# INDONESIAN EFL TEACHERS' APPLICATION OF TPACK IN IN-SERVICE EDUCATION TEACHING PRACTICES

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**ABSTRACT:** *This study examines how TPACK-oriented teaching practice course benefits Indonesian EFL teachers in improving the quality of their EFL instructional designs and teaching practices. It involved 20 secondary school teachers from various areas in the province of East Java. They were taking the Teaching Practice course as part of their education for a master's degree in ELT at Universitas Negeri Malang, one of the leading universities in Indonesia. The teachers attended 16-session course in which they were introduced to TPACK framework and were assigned to make instructional designs based on TPACK framework. Moreover, they were asked to teach their colleagues (peer teachers) by using the TPACK-oriented instructional designs. At the end of the course the teachers were given a questionnaire asking the benefit of the TPACK-oriented teaching practice course in improving the quality of their EFL instructional designs and their EFL teaching practices. The result of the study showed that the teachers benefited a lot from the TPACK-oriented teaching practice course and they have successfully prepared instructional designs and performed the teaching practices by applying TPACK framework.*

**KEYWORDS:** TPACK Famework, Teaching Practice Course, Secondary School Teachers, Instructional Design.

## INTRODUCTION

A decade ago, Mishra and Koehler (2006) introduced a conceptual framework for integrating technology in education which they called the "technological pedagogical content knowledge" (TPCK) framework. The framework has attracted a lot of attention from experts in educational technology and teacher professional development areas. In its later development, the TPCK framework was renamed as "TPACK" and pronounced as "tee-pack" for easier recollection (Schmidt, Baran, Thompson, Mishra, Koehler, & Shin, 2009).

In light of TPACK framework, technology integration is considered as a complex multidimensional process requiring understanding of the reciprocal dynamic relationships between three knowledge bases: pedagogy, content, and technology. According to Mishra and Koehler (2006), there are seven constructs in the TPACK framework. They are:

(1)  *Content knowledge* (CK), which is known as knowledge of subject matter,

(2) *Technology knowledge* (TK), which is known as knowledge of various technologies,

(3)  *Pedagogical knowledge* (PK), which is known as knowledge of the processes or methods of teaching,

(4)  *Technological content knowledge* (TCK), which refers to knowledge of subject matter, presented by using technology,

(5) *Technological pedagogical knowledge* (TPK), which refers to knowledge of the use of technology to implement different teaching methods,

(6) *Pedagogical content knowledge* (PCK), which refers to knowledge of teaching methods for different types of subject matter, and

(7) *Technological pedagogical content knowledge* (TPACK), which is understood as as knowledge of the use of technology to implement teaching methods for different types of subject matter.

Studies on TPACK have been conducted across research designs including survey study (e.g., Abbitt, 2011a; Lee & Tsai, 2010), theoretical study (Abitt, 2011b; Harris, Mishra & Koehler, 2009; Koehler & Mishra, 2009), basic interpretative study (Pamuk, 2011), delphi survey (Yeh, Hsu, Wu, Hwang, & Lin, 2014), evaluation study (e.g., Chai, Koh, & Tsai, 2010), case study (e.g., Hofer & Swan, 2006; Niess, 2013), and instrument design (e.g., Lux, Bangert, & Whittier, 2011; Schmidt et al., 2009; Tseng, 2014).

With the growing body of knowledge of TPACK, some researchers have developed a particular flavor of TPACK. For instance, Lee and Tsai (2010) used the term TPCK-Web in order to evaluate teachers' perceived self-efficacy in terms of Web use to assist their teaching. TPACK-EFL (Baser, Kopcha, & Ozden, 2015) was proposed to evaluate TPACK in EFL subject matter. TPACK-practical (Yeh, Hsu, Wu, Hwang, & Lin, 2014) focuses on the TPACK that teachers practically apply when reacting to what they encounter in their actual teaching practices. Mathematical TPACK was proposed by Guerrero (2010). PT-TPACK was proposed by Lux, et al. (2011) to assess pre-service teachers' perceptions and understanding of TPACK.

Researchers mostly conduct TPACK-related studies in Mathematics and science (e.g., Guerrero, 2013) and later in social studies and language domain (see Voogt, Fisser, Roblin, Tondeur, & Braak, 2012; Wu, 2013). The most frequent subjects of the studies are pre-service teachers (e.g., Chai, et al., 2010; Lux, et al., 2011; Pamuk, 2011; Graham, Borup, & Smith, 2012; Koh, Chai, & Tsai, 2013; Sahin, Celik, Akturk, & Aydin, 2013), followed by in-service teachers (e.g., Chai, Chin, Koh, & Tan, 2013; Guerrero, 2013), and the less frequent is the study combining pre and in-service teachers. TPACK studies have been conducted in the USA and later in Mediterranean and Asian countries such as Vietnam, Singapore, China, Turkey, and Malaysia. More studies of teachers outside the USA are still needed in order to gain the possibility of cultural differences in teachers' TPACK perceptions (Koh, Chai, & Tsai, 2010).

An important study of teachers' TPACK was done by Niess (2013). In a case study conducted for three years and involved Mathematics teachers, Niess used five stages of developmental process to describe Mathematics teachers' TPACK. The five stages include recognizing, accepting, adapting, exploring, and advancing stages. Niess found that, in the first (recgnizing) stage, teachers are found to have ability in using spreadsheet and recognize the potential of spreadsheet as a tool to do Mathematics. In the *accepting* stage, teachers started to recognize the capabilities of spreadsheet as a tool for problem solving and for teaching some topic in Mathematics. When teachers are in the *adapting* stage, they are already engage students to work with spreadsheet but more as additional tool to enrich students' understanding after learning the mathematics. Teachers achieve *exploring* stage when they already infuse spreadsheet to carry learning and perform consistent exploration to integrate spreadsheet in teaching and learning Mathematics. In the *advancing* level, teachers translate the concept of mathematics using spreadsheet in the form of learning activities which support students'

thinking and understanding. Teachers also perform persistent motivation and exploration of the use of spreadsheet in planning, implementing, and evaluating teaching and learning process.

Within the aforementioned studies, it can be summarized that TPACK as a framework has been developed rigorously. It has been implemented as a research framework and as a framework for teaching practices. The most frequent investigated subject matter is Mathematics and science. This tendency might happen since those subject matters contain more abstract knowledge so that teachers need the integration of Information and Communication Technology (ICT) to carry learning.

Studies on TPACK in the English as a foreign language (EFL) context has been rarely undertaken. Whereas, the study of TPACK in EFL context is also prominent because English as a foreign language provides the same challenge as Mathematics and science. Out of the limited number of studies, one study was carried out by Wu and Wang (2015). It explored TPACK among 22 in-service EFL teachers at elementary schools in Taiwan. Baser et al. (2015) develops a TPACK instrument for pre-service EFL teachers while Tseng (2014) develops instrument for assessing EFL teachers' TPACK as perceived by EFL students. The study reveals that the TPACK of the teachers was in good quality.

In Indonesia, a research study on TPACK was conducted by Mahdum (2015) who investigated the use of TPACK among Senior High School EFL teachers in Pekanbaru by using self-assess questionnaire. However, research on EFL professional development within the TPACK framework has never been conducted. Research commonly reports the components of TPACK separately. For example, Cahyono (2010) reviewed research papers submitted by Indonesian EFL teachers for publication entitled "Teaching English by Using Internet Resources". The research papers submitted by the teachers focused on the use of Internet applications of various types (e.g., social media, video-based application, learning management system, and virtual classroom). However, the research papers did not necessarily aim to teach students any of the content knowledge. In addition, whenever content knowledge is emphasized, the Internet applications were not used in a certain pedagogical sequence. Overall, the research papers have not promoted the TPACK framework as an integration of technological, pedagogical, and content knowledge. Another example can be found in Cahyono (2014) who reported the results of research on the quality of Indonesian EFL teachers in teaching by using pedagogical content knowledge at the Indonesian senior high school context. The results of the research showed that English teachers' pedagogical content knowledge needs to be improved. The study also reported that the pedagogical content knowledge of the Indonesian EFL teachers in senior high schools could be improved by using a lesson study program (for more explanation about lesson study see Lewis, 2009). Thus, a study which investigates the application of TPACK for Indonesian EFL teachers need to be carried out.

In light of the background of the study, the present study focuses on the introduction of TPACK framework for the teaching of English among Indonesian EFL teachers from various secondary schools pursuing an in-service teacher training education program for their masters' degrees. It aims to answer two research questions:

a. To what extent do Indonesian EFL teachers improve the quality of their instructional designs and teaching practices after the introduction of the TPACK framework?

b. How do Indonesian EFL teachers perceive the application of the TPACK framework in their Teaching Practice course?

# METHOD

This study investigated the application of the TPACK framework in a *Teaching Practice* course as part of in-service teacher education program for a masters degree at Universitas Negeri Malang, one of the leading universities in Indonesia.. The participants of this study were 20 secondary school teachers from various areas in the Province of East Java. Out of the total number of participants, 7 teachers teach in big cities and 13 teachers teach in small towns. Based on gender category, there were 7 male and 13 female teachers. The teachers have different length of experiences in teaching EFL: 2 teachers have less than five-year experience, 11 teachers have experiences in teaching from 5 to 7 years, and 7 teachers have taught for more than ten years. In terms of schools the teachers teach, 5 teachers teach junior high schools, 6 teachers teach senior high schools, and 9 teachers teach vocational high schools.

The *Teaching Practice* course is aimed at providing the teachers with opportunities to teach their colleagues about the subject matters they teach in their schools, namely EFL. Because of the nature of the study program which is given as in-service teacher education, the teaching practice course provides knowledge and skills based on current trend of development of theories and practices related to English language teaching. Especially for this group of teachers, they were introduced to the TPACK (Technological Pedagogical Content Knowledge) framework which has been a dominant issue in the context of teacher professional development. Accordingly, although the teachers might have years of experience in teaching EFL in their schools, they learnt how their teaching experiences are viewed from the latest theoretical and practical development.

The *Teaching Practice* course consisted of 2 stages: practice in making instructional designs and teaching practices. In the first stage, a series of lectures was given to the teachers to introduce them to the basic areas of the course. In the lecture sessions, they were taught how to make an instructional design. An instructional design is a document that teachers need to prepare in order to guide themselves in the teaching and learning process. The instructional design replaced the lesson plan format that is usually used at schools. Compared to a lesson plan, an instructional design is much simpler as it contains only a number of aspects, leaving aspects which are common in a lesson plan such as basic competence *(kompetensi inti),* indicators, and assessment. An instructional design is also more practical than a lesson plan because it can be applied by teachers from various schools and other educational institutions as it does not require level on the basis of the grades, but based on competence, namely beginners, intermediate learners, and advanced learners. The instructional design consists of the following aspects: (1) goals, (2) language function (use), (3) language focus (usage), (4) level, (5) time, (6) preparation, and (7) steps. Then, the teachers were asked to make an instructional design. To help teachers make their own instructional design, a model of instructional design was used as a basis for them to develop their own instructional design. At the end of this stage the teachers had to submit their preliminary instructional designs.

In the second stage, the teachers were prepared to perform their teaching practices. However, the teaching practices were not conducted in the real schools but in the university in the form of peer sessions, meaning that each teacher teaches his/her colleagues in the classroom. For the purpose of the teaching practices which were conducted twice in the course, the teachers were asked to prepare 2 instructional designs: one for Teaching Practice 1 and the other for Teaching Practice 2. Before they prepared their instructional designs and performed their teaching practices, a teaching process based on TPACK framework was demonstrated by the lecturer (the first author of this article) in order to show them how a teaching session was conducted

with the integrations of knowledge about content, pedagogy, and technology. A blank form of instructional design was distributed to the teachers before the teaching demonstration. In the demonstration session the teachers (who pretended to be the target students) were taught to learn how to improve their ability in speaking by using information gap principle through animated stories. After the demonstration session was completed, the teachers were asked to fill in the blank instructional design based on the teaching demonstration. In this case, the lecturer guided the teachers by reflecting on the components demonstrated by the lecturer. The process of guiding teachers in completing the blank instructional design resulted in the model of instructional design as shown in the Appendix.

As shown in the model of instructional design, the goal of teaching was to improve students' speaking ability in telling stories from animated stories from the Internet. Accordingly, the language function is telling stories. As it is common in stories, the language focus is in past tense, direct speech, and indirect speech. The expected learners are in the intermediate level from any educational institutions (i.e., junior high schools, senior high schools, and vocational high schools). The things that need to be prepared were videos entitled "The Greatest Treasure" and "The City in Tears" from YouTube, a well-known video-based website. The teaching activities consist of a number of texts which are based on the information gap principles. The elaboration of the steps can be seen in the model of instructional design in the Appendix. Following the lecture and demonstration sessions, the teachers were given two opportunities to have teaching practices.

At the end of the course the teachers were given a questionnaire asking their perception of the benefit of the TPACK-oriented teaching practice course in improving the quality of their instructional designs and teaching practices. Thus, in order to answer the first research question, the instructional designs submitted by the teachers were analyzed in terms of the TPACK components. In order to answer the second research question, the teachers' responses to the questionnaire were analyzed to see how they perceive the application of the TPACK framework.

## RESULTS

### a. The Quality of Indonesian EFL Teachers' Instructional Designs and Teaching Practices Before and After the Introduction of the TPACK Framework

The quality of instructional designs and teaching practices of the Indonesian EFL teachers can be seen in the comparison of the knowledge components used in the Preliminary Instructional Design (PID) (see Table 1), Teaching Practice 1 (TP 1), and Teaching Practice 2 (TP 2) (see Table 2).

**Table 1. Knowledge Components in the EFL Teachers' Instructional Designs in the Preliminary Instructional Design (Before the Introduction of the TPACK Framework)**

| Teacher | TK | PK | CK | TPACK |
|---------|-----|-----|-----|-------|
| 1 | | | √ | |
| 2 | | √ | √ | |
| 3 | | √ | √ | |
| 4 | | √ | √ | |
| 5 | | | √ | |
| 6 | | √ | √ | |
| 7 | | √ | √ | |
| 8 | | √ | √ | |
| 9 | | √ | √ | |
| 10 | √ | | √ | |
| 11 | | | √ | |
| 12 | | √ | √ | |
| 13 | √ | | √ | |
| 14 | √ | | √ | |
| 15 | √ | √ | √ | √ |
| 16 | | √ | √ | |
| 17 | | | √ | |
| 18 | | | √ | |
| 19 | | | √ | |
| 20 | √ | √ | √ | √ |
| Total | 5 | 11 | 20 | 2 |

As shown in Table 1, from the total of 20 teachers who developed instructional designs before TPACK famework was introduced, only two teachers had involved the integration of technological pedagogical content knowledge (TPACK). There were five teachers who already developed the instructional designs on the basis of technological knowledge (TK). In pedagogical knowledge (PK), there were 11 teachers who included the methods/strategy of teaching in their instructional design. All teachers were found to have content knowledge in their instructional designs.

**Table 2. Knowledge Components in the EFL Teachers' Instructional Designs in Teaching Practice 1 and Teaching Practice 2 (After the Introduction of the TPACK Framework)**

| Teacher | Teaching Practice 1 | | | | Teaching Practice 2 | | | |
|---|---|---|---|---|---|---|---|---|
| | TK | PK | CK | TPACK | TK | PK | CK | TPACK |
| 1 | | √ | √ | | √ | √ | √ | √ |
| 2 | √ | √ | √ | √ | | | √ | |
| 3 | √ | √ | √ | √ | √ | √ | √ | √ |
| 4 | | | √ | | √ | √ | √ | √ |
| 5 | √ | √ | √ | √ | | | √ | |
| 6 | | √ | √ | | | √ | √ | |
| 7 | | | √ | | | √ | √ | |
| 8 | | √ | √ | | √ | √ | √ | √ |
| 9 | | √ | √ | | √ | √ | √ | √ |
| 10 | √ | | √ | | √ | √ | √ | √ |
| 11 | | | √ | | √ | | √ | |
| 12 | | | √ | | √ | | √ | |
| 13 | √ | √ | √ | √ | √ | | √ | |
| 14 | √ | | √ | | √ | | √ | |
| 15 | √ | √ | √ | √ | √ | | √ | |
| 16 | | √ | √ | | √ | √ | √ | √ |
| 17 | | | √ | | √ | | √ | |
| 18 | √ | | √ | | √ | | √ | |
| 19 | √ | √ | √ | √ | √ | | √ | |
| 20 | | | √ | | | √ | √ | |
| Total | 9 | 11 | 20 | 6 | 15 | 10 | 20 | 7 |

Table 2 shows that in the first and second instructional designs which were developed after the introduction of the TPACK framework, the teachers' instructional designs showed improvement, more particularly in the inclusion of the technological and pedagogical knowledge. In Teaching Practices 1, technological knowledge was applied by 9 teachers while in Teaching Practice 2, 15 teachers used it. This number exceeded the number of teachers who included technological knowledge in the preliminary instructional design (5 teachers), meaning that the introduction of TPACK framework encouraged teachers to use technological knowledge in their instructional designs and teaching practices. However, the number of teachers who used pedagogical knowledge in their instructional design decreased from 11 teachers both in the preliminary instructional design and Teaching Practice 1 to 10 teachers in Teaching Practice 2. All of the 20 teachers consistently involved content knowledge before and after the introduction of TPACK. In terms of the application of TPACK framework, there were six teachers in Teaching Practice 1 who used technological pedagogical content knowledge. The number increased in Teaching Practice 2 where 7 teachers used TPACK framework in their instructional designs.

The results of the study showed that the EFL teachers benefited a lot from the TPACK-oriented teaching practice course and they have successfully prepared instructional designs and performed teaching practices by applying TPACK framework. Thus, the introduction of TPACK framework in the *Teaching Practice* course was proved to increase the use of the

integration of technological knowledge (TK), pedagogical knowledge (PK), and content knowledge (CK) as shown in Figures 1.
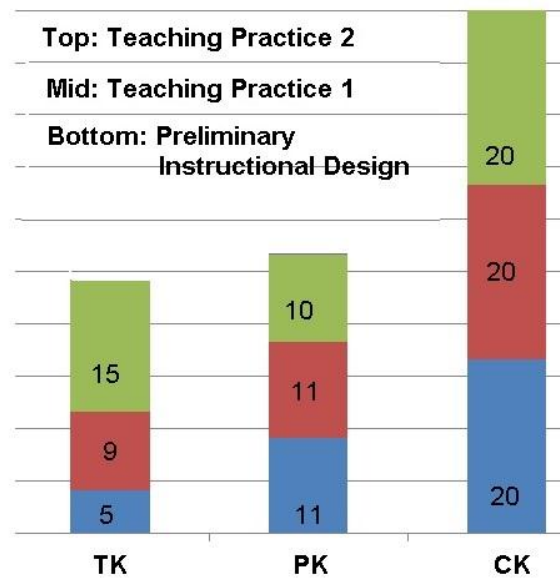


**Figure 1. TPACK in the Preliminary Instructional Design, Teaching Practice 1, and Teaching Practice 2**

Figure 1 shows that in the preliminary instructional design, 8% of the teachers used technological knowledge, 18% of the teachers included pedagogical knowledge, and 34% of the teachers included content knowledge in their instructional designs. In other words, 60% of teachers included the three types of knowledge in the their preliminary instructional designs. After the introduction of the TPACK framework, while all teachers constantly included the content knowledge (34%), more teachers included technological knowledge in Practice Teaching 1 (15%) and in Practice Teaching 2 (25%). As a result, the area that needs improvement decreased from 40% in the preliminary instructional design to 33% and 25% in Practice Teaching 1 and Practice Teaching 2, respectively.

The figure also shows that the introduction of TPACK in the Teaching Practice course helped the teachers to improve the quality of their instructional designs as well as their teaching practices. More particularly, the introduction of TPACK inspired the teachers to explore the use of technological knowledge in their teaching practices. A deeper look into the teachers' instructional designs showed that the teachers used Internet-based application such as social media and YouTube as as the media in the teaching and learning process. In contrast, the pedagogical knowledge decreased from 18% in the preliminary instructional design and Teaching Practice 1 to 16% in Teaching Practice 2. This leads to an assumption that the teachers leave one type of knowledge when they already used 2 types of knowledge namely technological knowledge and content knowledge.

An additional comparison of the use of the three types of knowledge in the preliminary instructional design, Teaching Practice 1 and Teaching Practice 2 is shown in Figure 2.

**Figure 2. The Number of Teachers who Used the Three Types of Knowledge in their Preliminary Instructional Design, Practice Teaching 1, and Practice Teaching 2**

Figure 2 exhibits that the use of technological knowledge improved gradually from the preliminary instructional design to the last teaching practice. However, there was an area that needs to be improved in terms of the use of technological knowledge in teachers' teaching practices. Unlike technological knowledge, the pedagogical knowledge did not increase. There was a gap where teachers need to improve the use of pedagogical knowledge in their teaching practices. Lastly, the content knowledge was consistently applied by all the teachers.

**b. Indonesian EFL Teachers' Perception on the Application of the TPACK Framework**

The results of analysis of the questionnaire are divided into twofolds: the teachers' impression and suggestions toward the application of TPACK as well as their perception on how the *Teaching Practice* course was managed.

Overall, the teachers' responses towards the introduction of the TPACK-oriented instructional designs were good. The teachers felt that the instructional designs were interesting and motivating. The instructional design opened their minds for a new way of planning their teaching. The new instructional design which is simpler than lesson plan eased the teachers in developing their plan for teaching practices. In the teaching practice where every teacher should develop instructional designs with different use of technological knowledge and different pedagogical knowledge, the teachers got the advantages in terms of ideas and experience of becoming a teacher as well as the students during the teaching and learning process. The teachers were happy to get new ideas in teaching which they can apply in their own classroom. They also got the names of the applications which are possible to use in the classroom to support the teaching and learning of EFL. In addition, most of the teachers said that they got more insights of the Teaching English for Foreign Language (TEFL) during their learning which enhances the quality of their teaching methods and materials.

However, since the teaching and learning process was in the form of peer teaching where the teachers teach their peers to replace the actual students in the class, the teachers thought that it

would be more contextual if they could teach in the real schools and in the real classrooms with the real students. The small teaching practice class did not represent most of Indonesian schools which have large class of 25 to 40 students. Therefore, the teachers could not feel the atmosphere of the real classroom learning if teaching is conducted in the form of peer teaching. Moreover, they thought that the pupils are much more different from the peers in terms of their prior knowledge and psychological factors. Therefore, the teachers could not experience the difficulty and pleasure of teaching the real students in the teaching practices.

Some of the teachers suggested that the material, skills, assessment and technological application should be listed in the instructional designs. The teachers suggested that the instructional designs should include the material to ease other teachers to use the design without finding more sources or materials and the lists of many technological applications which are interesting and easy to use in the classroom. They stated that the collection of instructional designs could be a useful handbook for teachers who want to teach using the instructional designs made by their fellow teachers. Some teachers also wrote that they need more practices to teach each different skill of English such as practicing teaching listening, reading, speaking, writing, grammar, vocabulary and pronunciation. The teachers also thought that the assessment rubrics are important to put in the instructional design along with the practice in the classroom so that they can learn how to assess tasks for different English skills. All in all, the teachers realized that they need to improve their knowledge on teaching strategies and ability on the use of recent trend of technological knowledge in their teaching practices.

## DISCUSSION

This study sought to evaluate the quality of Indonesian EFL teachers' instructional designs and teaching practices after the introduction of the TPACK framework. This study found that EFL teachers develop their technological knowledge (TK) in their preliminary instructional designs to Teaching Practices 1 and 2. This finding is consistent with Carbova and Betakova's study (2013) which evaluateed the development of TPACK of a teacher, Natalia, as the subject. In the initial process, it is reported that Natalia's technological knowledge has developed first. At first, he teacher started using the technological tool, learned activities that can be conducted using it, learned to use the tool to carry content, and dealt with the technical problems with the new tools. Her technological knowledge is found as having a positive effect on her TPACK, TPK, and TCK so that technological knowledge gives dominant contribution towards teachers' development of TPACK (Koh et al., 2013; Puspitarini, Sunaryo, & Suryani, 2013). It implies that when teaching teachers about a new ICT tool, the instructor should emphasize on TK first since it will be the basis for the teacher to consider the possible pedagogical use of the tool (Koh et al., 2013).

With regards to teachers' pedagogical knowledge (PK), it is found in the present study that the group's pedagogical knowledge did not increase from the preliminary instructional designs to Teaching Practice 1. Indeed, the number of the teachers who employed their pedagogical knowledge decreaseed in Teaching Practice 2. Such phenomenon was also found in the previous studies in which the teachers pose problems in creating their TPK (Pamuk, 2011). Previous studies suggest that one of the factors that might influence teachers' pedagogical knowledge, as the basis of TPACK is teaching experience. Teachers with limited teaching experience tend to have difficulties in making linkages between content and pedagogy (Koh, Chai, & Tsait, 2010). Some studies (Oz, 2015; Lin, Tsai, Chai, & Lee, 2013) suggest that

teachers' gender contribute to the development of pedagogical knowledge. Female teachers pose higher self-confidence in pedagogical knowledge but lower self-confidence in technological knowledge than male teachers. However, this study did not include gender as the investigated variable so that it might be the direction for further studies to concern.

The finding shows that teachers perform consistent Content Knowledge (CK) from the preliminary instrucional design to Teaching Practice 2. Teachers' awareness of content goal was also reported to be consistent both before and after the professional development experience (Harris & Hofer, 2011). From the examination of teachers' lesson plans, teachers in Harris and Hofer's study are reported as having ability in providing teaching and learning activity which fills the demand of curriculum (Hofer & Swan, 2006). It reflects that EFL teachers' content knowledge is already sufficient. The concerns then are to ensure the content is carried out using appropriate pedagogy and technology.

Based on the review of teachers' TPACK, the data indicated that the teachers demonstrated the increasing quality and quantity of TPACK. Borrowing Niess' (2013) five levels of development in the application of TPACK in Mathematics (i.e., recognizing, accepting, adapting, exploring, and advancing levels), we inferred the Indonesian EFL teachers participating in the present study were successfully transformed from recognizing level as shown in the preliminary instructional designs to exploring level as shown in their Teaching Practices 1 and 2. Accordingly, based on the aforementioned review of teachers' knowledge, we would argue that the technological knowledge (TK) and pedagogical knowledge (PK) are the areas that need improvement. In order to have the robust intersection among TK, PK, content knowledge (CK), we would suggest the model for developing EFL teachers' TPACK through upgrading courses are as shown in Figure 3.
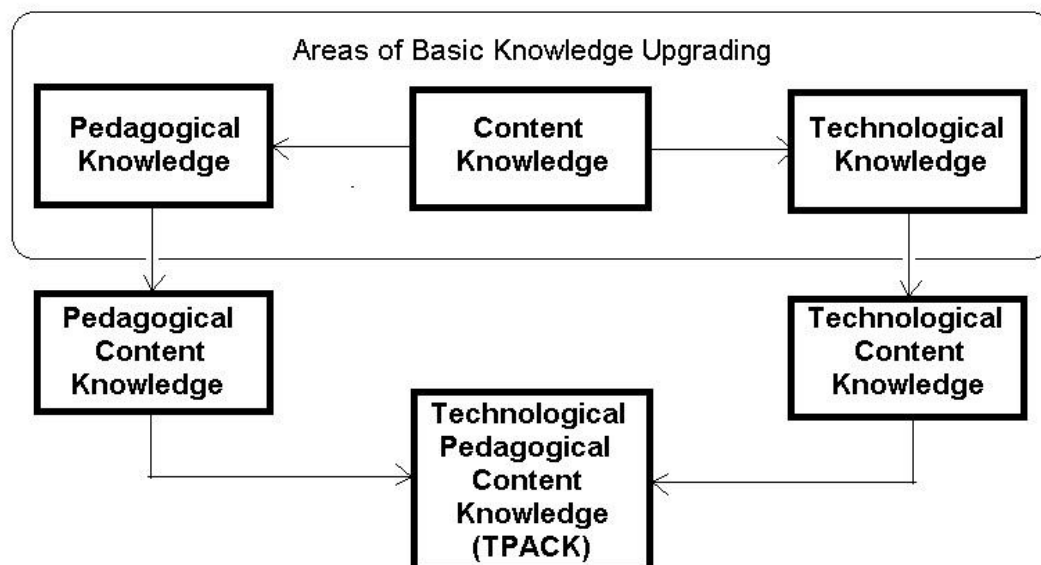


**Figure 3. Model for Developing EFL Teachers' TPACK Courses**

This study also examined the Indonesian EFL teachers' perception on the application of TPACK framework. The teachers responded positively towards the introduction of the new instructional design. They found that the activities were beneficial since they got opportunities

to enhance their knowledge and ability in teaching methodology and materials. They realized the need to improve their knowledge on teaching strategies and ability on the use of recent trend of technological knowledge in their teaching practice. The result is also found in the action research conducted by Cahyono (2014) in which EFL teachers showed their positive responses to the activities to improve their pedagogical content competence. The participating teachers in Harris and Hofer's (2011) study experienced development on instructional designs through a 5-month intervention of TPACK-based professional development. Doering, Veletsianos, Scharber, and Miller (2009) also reported that teachers in their study perceived professional development as an incredible opportunity for the development of their TPACK.

However, as mentioned earlier, the participating teachers perceived that the teaching practices would be more contextual if they could teach in the real schools and in the real classrooms with the real students. Some teachers also wrote that they needed more practice to teach each different skill of English such as practicing teaching listening, reading, speaking, writing, grammar, vocabulary and pronunciation. Such phenomenon commonly happen in Second Language Teacher Education (SLTE) programs, in which teachers found it is problematic when they have to adjust what they got from universities to the schools as the real context (Richards, 2008). However, Richards (2010) argue that learning to teach is a kind of sustainable process of socialization which covers the interaction among the situated setting such as prescribed curricula, the culture of the school, the students' characteristics, teachers' own goals, and some other contributing aspects.

To deal with adaptability and awareness in the development of TPACK among teachers, Farias and Obilinovic (2009), supporting Son (2006), value the importance of feedback from peers that can be gained through networking through Internet applications or social media. Such efforts even help teachers share their personal feeling of teaching and learning experiences (Yang, 2009). By having virtual forum teachers have a pedagogical tool which is unavailable in more traditional teacher education classrooms (Doodly & Sadler, 2013) to collaborate and discuss how to carry out a pedagogical innovation (Espitia & Olarte, 2011) and to make connections between theory and practice (Doodly & Sadler, 2013; Sardegna & Dugartsyrenova, 2014).

**CONCLUSION**

This study has revealed the results of introducing TPACK to the Indonesian EFL teachers taking their Teaching Practice course as part of their in-service education for taking a master's degree. The results of the analysis of the teachers' instructional designs made before and after the introduction of TPACK showed that more teachers included technological knowledge in their instructional designs in their teachng practices (after the introduction of TPACK). They also showed posiive responses to the introduction of TPACK in the Teaching Practice course. However, the teachers still pose low self-efficacy to implement TPACK-oriented instructional designs in their teaching field. Therefore, this study suggests that participating teachers need time to do self-contextualization of TPACK framework they got during the teaching practices to their own specific setting since it is impossible to cover it in the Teaching Practice course offered in the university. The contextualization might take time and need adjustment at some aspects. In addition, we suggest teachers involved in the program initiate an online community of practice focusing on the development of TPACK-oriented instructional designs and teachng practices. This is because feedback from peers and opportunities for sharing ideas and

resources with their fellow teachers across distance will promote deeper understanding of the nature and the use of TPACK. This is especially the case among teachers in EFL context including Indonesia where TPACK framework has not been implemented massively in the practical scope.

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## APPENDIX. MODEL OF INSTRUCTIONAL DESIGN

Improving the Students' Ability in Speaking by Using 'Information Gap' Principle through Animated Stories from YouTube

| 1. | Goal: | To improve students' ability in telling stories through animated stories from YouTube |
|---|---|---|
| 2. | Language function (Use): | Telling stories |
| 3. | Language focus (Usage): | Past tense, direct speech, and indirect speech |
| 4. | Level: | Intermediate learners |
| 5. | Time: | 45 minutes |
| 6. | Preparation: | Video entitled "The Greatest Treasure" and "The City in Tears" from YouTube |
| 7. | Steps: | |

1. Students are divided into two groups.
2. The students from the first group are asked to go out of the classroom, while those from the second group stay in the classroom to watch the first half of the story (The Greatest Treasure).
3. After the students from the second group finish watching they are asked to go outside and the students from the first group are asked to come in to view the second half of the story.
4. After the first group finish watching the second half of the story, the students from the two groups are asked to discuss the story; the students share what they have heard in pairs to have the complete story.
5. After that, the students are asked to watch the second story (The City in Tears) together, but only about 80% of the story.
6. The students are asked to discuss the ending of the story in pairs.
7. Finally, the students the end of the movie.