge (CK). This indicates that the Gen X English teachers perceived that they are able to use different technologies, use approaches in learning, and have subject matter of knowledge. These findings correspond to an earlier study investigating interactions among TPACK components. The first level knowledge bases are considered important in predicting second-level knowledge bases (Habibi et al., 2020; Polat et al., 2019). In this study, second level bases were positive enough eventhough the percentage tend to decrease. The second level bases are technological content knowledge (TCK), pedagogical content knowledge (PCK), and technological pedagogical knowledge (TPK). The Gen X English teachers responded with more undecided and negative answers in the second level knowledge bases. In fact, the trend of positive responses of teachers' readiness in infusing

technology in teaching tend to decrease from the first to the last integration variables in TPACK, and vice versa, the trend of undecided and negative responses increased. When it comes to the third level knowledge bases – technological pedagogical and content knowledge (TPACK) – the results indicated the lowest percentage. Whereas, the last knowledge bases is the strongest predictor for the use of information and communication technology (UICT) in teaching (Habibi et al., 2020; Schmidt et al., 2014)

This study findings are compatible with the study investigating Gen X teachers' lived experiences in the New Normal in Phillipines context. Gen X teachers in the previous study struggled with the inevitable technological advancement due to the unfamiliarity with those technologies (Bugnos et al., 2022; Sripada & Cherukuri, 2019). The problems include utilizing technology and mobile apps to fulfill the needs of students' education, motivating students to learn in the midst of the pandemic, and having trouble adjusting to rapid changes, among others. Likewise, the Gen X English teacher in the present study found difficulties in utilizing synchronous learning and tend to use asynchronous learning. They were not confident enough to show their ability to select technologies to use in the classroom that enhance what they teach, how they teach, and what students learn.

This study also corresponds with a study analyzing digital technologies and teachers in educational processes from different generations: baby boomers, Gen X and Gen Y. Generation X-teachers are reported to experience difficulties in using information technologies effectively, similar with the baby boomer teachers, but not the millennial teachers (Gunduzalp, 2021; Machmud et al., 2021). The Gen Xers are able to use the internet to get sources for the learning materials, preparing activities, and the exam questions, however, they sometimes encounter problems dealing with MS Office (Excel, PowerPoint, Word), video programs, PDF, graphic design, and coding. The Gen X teachers revealed that the reasons for their problems in adapting to the digital age are due to the lack of hardware at schools and difficulties in following the technology. Similarly in another study, Generation X teachers are reported to be technologically inadequate (Polat et al., 2019). Teachers from Generation X are attempting to meet the demands of the digital world and adapt to them. However, there are times when the teachers feel as though they are lacking in particular areas.

There are implications of these findings to the development of the scientific field under study. First, trainings of teachers' professionalism for generation X teachers are considered necessary, especially training on the use of technology and the internet in learning. In fact, in general, in integrating information and communications technology for education, Indonesian teachers are still lack ICT technology access and training. Teacher education programs should try to help the Gen X English teachers to develop their perception about the needs of the modern educational system regarding the integration of technology into teaching. ICT curriculum integration is also an important issue to advance a common innovation in education culture that supports innovative education. It is hoped that in the future, all Gen X English teachers are able to utilize information and communication technology (ICT) in the learning process and also self-development as mentioned in the constitution concerning teachers and lecturers.

Despite the importance of the findings in this study, there are limitations to be discussed. First, due to the limited response of the teachers (only 58 teachers responded to the online questionnaire and 6 teachers volunteered for the interview), this study had a relatively small teacher sample. Furthermore, the study was carried out in one province in Indonesia, therefore generalization of results to other provinces and the educational contexts is hardly possible. However, given that Gen X English teachers' ability to adjust to technology integration is a problem that is not unique to West Sumatera, we can assume that other province in Indonesia are facing comparable perceptions and challenges during the COVID-19 pandemic. Future studies could be designed by using mixed research methods to provide more indepth information and for more generalizable research results.

4. CONCLUSION

Teaching with technology is a must in this 21 century as there is almost no space for classes without technology integration. This was getting even more necessary especially during pandemic where all classes were forced to be held online. As the findings of this study revealed, Gen X English teachers in one province in Indonesia were not completely ready in integrating technology in class. The teachers perceived that they are ready for the first level knowledge bases - technological knowledge (TK), pedagogical knowledge (PK) and content knowledge (CK). They perceived they are able to use different technologies, to use approaches in learning, and to have subject matter of knowledge. However, they are not completely ready for the second and third level knowledge bases – they are technological content knowledge, pedagogical content knowledge, technological pedagogical knowledge, and technological pedagogical and content knowledge. Problems arose during the integration due to the unfamiliarity with the technology and technology access. This study, though small in scope, contributes substantially to the education authorities in West Sumatera to manage its human resources, especially the English teachers from Gen X.

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