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## UNRWA EFL In-Service Teachers' Perception of the Application of Tpack in Teaching Listening and Speaking

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### Abstract

The aim of the study is to investigate the English language teachers' perception of Technological Pedagogical and Content Knowledge (TPACK) in the teaching of listening and speaking within the UNRWA (United Nations Relief and Works Agency for Palestine Refugees in the Near East) schools in Jordan. The participants of the study are 69 (39 female and 30 male) full-time English teachers who responded to the TPACK survey questionnaire. The results of the study indicated a lack of Technological Knowledge (TK), a dissociation of Technological Knowledge (TK) with Content Knowledge (CK), a lack of Pedagogical Knowledge (PK) and a lack of Technological Pedagogical and Content Knowledge (TPACK). The study recommends the need for EFL teachers in Jordan to join TPACK-based training workshops, regardless of gender or experience, in order to integrate technology in their teaching to improve their teaching skills and their students' achievements in listening and speaking.

**Keywords:** TPACK; Listening and speaking; UNRWA, EFL in-service teachers' perception.

### وجهة نظر معلمي اللغة الإنجليزية كلفة اجنبية في مدارس الأونروا في دور التيباك (TPACK) في تدريس مهاراتي الاستماع والكلام

#### الملخص

تهدف هذه الدراسة الى التحقق من وجهة نظر معلمي اللغة الإنجليزية كلفة اجنبية في دور "معرفة الاساليب التكنولوجية في تدريس المحتوى: التيباك (TPACK)" في تدريس مهاراتي الاستماع والكلام في مدارس الأونروا (وكالة الأمم المتحدة لإغاثة وتشغيل اللاجئين الفلسطينيين في الشرق الأدنى) في الأردن. ولقد بلغ عدد المشاركين 69 معلم ومعلمة (39 أنثى و 30 ذكر). وأشارت نتائج الدراسة إلى نقص المعرفة التكنولوجية لدى المعلمين المشاركين في الدراسة وعدم قدرتهم على الجمع بين المعرفة التكنولوجية والمحتوى الدراسي بالإضافة الى قلة درايتهم بمعرفة الاساليب التكنولوجية في تدريس المحتوى كنوع مترابط من المعرفة يجمع بين ثلاث جوانب معرفية: التكنولوجيا والمحتوى واساليب التدريس. وأوصت الدراسة بضرورة انضمام معلمي اللغة الإنجليزية كلفة اجنبية في مدارس الأونروا في الأردن إلى ورش عمل تدريبية على أساس التيباك بغض النظر عن الجنس أو الخبرة من أجل دمج التكنولوجيا في عملية التدريس لتحسين مهاراتهم التدريسية وأداء طلابهم في مهاراتي الاستماع والكلام.

كلمات مفتاحية: التيباك؛ مهاراتي الاستماع والمحادثة؛ الأونروا؛ وجهة نظر معلمي اللغة الإنجليزية كلفة اجنبية.

## INTRODUCTION

Original and promising teaching practices encompass technology. Of special interest, EFL teaching has been improved extensively in helping learners accept rather than reject the learning of English language by means of the integration of technology (Hughes, 2005). Of course, teacher's technological knowledge is significant as it decides to run the proper technology, technology, content and pedagogical knowledge. Unfortunately, UNRWA teachers have many problems and obstacles that avert the catering for technology.

To enable EFL learners communicate independently, Bruner, Wongsuwat and Bojanic (2015) asserted the need to use long-term out-class activities as well as social media such as internet, Facebook, music, films and TV which may in turn raise the learners' awareness of language development by providing authentic language contexts. Technology has prevailed now, thus teachers should be flexible and creative in choosing their technological tools to enhance learners' ability to communicate effectively. This gives more grounds to the present study as to respond to such problem in speaking and listening. Interestingly, TPACK, enhances and increases the flexibility, and empowers teachers to handle the technological advances in society via education, due to TPACK's coherent and comprehensive frameworks that enable the successful integration of technology in the teaching-learning process (Angeli & Valanides, 2005).

TPACK is a framework that helps teachers to consider how their knowledge domains intersect in order to teach and engage students effectively with technology. It is an approach that looks at the accommodation of what teachers know (content knowledge), how they teach (pedagogy knowledge), and the role of technology (technology knowledge) in order to affect students' learning. TPACK model not only trains pre-service but also in-service teachers to be able to use technology properly in the classroom. Learners must also be trained to use the language creatively and interactively in a meaningful way and through technology. To achieve these goals, teachers must develop their knowledge and adopt new models that apply technology in teaching and learning oral skill's challenges. TPACK enables teachers to integrate knowledge of technology into the curriculum and instructional practices. For this reason, educational institutions must prepare and train teachers to integrate technology into teaching (Mishra & Koehler, 2006).

Many studies (e. g. Baran, Chung, & Thompson, 2011; Koh & Sing, 2011; Keser, Yilmaz & Yilmaz, 2015) asserted that TPACK can develop pre-service and in-service knowledge in integrating technology into teaching and learning process. These studies reported that TPACK helps teachers in designing technological lessons and activities, and in developing some suitable strategies to present the technological materials to meet the outcomes of the content. Clearly, this means how TPACK connects the theoretical and practical issues together in the teaching and learning process. Bostancioglu (2014), for example, provided teachers with EFL-TPACK questionnaire as a self-assessment in order to identify the areas of knowledge that they need to develop. The researchers concluded that integrating technology into English language curriculum and English pedagogical practice may create long-life learners.

TPACK (is an acronym for Technological, Pedagogical, and Content Knowledge) discusses the three kinds of knowledge that a teacher must possess: technological knowledge, pedagogical knowledge, and content knowledge. TPACK enables educators to understand the complex relationship among the components of TPACK: pedagogy, technology, content and knowledge, to improve the outcomes of teaching by improving the outcomes of training. TPACK argues the

relationship between technology and teaching to improve teacher education, teacher training and achieve and teachers' professional development. It enables trainers and teachers to integrate technology into training and in education. TPACK has seven domains of knowledge:

- 1- Content Knowledge (CK) subject matter to be learned.
- 2- Technology Knowledge (TK) foundational and new technologies.
- 3- Pedagogy Knowledge (PK) purpose, values and methods used to teach and evaluate learning.
- 4- Pedagogical Content Knowledge (PCK)-What pedagogical strategies make concepts difficult or easy to learn? (Shulman, 1986).
- 5- Technological Content Knowledge (TCK)-How is the content represented and transformed by the applied of technology?
- 6- Technological Pedagogical Knowledge (TPK) - What pedagogical strategies enable the teachers to get the most out of existing technologies for teaching and learning evaluating?
- 7- Technological Pedagogical and Content Knowledge (TPACK) - Understanding the relationship between elements. (See figure 1).



**Figure 1. TPACK Framework (Koehler & Mishra, 2009; p. 63)**

TPACK has provided a theoretical and coherent conceptual framework to prepare pre-service and in-service teachers to integrate technology with knowledge and skill. Mishra and Koehler (2006) have argued that in the midst of fast paced technological changes, the knowledge of the most worth is TPACK, which is an ability to integrate knowledge of technology and content and the relationship to each other into the curriculum and instructional practices. TPACK improves teacher education, training, and professional development. However, the majority accepted advantages of TPACK as stated by (Angeli & Valanides, 2009; Mishra & Koehler, 2009; Niess, 2011) are numerous including first: developing teachers' competence in using certain hardware and software applications, second: improving teacher's confidence in using technology to learn and to teach, third: enhancing teachers' cooperation and sharing experience and discussions, fourth: helping teachers use technology in administrative duties, fifth: increasing teachers' motivation to learn and apply that learning by being exposed to knowledge and successful examples from others, sixth: increasing teachers' personal and professional development and, seventh: exposing teachers to a new and improved curriculum, school and classroom practices and activities. As such, TPACK fosters creative, innovative, critical thinking and practice, problem solving, and collaborative

communication, as well as combining information literacy and media literacy (Mishra & Koehler, 2009).

Due to its nature, interaction involves comprehending the spoken language; namely: listening. Purdy (1997) explained that listening has always been characterized as a passive, neglected, ignored, and poor activity due to unfamiliar accent, difficult to comprehend the meanings of words which are not pronounced clearly, and learners find it difficult to remember words or phrases quickly. Therefore, EFL teachers can achieve successful listening in personal and professional settings by teaching and evaluating listening consciously. Purdy further explained that listening is both a social and mental process in nature. He invented a new concept in teaching listening that is called the "Ethical Approach", whereby the listener chooses the suitable approach to acquire listening; that is, the learner makes decisions about how to listen. Here comes the role of teachers to choose careful and wise authentic materials which suit EFL learners' needs, interest, levels and age; Brown (2001) stated that listening as a skill is an active and interactional process, where the listener should be able to use linguistic and nonlinguistic signs to comprehend the message. Therefore, the teacher should be able to use techniques that are intrinsically motivating, use authentic language, and figure out students' overt responses to speech. In more details, listening has different stages. (Nunan, 2002) for example, reported six stages: hearing, attending, understanding, remembering, evaluating and responding. Speaking skill was defined (Chaney & Burk, 1998:13) as "the process of building and sharing meaning through the use of verbal and non-verbal symbols, in a variety of contexts". Nation and Newton (2008) explained that speaking a foreign language is difficult due to many factors, such as the ability to use the language appropriately in social interaction. What's more, Jdetawy (2011) found that Arab EFL learners had many problems in speaking such as: the use of mother tongue "Arabic", the absence of foreign language input, the lack of the Arab EFL learners' personal motivation, and the inappropriateness of the English language curricula adopted by some academic institutions.

Hence, every educational institution should concentrate on preparing teachers to integrate technology in their education. Teachers should learn how to use technology in acquiring and presenting knowledge; that is, it is not just to know but also to know how to achieve knowledge and how to teach it, to acquire information and instructional skills, by knowing and managing how knowledge, content, pedagogy, and technology overlap (Davis 2002). Mishra and Koehler (2006) argued that not all teachers have embraced these technologies for a range of reasons – including a fear of change and lack of time and support, the fact that these technologies are here to stay cannot be doubted. As Bataineh and Bani-Abdel-Rahman (2006) noted that, teachers continue resisting to embrace technology in the schools to improve students' performance. In fact, embracing TPACK emphasizes the role of teachers as decision-makers in the integration of technology in teaching and learning (Schmidt, Danise, A; Baron, Evrim; Thompson, Ann D; Mishra, Koehler; Teas, 2009).

## **EMPIRICAL STUDIES**

TPACK is studied to investigate learners' and teachers' perceptions regarding the use of technology. Such studies are concerned with different disciplines and topics that are taught at schools and universities. Migdadi and Al-Omari (2014) examined some mathematics and science teachers' perceptions of TPACK. The sample consisted of 273 teachers who answered the questionnaire. The findings of the study revealed that they have a very weak understanding of

applying technology in their teaching practices. Though aware of similar studies of TPACK, this piece of research will restrict its review to studies that focus on EFL. Likewise, Liang, Chai, Koh, Yang and Tasi (2013) utilized a TPACK survey on 366 Taiwanese in-service EFL teachers' use of technological pedagogical content knowledge. The findings reveal that those teachers need effective programs to help them to integrate technology in teaching practices.

On the other hand, the study showed that preschool teachers with higher education qualifications tended to have more knowledge of technology use and Information and Communications Technologies (ICT) integration in their teaching environment. Closely related, some studies (e.g. Mishra & Koehler, 2006; Hofer & Harris, 2010; Keengwe and Jung (2013)) examined the effect of TPACK on improving learners' achievements and teachers' performance in learning and teaching processes. Keengwe and Jung (2013), for example, investigated the effect of a three-year technology-rich-curriculum project that was implemented on 601 EFL Chinese in-service teachers. Findings reveal that EFL teachers' needs should be taken into account by curriculum designers as they work on offering appropriate technology-rich curriculum where the use of technology in the classroom is both applicable and useful, with specific attention to oral communication.

In order to highlight school teachers' perspective on the use of technology in EFL teaching, Liu and Kleinsasser (2015) gathered qualitatively and quantitatively described data from a one-year teacher professional development program which used technology as a tool to develop pedagogical content knowledge (TPACK). The study sampled six EFL vocational high school teachers who were involved in an on-line EFL instruction program in order to examine their self-efficacy in using computer technology and its use in EFL teaching. The results showed the participants' ability to use computer technology effectively and integrated it in their teaching practices. These results were further underlined by involving the perceptions of three university professionals and the students of those teachers. Moreover, Alshaikhi and Madini (2016) examined the perception of Saudi female students and their teachers regarding the use of podcasts in order to improve listening skills. The sample consisted of 120 students from four different proficiency levels at the English Language Institute (ELI) at King AbdulAziz University (KAU) in Saudi Arabia. The data was analyzed using Nvivo qualitative package and Statistical Package of Social Sciences (SPSS) Program.

Initially, three focus group discussions were administered using semi-structured questions. Afterwards, an online close-ended survey was designed and piloted based on the results of the thematic analysis of the focused group discussions along with the reviewed literature. The results showed that there were positive responses on the part of the participants towards integrating podcasts. Besides, it turned out that teachers were more familiar with podcasts than students. Indeed, this study is important as it reveals the significance of raising students' mindful attention to the need for increasing their independent, comprehensible and authentic input outside classroom limitations.

Investigating Turkish EFL instructors' perception of the use of TPACK in EFL teaching, Köse (2016) used TPACK-EFL Survey including some demographic questions along with other types of question to collect data from a sample of 127 English language instructors teaching at different levels in different state universities in Turkey. The findings of the study showed that instructors felt mostly competent in their subject-area: English Language. Nonetheless, the results showed that the instructors recognized they were not highly competent to incorporate technology in their teaching content according to a reliable pedagogy. Li and Xia (2016) investigated both the theoretical

framework of TPACK and teachers' professional development. The study attempted to couple theory with practice and therefore provided a design for a TPACK-oriented model for college English teachers' professional training and made also an empirical study of teachers' understanding of TPACK. It turned out that it is important to ensure that college English language teachers are aware of TPACK to be able to integrate technology into their teaching practices.

### THE STUDY

The purpose of the study is to examine teachers' perception of the application of TPACK. More precisely, the study attempts to answer the following questions:

- 1- To what extent do UNRWA teachers apply TPACK in teaching listening and speaking activities?
- 2- Are there any statistically significant differences (at  $\alpha \leq 0.05$ ) in teachers' perception that are attributed to their gender and experience?

This is a descriptive study as it employs a quantitative survey approach on the satisfactions of English foreign language teachers. In this study 69 (39 female and 30 male), full-time English language teachers in UNRWA schools in Zarqa Governorate, participated in the TPACK survey questionnaire. All of them are experienced elementary and preparatory teachers, with 6 to 16 years of teaching experience. There wasn't any novice EFL teacher because no English language teacher was assigned during the previous four years in UNRWA schools. The following table 1 details all these pieces of information about the participating teachers in the present study.

**Table 1: Background Information of Participants**

Gender	Male	39
	Female	30
Teaching experience (years)	1-5	0
	6-10	20
	11-15	24
	16+	25
<b>Total</b>		<b>69</b>

To achieve the aims of the study, the researchers used The *TPACK survey* questionnaire as adopted from Sahin (2011) and it includes questions about the seven TPACK items: Content Knowledge (CK), Pedagogy Knowledge (PK), Technology Knowledge (TK), Technological Pedagogical Knowledge (TCK), Pedagogical Content Knowledge (PCK), Technological Pedagogical Knowledge (TPK) and Technological Pedagogical and Content Knowledge (TPACK). The survey was administered to all English language teachers at UNRWA schools in Zarqa Governorate and English language teachers who were participating in this study in order to identify their perception via the TPACK survey. The survey items were answered according to a five Likert-scale ranging from strongly agree to strongly disagree. The study tool that was moderated by a jury of: five EFL professionals, two supervisors of English language and three teachers of English language. The researchers considered the recommendations of the referees and made amendments accordingly. To achieve the reliability of the questionnaire, the researchers chose a pilot sample consisting of 30 male and female teachers. The researchers administrated the questionnaire on them; then Cronbach Alpha for all items and domains of TPACK questionnaire was estimated.

The reliable coefficients for the first domain items (TK) were high. The lowest value was 0.66, while the total coefficient value was 0.72. The reliable coefficients for the second domain items (PK) were high. The lowest value was 0.68, while the total coefficient value was 0.80. The reliable coefficients for the third domain items (CK) were high. The lowest value was 0.47, while the total coefficient value was 0.78. The reliable coefficients for the fourth domain items (TPK) were high. The lowest value was 0.74, while the total coefficient value was 0.91. The reliable coefficients for the fifth domain items (PCK) were high. The lowest value was 0.65, while the total coefficient value was 0.81. The reliable coefficients for the sixth domain items (TCK) were high. The lowest value was 0.75, while the total coefficient value was 0.85. The reliable coefficients for the seventh domain items (TPACK) were high. The lowest value was 0.71, while the total coefficient value was 0.93. The reliable coefficients for the questionnaire domains were high. The lowest value was 0.72, while the total coefficient value was 0.96. These values considered suitable for the study, so no one of the items was deleted or corrected.

**Table 2: Reliable coefficients for the questionnaire domains**

Domain	Coefficient
Technology Knowledge(TK)	0.72
Pedagogy Knowledge(PK)	0.80
Content Knowledge(CK)	0.78
Technological Pedagogical Knowledge(TPK)	0.91
Pedagogical Content Knowledge(PCK)	0.81
Technological Content Knowledge(TCK)	0.85
Technological Pedagogical Content Knowledge(TPACK)	0.93
<b>All</b>	<b>0.96</b>

Table 2 shows that the reliable coefficients for the questionnaire domains were high. The lowest value was 0.72, while the total coefficient value was 0.96. These values considered suitable for the study.

### RESULTS RELATED TO THE RESEARCH QUESTIONS

The findings are discussed according to the two questions of the research. The first research question asks about the extent to what UNRWA EFL tenth grade teachers are satisfied with the application of TPACK in their teaching. The answer to the first research question depended on the results of the TPACK survey questionnaire to find the means, standard deviation, order, and extent (degree) and the standard deviations as shown in table 3.

**Table 3: Teachers' satisfaction of applying TPACK in the first domain: Technological Knowledge (TK)**

N	Items	Mean	Std. Dev.	Order	Extent
1.	I can learn technology easily.	4.17	0.73	<b>2</b>	good
2.	I know how to solve my own technical problems	3.74	0.92	<b>8</b>	good
3.	I keep up with important new technologies.	3.54	0.92	<b>9</b>	good
4.	I frequently play around the technology.	3.51	0.88	<b>10</b>	good
5.	I know about a lot of different technologies.	3.51	0.92	<b>10</b>	good

N	Items	Mean	Std. Dev.	Order	Extent
6.	I have the technical skills I need to use technology.	3.91	0.95	5	good
7.	Communicating through Internet tools (ex., e-mail, MSN Messenger)	4.17	0.91	2	good
8.	Using a picture editing program (ex., Paint)	3.84	1.01	7	good
9.	Using a presentation program (ex., MS Power point)	3.96	0.96	4	good
10.	Saving data into a digital media (ex., Flash Memory, CD, DVD)	4.20	0.92	1	V. good
11.	Knowing about basic computer software (ex., Windows, Media Player) and their functions.	3.91	0.95	5	good
	Technology Knowledge(TK)	3.86	0.71		good

Table 3 shows the descriptive data of the means, standard deviations, order and extent of the first domain, *Technological Knowledge (TK)*, which was classified into two degrees: very good for the item 10 and good for the items 1, 2, 3, 4,5,6, 7, 8, 9 and 11. The mean scores of all items were 3.448. In terms of order, item 10 “*Saving data into a digital media (ex., Flash Memory, CD, DVD)*” was in the first order of the field with a mean score of 4.20 and a standard deviation of 0.92, and item 4 “*I frequently play around the technology*” in the last order of the first domain with mean of 3.86 and a standard deviation of (0.88), (0.92). The mean of the first domain Technological Knowledge (TK) was 3.51 with a standard deviation of 0.71.

**Table 4: Teacher’s perception of applying TPACK in the second domain: *Pedagogy Knowledge (PK)***

N	Items	Mean	Std. Dev.	Order	Extent
1.	Assessing student performance.	4.23	0.75	2	V. good
2.	Eliminating individual differences	4.04	0.72	5	Good
3.	Using different evaluation methods and techniques.	4.09	0.76	4	Good
4.	Applying different learning theories and approaches (ex, Constructivist Learning, Multiple Intelligence Theory, Project based Teaching).	3.94	0.86	6	Good
5.	Being aware of possible student learning difficulties and misconceptions.	4.14	0.75	3	Good
6.	Managing class.	4.42	0.79	1	V. good
	Pedagogy Knowledge(PK)	4.14	0.64		Good

Table 4 presents the descriptive data of the means, standard deviations, order and the extent of the second domain of the teachers' perception with the application of TPACK in their teaching.

*Technological Knowledge (TK)* was classified into two degrees: very good for the item 12, 17 and good for the items 13, 14, 15, and 16. In terms of order, item 17 “*managing class*” is in the first order of the field with an average of 4.42 and a standard deviation of (0.79), and item 15 “*Applying different learning theories and approaches (ex., Constructivist Learning, Multiple Intelligence Theory, Project based Teaching)*” came in the last order of the domain with an average of 3.94 and a standard deviation of 0.86. The mean scores of all items in the second domain (Pedagogy Knowledge (PK)) was 4.14 and a standard deviation of 0.64.

**Table 5: Teachers' perception of applying TPACK in the third domain: *Content Knowledge (CK)***

N	Items	Mean	Std. dev.	Order	Extent
1.	Knowing about key subjects in my area.	4.26	0.85	1	V. good
2.	Developing class activities and projects.	4.26	0.72	1	V. good
3.	Following recent developments and applications in my content area.	4.00	0.77	3	good
4.	Recognizing leaders in my content area.	3.78	0.86	4	good
5.	Following up-to-date resources (ex, books, journals) in my content area (CK).	3.74	0.90	5	good
6.	Following conferences and activities in my content area.	3.59	0.88	6	good
	Content Knowledge(CK)	3.93	0.63		good

Table 5 shows the descriptive data, means, standard deviations, order and the extent of the third domain *Content Knowledge (CK)*, on teachers' perception with the application of TPACK in their teaching. Technological knowledge (TK) was classified into two degrees: very good for the item 18 and 19 good for the items 20, 21, 22, and 23. In terms of rank order, the items 18, 19 “*Knowing about key subjects in my area*” “*Developing class activities and projects*” in the first order of the domain with an average of 4.26 and a standard deviation of 0.85 and 0.72, followed by the item 23, “*Followed by conferences and activities in my content area*” in the last order with an average of 3.59 and a standard deviation of 0.88. The mean scores of all items in the third domain *Content Knowledge (CK)* were 3.93 with a standard deviation of 0.63.

**Table 6: Teachers' perception of applying TPACK in the fourth domain: *Technological Pedagogical Knowledge (TPK)***

N	Items	Mean	Std. Dev.	Order	Extent
1.	Choosing appropriate technologies for my teaching/learning approaches and strategies.	3.88	0.90	1	good
2.	Using computer applications supporting student learning.	3.75	0.90	3	good
3.	Being able to select useful technologies for my teaching career	3.83	0.86	2	good
4.	Evaluating the appropriateness of a new technology for teaching and Learning.	3.59	0.90	4	good
	Technological Pedagogical Knowledge(TPK)	3.76	0.74		good

Table 6 shows the descriptive data of the means, standard deviations, the order and the extent of the fourth domain *Technological Pedagogical Knowledge (TPK)* on teachers' perception with the application of TPACK in teaching. All items in the fourth domain had *good* degree. In terms of order, item 24 “*Choosing technologies appropriate for my teaching / learning approaches and strategies*” was in the first order with a mean of 3.88 and a standard deviation of 0.90, and the item 27 “*Evaluating appropriateness of a new technology for teaching and learning*” in the last order of the field with an average of 3.59. The total mean scores of the domain *Technological Pedagogical Knowledge (TPK)* was 3.76 and a standard deviation of 0.74.

**Table 7: Teachers' perception of applying TPACK in the fifth domain: *Pedagogical Content Knowledge (PCK)***

N	Items	Mean	Std. Dev.	Order	Extent
1.	Selecting appropriate and effective teaching strategies for my content area.	3.75	0.79	6	good
2.	Developing evaluation tests and surveys in my content area.	3.81	0.84	4	good
3.	Preparing a lesson plan including class/school-wide activities.	4.01	0.81	3	good
4.	Meeting objectives described in my lesson plan.	4.25	0.79	1	V. good
5.	Making connections among related subjects in my content area.	4.14	0.81	2	good
6.	Supporting subjects in my content area with outside (out-of-school) activities.	3.80	0.83	5	good
	Pedagogical Content Knowledge(PCK)	3.96	0.67		good

Table 7 shows the descriptive data of the means, standard deviations, order and the extent of the fifth domain items on teachers' perception with the application of TPACK in teaching listening and speaking. Item 31 had a *very good* degree while items 28, 29, 30, 32 and 33 had *good* degree. In terms of order, item 31 “*Meeting objectives described in my lesson plan*” was in the first order of the domain with an average of 4.25 and a standard deviation of 0.79, and the item 28 “*Selecting appropriate and effective teaching strategies for my content area*” came in the last order of the field with an average of 3.75 and a standard deviation of 0.79. The total mean scores of the fifth domain *Pedagogical Content Knowledge (PCK)* was 3.96 with a standard deviation of 0.67.

**Table 8: Teachers' perception of applying TPACK in the sixth domain: *Technological Content Knowledge (TCK)***

N	Items	Mean	Std. Dev.	Order	Extent
7.	Using area-specific computer applications.	3.72	0.76	4	good
8.	Using technologies helping to reach course objectives easily in the lesson plan.	3.88	0.85	2	good
9.	Preparing a lesson plan requires the use of instructional technologies	3.84	0.92	3	good
10.	Developing class activities and projects involving use of instructional technologies	3.90	0.86	1	good
	Technological Content Knowledge (TCK)	3.83	0.73		good

Table 8 shows descriptive data of means, standard deviations, extents and the rank order of the sixth domain of teachers' perception with the application of TPACK in teaching. All items had *good* degree, while in terms of order, item 37 "*Developing class activities and projects involving the use of instructional technologies*" came in the first order of this field with an average of 3.90 and a standard deviation of 0.86. The item 34 "*Using area-specific computer applications*" in the last order of the domain with an average of 3.72 and a standard deviation of 0.76. The total mean scores of the domain *Technological and Content Knowledge (TCK)* was 3.83 with a standard deviation of 0.73

**Table 9: Teachers' perception of applying TPACK in the seventh domain: *Technological Pedagogical Content Knowledge (TPACK)***

N	Items	Mean	Std. Dev.	Order	Extent
11.	Integrating appropriate instructional methods and technologies into the content area.	3.58	0.88	5	good
12.	Selecting contemporary strategies and technologies helping to teach the content effectively.	3.88	0.76	2	good
13.	Teaching successfully by combining the content, pedagogy, and technology knowledge.	3.93	0.81	1	good
14.	Taking a leadership role among the colleagues in the integration of content, pedagogy, and technology knowledge.	3.83	0.75	4	good
15.	Teaching a subject with different instructional strategies and computer applications.	3.86	0.84	3	good
	Technological Pedagogical Content Knowledge (TPACK)	3.81	0.69		good

Table 9 shows descriptive data of means, standard deviations, order and the extent of the seventh domain of *Technological Pedagogical Content Knowledge (TPACK)* of the teachers' perceptions with the application of TPACK in teaching. All items in this field had *good* degree. In terms of order, item 40 "*Teaching successfully by combining the content, pedagogy, and technology knowledge*" was the first of the domain with a mean of 3.93 and a standard deviation of 0.81, and item 38 "*Integrating appropriate instructional methods and technologies into the content area*" was in the last order of the domain with an average of 3.58 and a standard deviation of 0.88. The total mean scores for the domain *Technological Pedagogical and Content Knowledge (TPACK)* was 3.81 with a standard deviation of 0.69

**Table 10: Teachers' perception of applying TPACK in all domains**

Domain	mean	Std. Dev.	Order	Extent
Technology Knowledge(TK)	3.86	0.71	4	good
Pedagogy Knowledge(PK)	4.14	0.64	1	good
Content Knowledge(CK)	3.93	0.63	3	good
Technological Pedagogical Knowledge(TPK)	3.76	0.74	7	good
Pedagogical Content Knowledge(PCK)	3.96	0.67	2	good
Technological Content Knowledge(TCK)	3.83	0.73	5	good
Technological Pedagogical Content Knowledge(TPACK)	3.81	0.69	6	good
All	3.90	0.59		good

Table 10 presents means, standard deviations, order and the extent (degree) of the teachers' perception for the application of TPACK in teaching English as a foreign language. All domains had *good* degree. In terms of order, the second domain "Pedagogy Knowledge (PK)" was in the first order with a mean of 4.14 and a deviation of (0.64), while the fourth domain "Technological pedagogical knowledge (TPK)" in the last order with an average of 3.76 and a standard deviation of 0.74. The total mean scores of the questionnaire was 3.90 with a standard deviation of 0.59.

The order of the fields according to the mean scores:

- 1- Pedagogy Knowledge (PK).
- 2- Pedagogical Content Knowledge (PCK).
- 3- Content Knowledge (CK).
- 4- Technology Knowledge (TK).
- 5- Technological Content Knowledge (TCK).
- 6- Technological Pedagogical Content Knowledge (TPACK).
- 7- Technological Pedagogical Knowledge (TPK).

The second question asks if there are any statistically significant differences (at  $\alpha \leq 0.05$ ) in teachers' perception that are attributed to their gender. To answer this question, the means and standard deviations of teachers' perception were derived from the application of TPACK survey questionnaire according to the gender variable. Table 10 shows the results that were as follows:

**Table 11: Teachers' perception with the application of TPACK according to gender**

Domain	Gender	N	Mean	Std. dev.	T	sig
Technology Knowledge(TK)	Female	39	3.87	0.72	0.07	0.95
	Male	30	3.85	0.73		
Pedagogy Knowledge(PK)	Female	39	4.22	0.55	1.15	0.26
	Male	30	4.04	0.74		
Content Knowledge(CK)	Female	39	4.01	0.57	1.02	0.31
	Male	30	3.85	0.71		
Technological Pedagogical Knowledge(TPK)	Female	39	3.80	0.66	0.46	0.64
	Male	30	3.72	0.86		
Pedagogical Content Knowledge(PCK)	Female	39	4.02	0.61	0.85	0.40
	Male	30	3.88	0.76		
Technological Content Knowledge(TCK)	Female	39	3.94	0.69	1.36	0.18
	Male	30	3.70	0.78		
Technological Pedagogical Content Knowledge (TPACK)	Female	39	3.91	0.63	1.35	0.18
	Male	30	3.69	0.76		
All	Female	39	3.97	0.54	0.90	0.37
	Male	30	3.84	0.65		

Table 11 shows the means and standard deviations to the perception of the teachers with the application of TPACK. The means of male teachers in all the fields of questionnaire were 3.85, 4.04, 3.85, 3.72, 3.88, 3.70, 3.69 and 3.84 respectively. On the other hand, the means of female teachers were 3.87, 4.22, 4.01, 3.80, 4.02, 3.94, 3.91 and 3.97 respectively. The difference means

between male and female teachers were 0.02, 0.18, 0.16, 0.08, 0.14, 0.24, 0.22, and 0.13 respectively. To find out if the differences in the means in Table 10 were statistically significant at the significance level at ( $\alpha \leq 0.05$ ), the t-test for (t-test paired sample) was used. Table 11 shows that there are no statistically significant differences at the significance level at ( $\alpha \leq 0.05$ ) in all domains of the questionnaire between male and female teachers.

**Table 12: The statistical averages and standard deviations of the degree of teachers' perception with the application of TPACK according to experience.**

Domain	Experience	N	Mean	Std. dev.
Technology Knowledge(TK)	6-10	20	3.84	0.74
	11-15	24	3.90	0.79
	16	25	3.84	0.65
	Total	69	3.86	0.72
Pedagogy Knowledge(PK)	6-10	20	4.17	0.69
	11-15	24	4.12	0.62
	16	25	4.15	0.65
	Total	69	4.14	0.64
Content Knowledge(CK)	6-10	20	3.77	0.70
	11-15	24	4.04	0.62
	16	25	3.97	0.60
	Total	69	3.94	0.64
Technological Pedagogical Knowledge(TPK)	6-10	20	3.78	0.81
	11-15	24	3.81	0.78
	16	25	3.71	0.69
	Total	69	3.76	0.75
Pedagogical Content Knowledge(PCK)	6-10	20	3.87	0.82
	11-15	24	3.97	0.58
	16	25	4.03	0.65
	Total	69	3.96	0.67
Technological Content Knowledge(TCK)	6-10	20	3.69	0.78
	11-15	24	4.00	0.66
	16	25	3.80	0.78
	Total	69	3.84	0.74
Technological Pedagogical Content Knowledge (TPACK)	6-10	20	3.72	0.80
	11-15	24	3.89	0.70
	16	25	3.82	0.62
	Total	69	3.81	0.69
All	6-10	20	3.84	0.65
	11-15	24	3.96	0.60
	16	25	3.91	0.56
	Total	69	3.91	0.59

Table 11 shows the means and standard deviations to the satisfaction of male and female teachers which shows that there were differences in the means between male and female teachers, according to the experience.

To find out if the differences in the means shown above in Table 11 were statistically significant at the significance level (at  $\alpha \leq 0.05$ ), the one-way ANOVA test was used as shown in Table 12.

**Table 12: One-Way ANOVA test of teachers' perception of the application of TPACK according to experience**

Domain	Source	Sum Squares	De v.	Mean Square	F	Sig.
Technology Knowledge(TK)	Between Groups	0.06	2	0.03	0.06	0.94
	Within Groups	35.07	66	0.53		
	Total	35.13	68			
Pedagogy Knowledge(PK)	Between Groups	0.02	2	0.01	0.02	0.98
	Within Groups	28.04	66	0.42		
	Total	28.05	68			
Content Knowledge(CK)	Between Groups	0.82	2	0.41	1.01	0.37
	Within Groups	26.84	66	0.41		
	Total	27.67	68			
Technological Pedagogical Knowledge(TPK)	Between Groups	0.13	2	0.07	0.11	0.89
	Within Groups	37.85	66	0.57		
	Total	37.99	68			
Pedagogical Content Knowledge(PCK)	Between Groups	0.29	2	0.14	0.31	0.73
	Within Groups	30.55	66	0.46		
	Total	30.83	68			
Technological Content Knowledge(TCK)	Between Groups	1.12	2	0.56	1.03	0.36
	Within Groups	35.98	66	0.55		
	Total	37.10	68			
Technological Pedagogical Content Knowledge (TPACK)	Between Groups	0.32	2	0.16	0.33	0.72
	Within Groups	32.34	66	0.49		
	Total	32.67	68			
All	Between Groups	0.15	2	0.08	0.21	0.81
	Within Groups	23.75	66	0.36		
	Total	23.90	68			

Table 12 showed that there were no statistically significant differences in the degree of satisfaction of male and female teachers at the significance level (at  $\alpha \leq 0.05$ ) in all domains of questionnaire.

## FINDINGS

This study investigated EFL in-service teachers' perception of TPACK according to a TPACK survey questionnaire. The results revealed that teachers perceived that they had limited knowledge of technology compared to their knowledge of content (CK) and knowledge of pedagogy (PK). This result aligned with Kafyulilo, Fisser and Voogt's (2013) study which indicated teachers' limited knowledge of technology and its domains (T-Domains: TCK, TPK, TPACK) before the intermediation to supplement teachers with all TPACK components. On the other hand, the results showed that technology and its domains (Technology Knowledge (TK), Technological Content Knowledge (TCK), Technological Pedagogical and Content Knowledge (TPACK), and Technological Pedagogical Knowledge (TPK) respectively came in the late orders, which indicate a lack of interest in technology, insufficient ability to employ technology in teaching, lack of

technological knowledge, and lack of teachers training programs that are suitable to twenty-first century requirements. As such, this result agreed with many studies (Mishra & Koehler, 2006; Schmidt, Baran & Thompson, Mishra, Koehler & Shin, 2009; Niess, 2011) that underlined the teachers' limited knowledge of technology, their lack of technological skill or their limited knowledge of correct strategies for integrating technology, and above all, their need for training to integrate technology in teaching. Accordingly, these studies recommend the need to rehabilitate teachers through in-service training programs, mainly TPACK which may be more efficient if it is built with attention to the pre-mentioned observations. Such programs need to be designed along with the targeted teachers and should include materials that help those teachers develop the necessary skills related to enhance their students' mental stability and professional competence in the 21<sup>st</sup> century of the "Net Generation".

Moreover, according to the gender and experience variables, the results revealed that there were no statistically significant differences at the significant level at ( $\alpha \leq 0.05$ ) in all areas of the questionnaire between male and female teachers or in their teaching experience, thus, it indicates that gender and experience are not detrimental to technology knowledge development and the teachers' willingness to join TPACK-based workshops which represent professional training tools to help teachers to implement technology and new pedagogy simultaneously in in-service programs. Hence, EFL teachers should rethink the introduction of new and effective ways and strategies to teach listening and speaking skills which will help students overcome some of the problems they face in learning English language.

In sum, TPACK offers many benefits for helping teachers to incorporate technology in the classroom. However, to apply it successfully, the researchers recommended the establishment of TPACK-based workshops in teaching listening and speaking to equip EFL teachers with the successful strategies that empower them to improve EFL students' achievements. This result is consistent with the findings of Liu and Kleinsasser (2015) and Koh, Chai, and Tsai (2014) in terms of age and gender, but it was inconsistent in that the experience in teaching has an impact as those who have long experience are not inclined and tend to be less confident to use technology or TPACK-based activities in teaching and tend to use the conventional methods in their teaching practices.

## **CONCLUSION**

To conclude, using technology in the process of the education in in-service training programs was abundantly found in literature as it is effective in improving teachers' performance in general (Mishra & Koehler, 2006; Schmidt, Baran & Thompson, Mishra, Koehler & Shin, 2009; Niess, 2011). Yet, and to the best of the researchers' knowledge, the TPACK model has not been used to improve students' listening and speaking performance in UNRWA schools in Jordan. Accordingly, the present study may contribute to the literature by expanding on listening and speaking competence by drawing insights on how the use of such model improves teaching and learning alike. What's more, the present study tends to be significant for the students as their learning behavior will be modified, thus attaining better listening and speaking indices. Of course, this study may be of great significance for textbook writers to consider insights for activities in tenth grade EFL textbooks. Finally, this study may be a great help to policy makers when considering teacher education programs as it will deliver procedures for effective teacher training models.

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