

IMPACT OF CALL PROFESSIONAL DEVELOPMENT FOR EFL MATERIALS ON TEACHER AGENCY AND TECHNOLOGICAL PEDAGOGICAL CONTENT KNOWLEDGE (TPACK) IN INDONESIAN ISLAMIC SCHOOLS

by **Dana Kristiawan**

Universitas 17 Agustus 1945 Banyuwangi, Indonesia

The University of Newcastle, Australia

dana.kristiawan_@uon.edu.au

Carol Carter

Curtin University, Australia

carol.carter @ curtin.edu.au

and **Michelle Picard**

Flinders University, Australia

Michelle.Picard @ flinders.edu.au

Abstract

The Indonesian English Foreign Language (EFL) curriculum emphasizes using technology to enrich learning and teaching processes and encourages teachers to supplement the curriculum with context-relevant materials. However, little attention is given to the voices of teachers in implementing Computer Assisted Language Learning (CALL) for teaching English, especially how to elaborate technology, pedagogy, and content in Islamic schools where context and teacher agency remain underexplored. To fill this gap, we conducted professional development workshops to support teachers in Islamic school settings in their development of technological and pedagogical content knowledge. Twenty-one Islamic English teachers were involved in developing materials that supplemented the textbook used in Indonesian Islamic schools and at the same time introduced online and digital technologies into the EFL classroom. Drawing on Participatory Action Research (PAR), the data collected consisted of pre-and post-reflective journals, focus group discussion, field notes, participants assignment artefacts, and were analysed by thematic analysis. Our findings identified that the teachers enhanced their agency as material developers to utilize technology and pedagogy in EFL language teaching. Meanwhile, in terms of their content knowledge integration in TPACK in action, teachers integrated their cultural and religious background into materials, and this increased their confidence. This study also reports on challenges developing and sustaining TPACK.

Keywords: Computer-Assisted Language Learning (CALL); Technological Pedagogical Content Knowledge (TPACK); local content; teacher agency; Islamic schools

1. Introduction

In the Indonesian secondary school context, it is mandatory for teachers to follow the requirements of the most recent curriculum documentation. The 2013 curriculum document identifies the core competencies that students are expected to develop as well as the fact that teachers should design learning experiences appropriate to students' sociocultural backgrounds and abilities to facilitate this learning. The 2013 curriculum also notes that teachers are expected to use technology to enrich their teaching (Widodo, 2016a; Imamyartha et al., 2022). The core curriculum requirements are the same for all subjects, including English.

Although the national curriculum provides detailed curriculum guidelines and recommends textbooks, teachers have difficulty in implementing these guidelines in practice. Widodo and Allamnakhrah (2020), in their study, found that Indonesian EFL teachers needed to enhance their material development skills to integrate technology and locally relevant content into their teaching. However, developing materials that integrate the technology, pedagogy and local context is challenging for English foreign language teachers in Indonesia due to a focus on standardized tests and examinations, leading to slavish adherence to the printed textbook and face-to-face grammar teaching (Widodo et al., 2016; Ardi & Rianita, 2022). Teachers are therefore torn between the expectation that their students will perform well in standardized tests and the Indonesian government's emphasis in the curriculum on the greater engagement of students in meaning-making and digital and online interactivity.

When implementing technology based EFL teaching in the Islamic school setting, teachers face two significant challenges. Firstly, they face the challenge of teaching English in a culturally relevant way since, as noted by Elyas and Picard (2010), there is often resistance to the culture/s of the target language from the students and sometimes even the teachers themselves. Therefore, as noted by Mahboob (2009), any EFL teaching intervention needs to accommodate both traditional Islamic approaches and relevant Western practices. Mahboob (2009) also stated that English could be used as a vehicle for sharing Islamic experiences, culture, and ideologies, thus reconciling students and teachers' Islamic identities with that of the target language.

Hanafi et al. (2021) argue that another challenge in the Islamic school setting is that these schools are usually situated in regional areas with minimal access to online and digital technologies. They further highlight that there is a deep-seated mistrust of online teaching and learning. Therefore, teachers need to be empowered to participate actively in technology-based

teaching as they lack structural and pedagogical support to move from their current textbook focused teaching to applying educational school-based technologies.

Based on the challenges mentioned above, professional development is needed to support Indonesian EFL teachers to integrate locally grounded CALL materials in Indonesian Islamic schools. Tafazoli (2021) argues that professional development is a useful vehicle for transforming teachers' beliefs and motivating them to implement technology in the language learning classroom. In this participative action research study, we designed professional development workshops for Islamic English teachers to elaborate technology, pedagogy and content knowledge and create locally grounded material for teaching English. The first author facilitated the workshops and collaborated with the teachers to develop sample materials. This paper aims to provide an exemplar of CALL professional development appropriate to Indonesian Islamic Schools and other similar contexts.

2. Literature review

2.1. Teacher agency and professional development in CALL

As described above, Indonesian EFL teachers are required to develop locally grounded and innovative material to engage students in meaningful learning and therefore need to serve as 'agents of change' (Widodo, 2016a). However, as noted in the Introduction, a teacher's ability to act is often constrained by cultural and structural factors such as the standardized test and exam regime which focuses on testing grammar-based tasks directly from the textbook. Therefore, the concept of agency is one that is relevant for exploration in this study. The definition of agency is varied based on the context and perspective (Priestley et al., 2012; Tao & Gao, 2021). This study follows the concept of agency identified by Mercer (2011) that defines agency as a person's capacity for autonomous, self-regulated behaviour to manage capably in all learning contexts and to transform the individual's own life. This study also views agency as a temporal and situated achievement that is ecologically determined. In this study, we hold that language teacher agency involves the interplay between personal and contextual resources and constraints (Tao & Gao, 2021). These definitions suggest that English teachers utilize agency in their participation in professional development as well as their movement from reflection to creativity and action in language teaching. Priestley et al. (2015) explained that to develop agency, an individual needs 'quality' engagement within a context. Kitade (2015) argues that EFL teacher agency is particularly socio-culturally constructed and interdependent with a particular social context.

Crucial factors that influence the building of a teacher's agency are the teachers' beliefs and knowledge of curriculum and pedagogy (Tao & Gao, 2017). Participatory action research that includes professional development workshops provides the opportunity to develop knowledge of the curriculum and pedagogy as well as facilitate quality engagement where participants are involved in active negotiation and collaboration (Baily et al., 2017). Several studies in the Indonesian context have confirmed the importance of professional development in developing teachers' agency as 'agents of change' in technology-based language learning (e.g., Ansyari, 2015; Tafazoli et al., 2018; Widodo & Allamnakhrah, 2020).

Despite the positive impact of professional development on teacher agency, Indonesian EFL teachers often struggle to implement technology and other innovations in their classroom practices due to a combination of a lack of resources and a lack of knowledge on how to use technologies (Lamb & Arisandy, 2020; Mulyono, Ismayama, Liestyana, & Komara, 2021). Professional development workshops can address knowledge gaps in technology integration, as highlighted by Tafazoli (2021). Such PD would guide English teachers to tailor their materials to their own contexts and constraints and develop material that accommodates online spaces, peer to peer interactivity, creative project-based learning, and multimedia collaboration (Hanson-Smith, 2018).

Ansyari (2015) pointed out that the following PD considerations are important when integrating technology in teaching in the EFL context: 1) participants' active involvement in the program, 2) providing participants with authentic learning experiences, 3) collaboration among participants, 4) providing guidance and support to participants when needed, 5) having curriculum coherency with the programme, 6) reflecting on what has been done, 6) giving feedback on participants' work, 7) providing intensive training, and 8) having sufficient time for participants to learn and practice. In this study, we aimed to develop workshops that accommodated all these principles as well as actively engage the participants in the participatory action research activities.

However, professional development does not necessarily address structural issues such as a lack of resources (Tafazoli & Meihami, 2022). Therefore, we collected the participants' reflections before the workshop to ascertain their experiences of integrating CALL activities and elaboration of technology, pedagogy and content for developing locally relevant materials as well as any challenges they had experienced in the past. This data assisted us in developing a workshop which would support teacher agency in integrating CALL as the outcome of the interplay between individual, contextual resources, and constraints (Tao & Gao, 2021). The Technological Pedagogical and Content Knowledge framework draws together all these

elements and hence is used to discuss the data in this study as described in this following section.

2.2. TPACK in action for developing material in CALL professional development

As mentioned earlier, teachers face challenges to elaborate technology, pedagogy and content knowledge to engage students in language learning. In this study, we employed the TPACK in action framework developed by Chai et al. (2013). TPACK in action by Chai et al. (2013) is an evolving fundamental framework of TPACK adapted from the original framework by Koehler and Mishra (2009) that integrates Technological Knowledge (TK), Pedagogical Knowledge (PK) and Content Knowledge (CK). These three aspects also interact with each other creating Technological Pedagogical Knowledge (TPK), Technological Content Knowledge (TCK) and Pedagogical Content Knowledge (PCK).

TPACK in action by Chai et al. added the dimensions of intrapersonal, interpersonal, cultural/institutional, and technological/physical (see Figure 1). The rationale for implementation of the framework is that we want to investigate the intrapersonal that related with the belief of the participants, how they work collaboratively (interpersonal), how cultural/institutional dimension on content knowledge the physical or technological support for the participants develop EFL material that integrating TPACK for Islamic school setting.

As content knowledge is a crucial aspect of TPACK, we wanted to explore how the participants, as the local actors, utilized agency to find solutions to identify and meet local needs in the Islamic school setting to enhance the teaching and learning of EFL (Liddicoat & Taylor-Leech, 2014).

Various studies in the Indonesian context have emphasized the incorporation of local culture and technology in English language teaching and shown that these elements have a positive impact on student learning. For example, Widodo's (2016b) study on engaging young learners of English in genre-based digital storytelling (DST) proved that digital stories accommodate students' voices and provide opportunities to democratize the way they create a local content story using multimodalities in language learning. Another study by Widodo et al. (2016) investigated how poetry writing uploaded onto a digital platform could assist students to write creatively. The study concluded that digital poetry could be a catalyst for expressive and meaningful language learning to express the students' cultural context. Finally, a recent study about a flipped classroom in an Indonesian EFL context by Husnawadi (2021) found that a local content topic such as describing students' responses to a national examination successfully boosted the student's motivation in completing writing tasks as part of situated

learning. These studies show that integrating local content and technology use led to enhanced pedagogy resulting in meaningful engagement for students and the enhancement of their English skills and technology competency. However, these studies do not address how best to support teachers to develop such activities and materials that elaborate technological, pedagogical, and content knowledge challenges as described above.

Therefore, this study aimed to address this gap in the literature by addressing the process of supporting professional development for technology, pedagogy and locally relevant content activities as highlighted in the following research questions:

- 1) What are the perceptions of the Islamic English teachers of using CALL before participating in professional development workshops?
- 2) What are the Indonesian Islamic School teacher's perceptions of the affordances barriers and of using CALL after the professional development workshops?

3. Research methodology

3.1. Research design

To address the research questions mentioned above, we employed a participative action research approach as highlighted by Kemmis and McTaggart (2000). This approach accommodates participants' voices but at the same time attempts to enhance understanding, concepts, ability, or skills (Kemmis et al., 2014). In this study, the first author (Dana) and the participants actively engaged in the negotiation of planning, taking action, observation, and reflection required to integrate TPACK activities in EFL material development. Participatory action research attempts to facilitate researchers sharing power with the participants to create meaningful learning experiences by motivating their active participation in decision-making (Avgitidou, 2020). Dana facilitated the participants' engagement with the sample activities and tasks. Dana also negotiated with the participants to encourage the participants to integrate CALL in the EFL material development.

The PD project was situated in a group of State Islamic Senior High Schools located in East Java in Indonesia under the management of the Ministry of Religion and Affairs (MORA). In conducting this study, Dana negotiated with the school stakeholders, including the Principal and Head of the Curriculum Department of the largest host school, to ask permission to conduct CALL PD workshops with the English teachers. The role of negotiation was crucial in the study to build rapport, and enable networking (Vuban & Eta, 2019). The study also aimed to ensure

the observance of ethical considerations to guarantee autonomy, justice, and beneficence for the participants (Lewis & Graham, 2007).

3.2. The participants and research procedures

The 21 participants (4 male and 17 female) were selected by a purposive sample of 16 Islamic schools: six from the host of State Islamic Senior High School and 15 individuals representing other schools. All the EFL teachers from the 16 schools were invited to attend the workshop and all agreed to join. Fifteen of the schools were Islamic high schools from rural areas. The participants were asked to join the study voluntarily, and they could withdraw at any time. The participants all completed a participant consent form, and all participated in the workshops. Just over half of the participants (11) were young teachers, around 25-30 years old, and the rest were senior teachers aged 40 to 50 years old. All the participants had at least three years of experience teaching EFL in the Islamic High School context. Most of the participants were from the host School (State Islamic Senior High School) which was located in an urban area and were aware of the use of CALL in EFL teaching including the use of video, LCD, and the Internet. The remaining teachers were from rural schools with little to no experience of CALL.

Before the workshop, the participants were asked to complete an online reflective journal to share their experiences on the implementation of teaching English in Islamic contexts. After that, the participants engaged in the CALL material development workshops. Workshop 1 was divided into two shorter workshops (Part A & Part B) on consecutive days of the 11th and 12th of January 2020. Workshop 2 was held a month after, on the 9th of February 2020. In the first workshop (Part A & Part B), the teachers took on the role of students and participated in activities using sample material and activities developed by the researchers, including flipped classroom activities, digital poetry, and digital storytelling. Then they gave feedback on the relevance of the material and activities to their local Islamic school context. In the second workshop, the participants were supported to create their own sample materials and were encouraged to use these materials in their own EFL classrooms. Lastly, almost a year after the final workshop, the participants wrote a reflective journal on their perceptions of implementing the material design method that incorporated TPACK for teaching EFL in Islamic school settings.

3.3. Data collection and analysis

Since the data collected was elicited within a naturalistic environment before, during, and after PD workshops, a broadly qualitative approach was taken to data collection and analysis. To

capture the needs and experiences of the participants prior to the workshop, we utilized reflective journal entries. We also employed reflective journal entries to describe the experiences of the participants after the workshop and the implementation of CALL and the TPACK framework in their classrooms. The reflective journals allowed the participants to express their thoughts and feelings as a part of the learning experience (Dunlap, 2006). The study also employed focus group discussion (FGD) during the workshops exploring the participants' responses and perspectives of the workshop. In the FGD, Dana wrote brief field notes to capture the flow of the discussion. To ensure the participants could behave as naturally as possible, Dana did not use audio or video recording. Dana also followed up with participants after the workshop to ensure that he had accurately reflected their perspectives in his field notes (Phillippi & Lauderdale, 2018). Finally, the last data source was the artefacts the participants developed as part of the workshop process, including their digital storytelling, digital poetry, and online discussions.

All the data from reflective journals, FGD, and assignment artefacts were transcribed and analysed using Braun and Clarke's (2006) thematic analysis. The steps of thematic analysis are 1) becoming familiar with the data, 2) generating initial codes, 3) searching for themes, 4) reviewing themes, 5) defining themes, and 6) writing up (Braun & Clarke, 2006). The explanation and comprehensive example of how the data was analysed can be seen in the steps outlined below:

Step 1: Become familiar with the data

At the beginning of the qualitative data analysis, Dana translated the focus group discussion and reflective journal data produced in Bahasa Indonesian into English. All the authors read and re-read the data to become familiar with it.

Step 2: Generate initial code

After we were familiar with the data, we reduced the data to highlight the excerpts that have potential correlation or relevance with the specific research question. We had initial ideas about codes when data familiarization was completed. For example, we considered highlighting the statements that the participants repeatedly addressed about the issue of 'agentic actions'. Then we separated and grouped the set of excerpts for coding.

Step 3: Search for themes

After we highlighted and grouped the data according to patterns that related to the research questions that indicated answer to the research questions, we labelled the data with a theme. For example, for those excerpts showing the agentic action of participants, we assigned the theme of ‘learning agency’. A theme is characterized by its significance (Braun & Clarke, 2006). In that example, we gave the theme of ‘learning agency’ in answer to the second research question on the impact of the workshop on the participants. Below is an example of coding and searching for themes.

Table 1. Table of the example coding and search for a theme

Theme: Learning agency
Codes:
“This is the first time I implemented LMS with Edmodo, I will implement in my classroom.” (Participant 1, FGD, fieldnote, 11 January 2020)
“For me, I learned something new teaching media of poetry using a digital platform.” (Participant 2, FGD, fieldnote, 12 January 2020)
“After practicing DST, I got additional knowledge about teaching model through digital platforms through telling story that are mediated by pictures.” (Participant 3, FGD, fieldnote, 12 January 2020)
“It is very interesting, I got other new teaching media that can increase creativity and enthusiasm in the teaching and learning process”. (Participant 4, FGD, fieldnote, 12 January 2020)

Step 4. Review theme

In this step, we reviewed the themes and identified whether the codes supported the theme. We also checked whether that theme was representative of the codes. We re-read the data set again and elicited the key features that were relevant to the research questions.

Step 5. Define themes

In this step, what is important to notice is the refinement of the themes and identifying the essence of what the theme is about to address the research question (Maguire & Delahunt 2017). For example, when defining the themes above about learning agency, the participants’ agentic choices showed how the participants took agency within the professional development session by adapting what they had learnt and taking a *new* approach towards material development.

Step 6: Write-up

In the last step, we unpacked the themes and connected them to the research questions. Then we discussed each phenomenon with the related literature.

3.4. Workshop development and activities

Based on the pre-workshop reflective journals written by participants, we developed a professional development workshop that would support teachers in developing CALL activities, integrated TPACK and would be relevant to the Islamic school context. We created sample materials based on the challenges in implementing TPACK activities in material design identified by participants in the first reflection that focussed on needs analysis. The most challenging aspect of implementing CALL from the participants' perspectives was to creatively design and elaborate activities that demonstrated all aspects of TPACK and engaged students in active participation and meaning making in English (Tafazoli et al., 2019).

To address this issue, we designed the workshop with the following activities: flipped classroom, digital poetry, and digital storytelling. Dana demonstrated Technological Pedagogical Knowledge (TPK), Technological Content Knowledge (TCK) and Pedagogical Content Knowledge (PCK) in the role of the teacher as well as explaining the rationale for our selection of pedagogies, technologies, and content while the participants took on the roles of students. The sample materials topics were aligned with the Indonesian senior secondary English language curriculum that addressed character education values including friendship, living in peace, and harmony.

In the workshop, to begin with, Dana started sharing CALL activities by teaching the participants processes and practices of using a flipped classroom. A flipped classroom is a mode of learning instruction that organizes and connects students' in-class activities and out-of-class study in an integrated technology approach (Hung, 2015). In the workshop, participants were also guided to be familiar with the Edmodo App as a platform for the online learning approach. Dana shared a video on Edmodo on the topic of 'friendship' along with a discussion forum which the learners could access before the class or at any time to illustrate the nature of the flipped classroom approach. The teachers in the role of students watched the video prior to the class and answered some questions. The goal of the material/activity in class was to learn to analyse and summarize news items drawing on the pre-work the students had done. The video can be accessed at: <https://www.youtube.com/watch?v=EQWsoPH2dLg>. The participants could explore the film and answer questions to understand the background and refine their understanding of the story. The rationale for doing the activity was that participants could practice autonomous learning instead of face-to-face interaction. This activity would be an

experience to facilitate the students as a role model for the students to keep learning English outside the classroom practices. Dana also encouraged the participants to engage with the activity in the online discussion. A screenshot of the discussion forum on the online platform is provided in Figure 1 below.

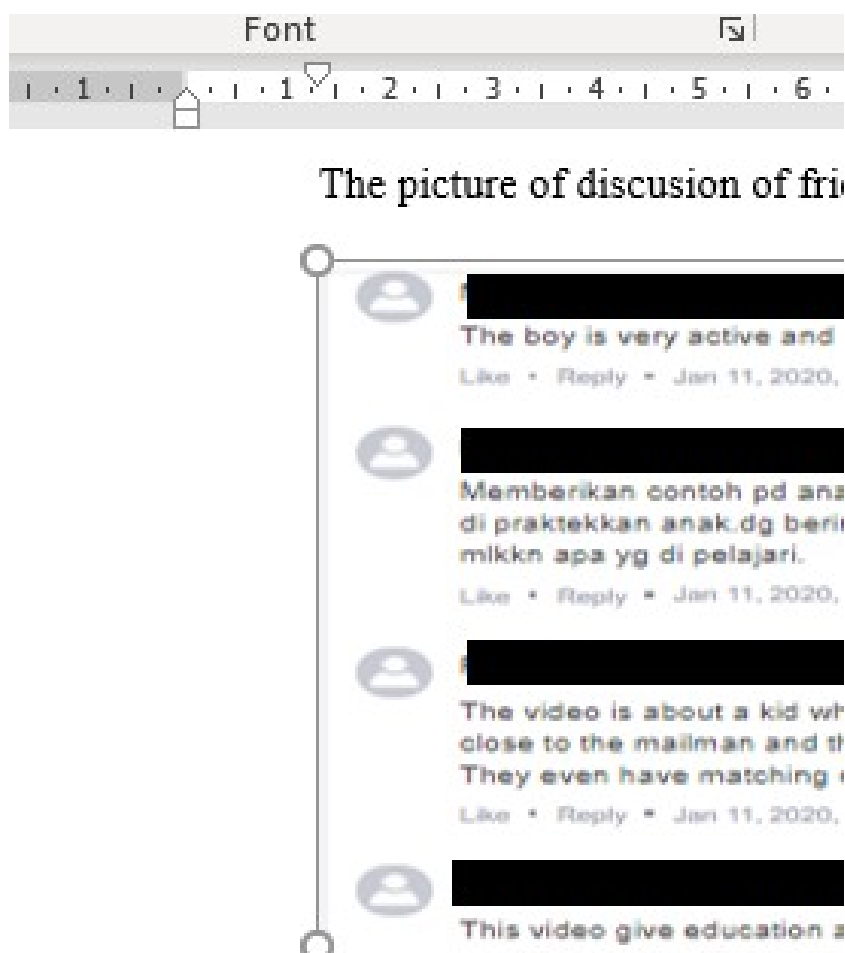


Figure 1. Screenshot of online discussion

During the flipped classroom class time activity, the participants were guided to summarize and find the moral in the news item building on the guided questions. The workshop focused on introducing the participants to an online discussion activity. The workshop activity modelled the characteristics of a flipped classroom where the students could access the online material and discussion, then engage with or clarify the concept or topics in the classroom with the guidance of the teacher.

The second activity was creating digital poetry. Dana presented how participants could engage in creating Haiku digital poetry. Haiku poetry is Japanese poetry, usually a short form of a poem with a 5-7-5 syllable pattern (Blasko & Merski, 1998). In this workshop, Dana

combined Haiku poetry with a digital format. The rationale to write the Haiku poetry on a digital platform was to use a multimodal approach and enhance the participants' creativity in using technology by Canva Apps. Through the Canva Apps, the participants could design their Haiku poetry with pictures and colourful templates. The product could be uploaded into Edmodo as learned in the previous activity.

The last workshop was trialing digital storytelling (DST) for teaching English. The participants worked collaboratively in groups to create a DST product about living in peace and harmony. DST can be defined as a storytelling activity that combines multimedia such as text, still/moving images, sound, and film (Robin, 2008). The reason for integrating this activity is that, based on the empirical findings, numerous scholars claim that DST assists the student in explaining the complex concepts and content through narrative and metaphor (Oskoz & Elola, 2016; Sadik, 2008; Taylor et al., 2018). Furthermore, DST is an effective meaning-making activity to express identities and practice the target language while creating a product in a multimodal text (Vinogradova et al., 2011). Dana demonstrated a sample DST on the topic of inner peace using his own photo collection. He encouraged the participants to create a DST based on their own photos to promote inner, interpersonal, intergroup intercultural/international, and ecological peace. The result of the dynamic engagement of the workshop is explained and sample of the artefact of the activities is provided in the findings and discussion sections below.

4. Findings

4.1. Perceptions prior to the professional development CALL workshops

The pre-reflective journal data suggested that most participants had little or no experience of using CALL and elaborated TPACK in the Islamic school context to teach English, although the staff from the urban school were aware that CALL activities were encouraged in the curriculum. Only three participants mentioned using technology or multimedia at all in their classes as reflected in the extracts below:

I divided the students into groups and ask them to collect caption material from various sources, such browse from *Google*. Then asked them to discuss and present the material with their respective groups, what exactly is the caption, its purpose, and types. (Participant 2# Journal entry 1, 10 January 2020)

I use videos in teaching analytical expositions because students find it difficult if they have to write directly or do not even know what to write, by presenting several videos related to the motion to be written, videos can be a stimulus for a writing framework that can then be developed. (Participant 3# Journal entry 1, 10 January 2020)

I usually ask student to see the *pictures* and *sometime photos* from their cell phone... in order that they can explain what the content is. (Participant 16#Journal entry1, January 2020)

These participants' reflections showed that although they might have used CALL in the past, they had not necessarily followed up activities with engagement in class to make meaning in an EFL context. Technology was used only as a prompt for students to undertake in class activities and they appeared to lack CALL literacy or TPACK, especially technological pedagogical knowledge (Hanafi et al., 2021).

Even among participants who had used CALL before, the reflective journals focussed almost entirely on concerns related to face-to-face teaching. In their reflective journal entry, Participant 16, summarized what most of the participants highlighted as their greatest need: "Extra time for [face-to-face] English lessons" (Participant 16, Journal entry 1. 10 January 2020).

Almost all reflected the perspective that face-to-face teaching was the only possible option to support learning. This is in contrast with the literature that emphasizes the positive impacts of online platforms for language learners and particularly highlights the ability to engage in self-paced autonomous learning. For example, Moradimokhles and Hwang (2020) argue that online learning offers flexibility, fosters student-to-student interaction, facilitates the students' learning process, and helps create an effective learning climate. Overall, the pre reflective journals show that the participants had limited knowledge about the affordances of technology in language learning, limiting their integration of pedagogies fully utilizing technologies. This emphasis reinforces the teachers' dependency on the textbook and limits their exploration of content and pedagogies that are representative of their local culture and more engaging for their students.

4.2. Participants' perspective of TPACK affordances after CALL professional development workshops

Based on the participants' experience in engaging with the sample materials and doing tasks in the first workshop (Part A and B), they gave feedback and comments during the FGD. The

participants' data showed that the workshop gave the participants new experiences, knowledge, and resources enhancing their TPACK. The participants said that:

This is the *first time* I implemented Edmodo, I will use it in my classroom. (Participant 1, FGD, fieldnote, 11 January 2020)

For me, I learned *something new* teaching media of poetry using a digital platform. (Participant 2, FGD, fieldnote, 12 January 2020)

After practicing DST, I got *additional knowledge* about teaching model through digital platforms through telling story that was mediated by pictures. (Participant 3, FGD, fieldnote, 12 January 2020)

It is very interesting, I got other *new* teaching media that can increase creativity and enthusiasm in the teaching and learning process. DST is an excellent activity of practicing speaking, listening, writing, listening, and reading in digital platform. Students can record their speaking or writing of the story, they also be able to listen and read their story digitally as a reflective activity to enhance the English skill. (Participant 4, FGD, fieldnote, 12 January 2020)

This workshop inspired me to implement *another tool*, I used to teach with brochures, realia, and newspapers. (Participant 5, FGD, fieldnote, 12 January 2020).

They appeared to be inspired by the first two-part workshop, believing that it would increase their creativity and they appeared to have increased enthusiasm for using the demonstrated CALL activities in their classroom.

The process of active learning as students assisted the participants to practically develop Pedagogical, Technological and Content knowledge. For example, by attempting the activities in the role of students, they found the new features on their laptop or cell phone for editing the story on the digital platform.

These experiences developed more than just technological content knowledge. As highlighted by Participant 3 and 4, the most important aspect of the technologies were their pedagogical affordances to engage students in active learning of the English language. The participants' enhanced belief in active learning pedagogies is further demonstrated in the following extracts:

After I engaged in the DST activity, I believe that pictures can stimulate students to make sentences and train students to be *active in writing* to make it easier to speak in the collaborative project of DST. (Participant 6, FGD, fieldnote, 12 January 2020)

After I engaged in the DST activity, *I am pretty sure* that pictures can *stimulate* students to make sentences and train students to *be active* in writing to make it easier to speak in the collaborative project of DST. (Participant 7, FGD, fieldnote, 12 January 2020)

I think, the students can *actively engage* with the activities of creating story through DST. (Participant 8, FGD, fieldnote, 12 January 2020)

Therefore, CALL technologies have moved beyond being merely a stimulus as highlighted in the pre-workshop excerpts to being an active engaging pedagogy inside and outside of the face-to-face classroom. Most importantly, given the previous reliance on the textbook, several participants mentioned increased confidence in moving beyond the textbook both during the workshops and afterwards in their written reflections. As noted by Participant 13:

...especially, for me *who initially taught 75% of the time from the textbooks* and might make it boring for my students, but with the meeting yesterday it opened a mindset and fostered a new enthusiasm for innovation in the classroom. (Participant 13, reflective journal 2)

In the workshops, the participants also provided feedback on the activities and character education content from their cultural and religious perspectives. For example, they highlighted that one of the images provided to demonstrate peace between a couple with the male person's arm around a female, was too intimate for an Islamic setting. They also recommended linking each of the peace education themes and sets of activities with a *sura* (verse) from the *Holy Quran*. This ability to demonstrate agency and confidence in their content knowledge supported the participants in more confidently developing their own material and activities as well as their technological and pedagogical knowledge. For example, one of the groups of participants included *sholat* (ritual prayer) in their DST story on building inner peace. In teaching with digital poetry, the participants also used religious discourses to express their values as demonstrated in the material in Appendix A. They were therefore able to elaborate their pedagogical content knowledge on character education related to peace in a way that was relevant to the Islamic School context.

In the second workshop, the participants created their own material and were encouraged to continue to develop their own materials, some of which is provided in the Appendix A. At the end of 2020, they were asked to reflect on their implementation. The period of implementation coincided with the periodic shutdowns and fully online learning interspersed with face-to-face and some online learning due to the COVID-19 pandemic. They reported

continued use of technologies to encourage active learning and motivation as reflected in the reflections below:

I used google classroom, so that students can access the sources through the internet, and this activity will motivate in learning English (Participant 9, Reflective journal entry 3, 15 December 2020)

I asked students to create a collaborative role play project, the upload to Edmodo. Through this activity, students could engage in the online discussion (Participant 10, reflective journal entry 3, 18 December 2020)

During the pandemic, I asked the students to create a drama digitally. I asked the students to edit and combine the part of the drama in a digital storytelling format (Participant 12, reflective journal 3, 10 January 2021).

Increasingly, the participants were using online learning to support face-to-face meeting. Before the workshop the participants focused on face-to-face interaction reporting repeatedly on a lack of face-to-face time. However, after the workshops, the value of the online interactions to support face-to-face meetings was increasingly evident with all the participants noting that they had used Edmodo to upload material and facilitate discussion with students. Despite this positive outcome, it is unclear whether participants would have continued to draw on the TPACK they had developed during the workshops, if it were not for the COVID-19 periodic shutdowns and the need to increasingly rely on online and CALL activities to supplement face-to-face teaching. As one of the participants noted on social media, “Lucky that we had the workshops so I can know and implement online learning during the pandemic” (Anonymous Participant).

4.3. Participants’ perspectives of challenges and barriers during and after the workshop

The participants also reported on challenges during the workshop and sustainably implementing CALL pedagogies after the workshop. A major issue faced by participants when implementing CALL activities was the availability of a reliable Internet connection. Many of the participants could not connect to the school Wi-Fi during the workshop. To address this issue, Dana grouped the participants to share the smartphone/laptops and Internet Wi-Fi connection with participants of the host organisation who were able to connect and/or participants who were able to use their phones as a hotspot for others. This enabled the participants to complete the activities during the workshop. The participants also worked together with Dana to identify low-technology options for each of the activities.

Several participants during the FGD discussion and in their reflective journals after the workshops noted the challenges of access to the Internet in rural areas with intermittent signals and no connection in some areas. Another challenge that some teachers reflected was school policy. Some of the schools prohibited students from using any technology on school property and some lacked computer laboratories or Internet connection for CALL pedagogies.

Due to the limited time and technological challenges in the second workshop, one group of four participants did not manage to finish their set of activities. It became clear that participants who had no TPACK at the start of the workshops needed additional time and practice and structural issues including resourcing of some schools and changes of regulation were needed to make effective CALL sustainable at those institutions.

5. Discussion

As reflected in the TPACK-in-action framework (Chai et al., 2013), this study also demonstrated the impact of a combination of intrapersonal, interpersonal, cultural/institutional, and physical/pedagogical factors on participants' development of TPACK and EFL materials appropriate to an Islamic school setting. Even though the participants only participated in a short series of practical professional development workshops in CALL, the experience had a significant impact on the practice of the participants. In terms of intrapersonal factors, the participants interactions with the workshop facilitator, the sample materials, and others, resulted in a more positive response to technology-based pedagogies. The workshops also enhanced the teachers' belief in the pedagogical affordances of technologies to engage students during the lesson and help them enhance their English language proficiency independently. By practically engaging as students, then providing feedback as teachers and then developing their own materials, the participants were able to build their CALL confidence (Liu et al., 2017) and shift from a textbook orientation to more active CALL teaching activities.

As demonstrated by Ansyari (2015), in our study, the interpersonal element of Participative Action Research supported the participants in their EFL material skill development. For example, when exploring the features of digital tools, the participants supported each other with unfamiliar icons in the Inshot application. Our study corroborated the findings of Bustamante (2020), that by experiencing the pedagogy and discussing its theoretical underpinnings, the participants were able to better understand and integrate all aspects of TPACK. For example, by using online discussion tools in Edmodo, collecting and using

pictures in DST and writing their own Haiku poems, they experienced the pedagogy and then discussed its affordances and challenges and adapted it more effectively to their own context.

This process also allowed the participants to reflect on cultural/institutional factors and take agency in CALL development. The teachers were able to identify cultural, religious, and institutional challenges related to the textbook and provided material. Then, through the PAR process, they were able to draw on their Islamic culture and religion as a bridge for character education and language learning, thus increasing their confidence and agency (Munandar & Newton, 2021).

Our findings revealed barriers related to physical/technological factors in that some Islamic schools in this study had limited access of the Internet, digital tools and the school policy that restricted for students to use devices such as smartphones in the schools. The participants also reflected a need for more and ongoing professional development. These findings reflect those of Hanafi et al. (2021) who noted that Indonesian Islamic schools required a systematic approach to integrating technology in teaching that included sustained training programs and better technical facilities in the schools. Interestingly, the PAR project had an immediate effect on the host school principal who undertook to change the policy related to smartphones and devices allowing them to be used in monitored classroom activities.

In this study, the participants' agency was gradually enhanced through practice and awareness (Kitade, 2015), demonstrating, in line with the literature, that a temporal intervention such as professional development can have lasting impacts if the learning ecology takes into account the interplay between personal, contextual resources and constraints (Tao & Gao, 2021).

5. Conclusion

Although the participants in this study demonstrated increased TPACK during and immediately after the workshops, this study occurred within the specific context of the global COVID-19 pandemic and it remains unclear whether the longer term effects were due to the workshop or the need to move online due to COVID-19 restrictions or a combination thereof. Also, as the workshops only focussed on a few activities, the full scope of TPACK related to CALL requires further exploration. However, this study demonstrated the efficacy of participative action research methodologies to build EFL teacher agency and TPACK in an Islamic School community immediately pre- and post-COVID-19. It is hoped that continuing professional development will further enhance CALL pedagogies in this context.

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Appendix A. Digital story telling artefacts

Visual	Narration
	<p>Assalamualaikum warahmatullahi wabarokatuh. My name is xxxx. I am a teacher at Senior High School is xxx Madrassa xxxx. I love my job as an English teacher because Allah loves people who know and teach it to others. Therefore, I can share my English knowledge with them for their future. Furthermore, I can enhance the students' understanding of Islam by using English as the media, giving information about the importance of English related to its benefits to their daily lives.</p>
	<p>In xxxx Madrassa the teachers usually pray (sholat) with their students at the school mosque or schoolyard. It is done to practice them to be on time to do something like doing Sholat together, to make them always doing their obligation activities to Allah SWT to get inner peace by doing it together. So, it will create togetherness in life now and in the future.</p>
