

The Role of Pre-service EFL Teachers' Professional Development Programs in Enhancing their Subject Matter and Pedagogical Knowledge in Jordan

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Abstract

The aim of this research is to investigate the role of EFL teachers' professional development programs in enhancing their subject matter and pedagogical knowledge in Jordan. A mixed method was used with (229) EFL teachers for quantitative data and (20) EFL teacher for qualitative data. A questionnaire, an interview and a classroom observation were the instruments of the research. The data has analyzed by using descriptive statistics via SPSS and classroom descriptions. This research was conducted in different public schools in Jordan in the second semester of the academic year (2022-2023). The results showed the pre-service professional development programs have an effective role in enhancing EFL teachers' subject matter and pedagogical knowledge regarding quantitative results. EFL teachers have high experience in subject matter and poor pedagogical knowledge regarding qualitative results. This research suggested encouraging Jordanian EFL teachers to attend more training courses, conduct more research related this topic and develop the syllabus of the current training courses.

Keywords: EFL teachers, Pedagogical knowledge, Pre-service professional development programs, Subject matter knowledge.

دور برامج التنمية المهنية قبل الخدمة لمعلمي اللغة الإنجليزية في تعزيز معرفة المحتوى والمعرفة البيداغوجية لديهم في الأردن

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الملخص

هدفت هذه الدراسة للكشف عن دور برامج التنمية المهنية قبل الخدمة لمعلمي اللغة الإنجليزية في تعزيز معرفتهم للمادة الدراسية وطرق التدريس في الأردن. تم استخدام المنهج الكمي والنوعي وشارك في الدراسة 229 معلما ومعلمة للإجابة على أسئلة الاستبانة وتم ملاحظة ومقابلة 20 معلما ومعلمة. لقد تم تحليل بيانات الدراسة الكمية بواسطة برنامج التحليل الإحصائي SPSS وتم تحليل البيانات النوعية تحليلا وصفيا. أجريت هذه الدراسة في الفصل الدراسي الثاني للعام 2022-2023. وأظهرت النتائج أن برامج التنمية المهنية قبل الخدمة لها دور فعال في تعزيز معرفة معلمي اللغة الإنجليزية في المادة الدراسية وطرق التدريس بناء على البيانات الكمية، بينما كان لهذه البرامج دور كبير في تعزيز معرفة المعلمين بالمادة الدراسية ودور ضعيف فيما يخص طرائق التدريس بناء على البيانات النوعية. وأوصت هذه الدراسة بضرورة دعم معلمي اللغة الإنجليزية للالتحاق في المزيد من برامج التنمية المهنية وعقد أبحاث مرتبطة في هذا الموضوع وتطوير خطط برامج التنمية المهنية الحالية.

الكلمات المفتاحية: المعرفة التربوية، برامج التنمية المهنية قبل الخدمة، معرفة المادة الدراسية، معلمو اللغة الإنجليزية كلغة أجنبية.

Introduction

The quick change in educational approaches demands changes in teachers' role to be researchers and lifelong learners. The lifelong learning process demands more concentration on the quality of professional development programs. The quality of teaching is connected with the quality of professional development programs which increase teachers' skills. Professional development programs are vital to increase teachers' subject matter knowledge, teaching practices and teaching quality (Smith and O'Day, 1991).

The knowledge of subject matter is not enough for teachers to be professional. They have to practice theories in real classroom situations and transfer the subject matter they already learnt into real practices. To translate theories into practice, as well as changing teachers' attitudes towards teaching and learning and help them in career growth and motivation for lifelong learning; they have to attend pre-service professional development programs. (Kuzborska, 2011).

Professional teachers should have the knowledge of pedagogy as well as the content knowledge. Shulman (1986) called this issue with pedagogical content knowledge (PCK) which merges between the knowledge of subject matter and pedagogy. It is needed in pre-service professional programs to prepare teachers in both theoretical and practical sides.

PCK spots light on subject matter understanding and how it is presented in the class. (Kilic, 2009). It is important to promote teachers' knowledge regarding subject matter and pedagogical knowledge to be up till now and knowledgeable in modern teaching skills and methods before they start their profession (Parpucu, 2019).

To reach this result, effective professional development programs should be built to help teachers apply modern teaching methods and face classroom challenges professionally (Ingvarson et al, 2005; Elmore & Burney, 1997).

The effectiveness of professional development programs can be grabbed through their effect on teaching and learning process (O'Dwyer et al., 2010). Moreover, promoting teachers' subject matter and pedagogical knowledge is one of the goals of the professional development programs. However, it is essential to spot light on the role of pre-service EFL teachers' professional development programs in enhancing their subject matter and pedagogical knowledge in Jordan.

Statement of the problem

The increasing focus on teachers' development has been proposed in recent time to promote the quality of 21st century teachers. Much attention is directed towards professional development programs as they are the way to prepare and train teachers to achieve the desired benefits in teachers' performance and their knowledge growth regarding subject matter and pedagogical knowledge.

Thus, this study shed light on this issue. This study crystalized the role of pre-service EFL teachers' professional development programs in enhancing their subject matter and pedagogical knowledge after attending pre-service professional development programs and starting their real practices in public schools in Jordan.

This research is to explore EFL teachers' theoretical and practical knowledge and whether there is a gap between both of them or not. Moreover, the importance of preparing EFL teachers around the world and in Jordan in particular motivated researchers and decision

makers to focus on EFL teachers' knowledge to achieve the quality education. This research is an attempt to investigate the role of pre-service professional development programs in enhancing their subject matter and pedagogical knowledge.

Purpose and Questions of the Study

The purpose of the study is to investigate the role of pre-service professional development programs in enhancing their subject matter and pedagogical knowledge.

The questions of the study are:

1. What is the role of pre-service EFL teachers' professional development programs in enhancing their subject matter?
2. What is the role of pre-service EFL teachers' professional development programs in enhancing their pedagogical knowledge?

Definition of Terms

English as a Foreign language (EFL) teachers: teachers who studied in the faculty of languages and have (Bachelor, master or PhD) in English as a Foreign language and work as teachers in different public schools in Jordan.

Pre-service professional development programs: refer to educational programs that are designed to train teachers after graduation from the university to be proficient in subject matter as well as teaching methods, techniques, strategies and skills (Altwaijri and Almuhaimeed, 2017). Preservice teacher professional development programs are the education and training programs provided to teachers' prior their teaching profession. This occurs in a college or a university to train them on a course or a program and give them the chance to practice and have experience to meet the requirements for teacher certification (Schonert-Reichl, Hanson-Peterson & Hymel, 2015).

Subject matter knowledge: Shulman (1987) and Grossman, Wilson and Shulman (1989) defined subject matter as teachers' transformation of their understanding of the content to their students to make sense of the teaching process. it is defined in this research as the content that EFL teachers' teach for their students during a period of time.

Pedagogical knowledge: Cochran, DeRuiter, & King (1993) defined pedagogical knowledge as "what teachers know about teaching and how subject matter knowledge is a part of the process of pedagogical reasoning" (p. 263). It is defined in this research as the practices that EFL teachers do inside the classroom to explain the content for their students.

Limitation of the research:

The study will have the following delimitation:

1. The three instruments that were used in this research (the questionnaire, the observation card and the interview) are adequate to the purpose of this research.
2. The public schools where the research was applied are economically and socially equal.
3. This research was conducted in the second semester of the academic year 2022-2023.
4. The research is limited to the selected sample. The sample included EFL teachers in public schools in Jordan and all of them have already attended and finished pre-service professional development programs.
5. The research is limited to only pre-service professional development programs.

Significance of the research

This research tackled a unique and real field to explore the role of pre-service EFL teachers' professional development programs in enhancing their subject matter and pedagogical knowledge.

The results of the research are beneficial and helpful for teachers, curriculum developers and training programs designers and developers since it aimed to provide them with importance of balanced subject matter and pedagogical knowledge on EFL teachers' classroom performances and practices.

This research is in line with the pre-service professional development programs which are conducted in the Jordanian universities in 2022 and called for more quality teachers' preparation. This research is to explore the role of pre-service EFL teachers' professional development programs in enhancing their subject and pedagogical knowledge.

Methodology

Mixed method (Qualitative and quantitative) was followed to collect data about the questions of the research. This research followed triangulation method approach in order to determine the role of EFL teachers' pre-service professional development programs in enhancing their subject matter and pedagogical knowledge. The participants were asked to fill a questionnaire. class observations and interviews were also conducted. To analyze the results qualitative description was used for class observations and interviews. Descriptive statistics were used for the questionnaire via SPSS statistics.

Participants

Two hundred and twenty-nine EFL teachers participated in filling the questionnaire for this research. 20 EFL teachers were interviewed and their classes were observed. All teachers answered the questionnaire via internet. The researcher uploaded the questionnaire on google drive and distributed via WhatsApp. The observation and the interviews were conducted face to face with EFL teachers in different public schools in Jordan.

Instruments

The instruments of this research were a questionnaire, an interview and an observation. The questionnaire was about the role of pre-service professional development programs in enhancing EFL teachers' subject matter and pedagogical knowledge. The teachers were asked to answer the questionnaire without writing their names. The results of the questionnaire were collected and analyzed using SPSS statistics. The descriptive statistics used to analyze the questionnaire results.

However, both the interview and the observation were about teachers' perceptions and attitudes towards subject matter and pedagogical knowledge. The teachers were told that the observation and the interview were for the research purposes. The results of the interview and the observation tools, which covered the EFL teachers' attitudes and the role of pre-service professional development programs on enhancing EFL teachers' PCK, were collected and analyzed descriptively.

Research validity and reliability

- To check the validity of the research, the instruments of the research were sent to 18 referees who are specialized in curriculum and instructions, English language instructions and measurement and assessment in different universities to comment or suggest any changes to the questionnaire, the interview and the observation items in light of the following:

- 1- The clarity of the items.
 - 2- The linguistic validity of the items.
 - 3- The convenient relationships between the items and questions and the purpose of the research.
 - 4- The convenient relationships between the items and questions and the sub- domains of the instrument.
- Cronbach's Alpha was used to check the reliability of the questionnaire for internal consistency. It scored (.98). The interview questions were distributed twice on a pilot sample of (5) EFL teachers who are not a part of the study sample. The length between the two interviews was two weeks to check that there were not huge differences between the pilot sample answers. The researcher asked other EFL teacher to observe (3) EFL teachers' classes. Cooper equation was calculated to verify internal consistency and the differences and similarities between both observers. It scored (.80).

Literature Review

Shulman focuses on teachers' knowledge growth as an important issue in their professional development. Teachers teach students to increase their understanding about the subject matter by using different teaching strategies. Shulman referred the success of the teachers to their awareness of subject and pedagogical knowledge (Shulman, 1986).

However, the subject matter knowledge is one of the most important parts of PCK according to many researchers. Shulman (1987) and Grossman, Wilson and Shulman (1989) defined subject matter as teachers' transformation of their understanding of the subject to their students to make sense of the teaching process. It is divided into: content knowledge, syntactic knowledge, beliefs about the subject and substantive knowledge.

The content knowledge is the factual information, principles or concepts. Novice teachers need to learn in order to be able to teach. Content knowledge affects teachers' attitudes and approaches towards textbooks and instructions. Moreover, substantive knowledge guides teachers to conduct inquiry on particular issues in the field. While, syntactic knowledge is to teach new knowledge which will be accepted in the community. However, the beliefs about the subject matter refer to teachers' beliefs about the teaching process which will affect how teachers teach and how students learn (Grossman, Wilson and Shulman, 1989).

The deep focus on the subject matter knowledge in particular refers to the importance of subject matter in what and how teachers teach and the relationships between the subject matter and teachers' styles, methods and teaching techniques. Teachers' subject matter knowledge affects their pedagogical knowledge, context knowledge and teaching practice (Grossman, Wilson and Shulman, 1989; Ball and McDiarmid, 1990).

According to Shulman (1987), EFL teachers need "the knowledge about what to teach, how to teach it, how to engage students and how to deal with students' learning difficulties" (p.8). Thus, Xu (2015) refers to EFL teachers' knowledge as the knowledge of the four skills (reading, writing, listening and speaking) and how to teach them.

Through history, it is clear that the focus on teaching profession has been shifted from the focus on subject matter knowledge to the focus of pedagogical knowledge. However, Shulman (1986) emerged subject matter and pedagogy together to help students understand the subject. The role of the teacher is to join between subject matter and

pedagogy (Zembylas, 2007). The knowledge of subject matter and pedagogy are basic parts of teachers' abilities to teach (Aydin, Demirdogen, Akin, Uzuntiryaki-Kondakci & Tarkin, 2015).

From other side, pre-service professional development programs "aim to educate teachers to perform teaching tasks skillfully and reason soundly about their teaching on the grounds of evidence, principles and experiences" (Luo, 2004, p.1). EFL teachers do not only present materials and implement teaching strategies but also discuss the content, syllabus and teaching methods with their students, interpret students' differentiations and needs, develop topics and materials and explore the classroom environment (Richards, 1990).

Referring to history, professional development programs have witnessed a huge jump from traditional to process- oriented theories of teaching and learning. This is a clear evidence that pre-service professional development programs do not only prepare teachers for real practices in the classroom but also train them to realize the importance of teachers' training to shape their attitudes, beliefs and cognition as well as develop pre-service professional programs themselves to help EFL teachers to be life-long learners (Crandall, 2000).

Shulman (1987) stated that teaching is "a cycle through the activities of comprehension, transformation, instruction, evaluation and reflection" (p.14). Likewise, EFL teachers have to know the teaching theories, teaching strategies, communication skills, subject matter, pedagogical knowledge, contextual knowledge and decision making (Richards, 1998). Teaching EFL has a tight connection with teachers' subject matter and pedagogical knowledge. Both of subject matter and pedagogy affect teaching process and learning opportunities (König et al., 2017).

As a result, professional development programs have to be planned to suit the quick change in teachers' needs. Pre-service professional development programs have to be dynamic, motivate teachers' change and development, change teachers' attitudes and beliefs towards teaching (Lee, 2005). Professional development programs have to be planned according to different categories like teachers' skills, attitudes, beliefs, and knowledge to achieve the high quality of education (Dudley Evans and John, 1998).

Related Studies

After reviewing the previous literature, it is clear that the enhancement of EFL teachers' subject matter and pedagogical knowledge is an important issue to prepare well-qualified teachers in general and for EFL in particular. Thus, many studies were found in the scientific field in relation to this topic but a few were found for English field. The following studies were presented in relation to subject matter and pedagogical knowledge in PPDPs and reviewed starting with the newest ones first.

Denbel study (2023) assessed mathematics subject matter knowledge competency of pre-service teachers and investigated the role of subject matter knowledge in teaching mathematics in secondary school. 70 pre-service teachers attending training diploma were involved in the study. An achievement test was conducted to collect the data. The findings revealed that the subject matter knowledge competency was low. It was clear that pre-service teachers have deficiency in subject matter knowledge competence and they lack the uniformity with the selected mathematics subject knowledge competency areas.

Shi, Li and Yeung study (2022) investigated PCK of novice Chinese early childhood EFL teachers. Two Chinese EFL teachers less than two years of teaching experience were involved in the study. The instrument of the study was classroom observation. The results showed three PCK categories: curriculum knowledge, learners knowledge and teaching strategies knowledge were clear in novice Chinese EFL teachers' classroom practices.

Reza Adel and Noughabi study (2022) investigated pre-service EFL teachers' PCK through teacher education program in Iran. 12 program sessions were included to develop four EFL teachers' knowledge in teaching strategies, reflection on teaching practices by viewing videos and mentor feedback. The instruments were interviews, field notes, classroom observation and video stimulated recall. The results revealed that teacher education programs help pre-service EFL teachers to develop their PCK, reflect on their pedagogical practices and influence their teaching strategies knowledge.

Abu Amra, Abu Shughair and Abu Shraikh study (2022) investigated the level of PCK of Islamic education teachers in secondary school in Gaza. PCK was divided into four categories: curriculum knowledge, teaching strategies knowledge, students' knowledge and assessment knowledge. 176 Islamic education teachers were involved in the study. The instrument of the study was a questionnaire. The findings revealed that Islamic education teachers got large degrees in regards to students' knowledge, assessment knowledge and teaching strategies knowledge but they got medium degree regarding the curriculum knowledge.

Favier, Gorp, Cyvin, B., Cyvin, J. study (2021) described the structure of a course called EduChange and explored how this course contributed to pre-service geography teachers' PCK development. A survey and interviews were used to achieve the purpose of the study. The findings showed that pre-service teachers value the course. They announced that the course helps them to develop their PCK, develop their abilities to plan lesson in light of students' needs and wicked problems like climate change and develop their abilities to solve problems.

Ekiz- Kiran, Boz and Oztay study (2021) investigated the improvement of Turkish pre-service chemistry teachers' PCK through school experience course rich in PCK development tools like content representation, observation form, lesson planning form, discussion sessions and reflection on teaching. Ten pre-service science teachers were involved in the study. the instruments of the study were interviews, field notes, content representation and reflection papers. The findings revealed that pre-service science teachers' orientations did not change. However, their knowledge about learners and instructional strategies have improved but the curriculum knowledge and assessment knowledge have not improved at the end of the study.

Hijazi and Al-Natour Study (2019) investigated the level of PCK of in-service EFL teachers in Jordan. 9 in-service EFL teachers in Irbid were asked to answer 5 open-ended problems. The instrument was adapted from Turnuklu and Yesildere study (2007). The instrument problems were revised and re-designed to suit EFL context in relation to grammar, pronunciation and writing. The findings of the study showed that in-service EFL teachers do not have enough knowledge about what they teach, how they teach and the process of teaching and PCK is not enough with a medium level regarding students' achievements.

Sahragard and Saberi study (2018) investigated the knowledge- base of pre-service and in-service EFL teachers in teacher education programs in Iran. The researchers selected a sample of 140 pre-service EFL teachers and 160 in-service EFL teachers. An adapted questionnaire was applied. The teachers were asked to answer questions in relation to different topics like the effectiveness of teaching, material development, learners' characteristics, language acquisition and teacher awareness. The results showed that language concepts and theoretical principles, learners' individual characteristics and language acquisition are the most covered and the most effective field in teaching process. However, material development, teacher awareness, post method indicators are covered the least and the least useful in the teaching field.

Karal and Alev study (2016) investigated the pre-service physics teachers' PCK development. 13 pre-service teachers who have completed a course in physics and mathematics in the academic year 2007-2008 were involved in the study. The instruments of the study were PCK test, observation, lesson plans and interviews. The findings revealed declines in subject matters knowledge, change in teachers' orientations through field-based experience, representation varieties improvement and increases in learners' difficulties knowledge. However, many factors affected the development of PCK like: field-based, past experience, teacher training, mentor teachers, nature of subject matter, written materials and school context.

Depaepe, Torbeyns, Vermeersch, Janssens, Janssen, Kelchtermans, Verschaffel and Dooren study (2015) reported prospective teachers' CK and PCK in rational numbers, the relation between CK and PCK and the differences between CK and PCK between elementary and secondary teachers. 158 prospective elementary teachers and 34 prospective lower secondary mathematics teachers were involved in Belgium. A test was divided into two parts, one consists 12 items for CK and the other consists 12 items for PCK. The results showed gaps in prospective teachers' CK and PCK, positive correlations between CK and PCK and a positive CK not PCK for secondary teachers in comparing with elementary teachers.

Olfos, Goldrine and Estrella study (2014) investigated the relation between teachers' knowledge and students' understanding in relation to CK and PCK. 53 math teachers were selected according to their experience, academic and socioeconomic background. A questionnaire with 30 questions was distributed to measure teachers' CK and PCK and a pre-test and a post- test during one academic year were conducted to 1532 students to examine the gains and achievements of the students. The results showed that teachers' CK has a significant association with students' learning and achievement. While PCK has less significant association and it is difficult to measure.

Elayan study (2007) investigated PCK knowledge of EFL teachers of upper basic stage in Jordan. The participants of the study were 27 EFL teachers who divided into three groups due to their teaching experience. The instruments of the study were classroom observation and semi-structured interviews. The results of the study showed that the teachers had poor PCK referring to subject knowledge, contextual knowledge, pedagogical knowledge and students' knowledge. However, experience played a partial role in improving teachers' PCK. The results also showed that teachers' negative attitudes affect PCK development negatively.

Results

This research aimed to investigate the role of EFL teachers' pre-service professional development programs in enhancing their subject matter and pedagogical knowledge. Consequently, the research questions are:

1. What is the role of pre-service EFL teachers' professional development programs in enhancing their subject matter?
2. What is the role of pre-service EFL teachers' professional development programs in enhancing their pedagogical knowledge?

To answer the first question, the means, standard deviations, rank and degree are calculated for the questionnaire instrument. The results were proposed in table (1) below ranked in a descending order:

Table (1): The Means, Standard Deviation, rank and degree for the questionnaire according to the knowledge of subject matter

N	Item	Mean	Std. Deviation	Rank	Degree
1	Realize the need to foster high standards of the four skills in English lessons for all learners.	4.19	1.07	1	High
6	Realize the difference between general and specific objectives at all language levels.	3.81	1.19	2	High
2	Master English vocabulary knowledge and pronunciation.	3.79	1.04	3	High
7	Realize the scope and sequence of the content of English textbooks for all school grades.	3.74	1.12	4	High
8	Increase my awareness of the need for continued theoretical and pedagogical professional development.	3.74	1.18	5	High
3	Use body language appropriately.	3.70	1.06	6	High
9	Apply my theoretical knowledge in handling learning difficulties encountered by students.	3.57	1.31	7	Medium
5	Use well- structured meaningful utterances within the right context to express my ideas and thoughts.	3.37	1.27	8	Medium
4	Improve my communication strategies like pause, paraphrasing, repetition and turn taking effectively.	3.36	1.16	9	Medium
	Total score	3.70	0.70		High

Table (1) above shows the total mean score regarding the role of pre-service professional development programs on enhancing Jordanian EFL teachers' subject matter is (3.70) and with a standard deviation (0.70) with high degree. The mean values are ranged between (3.36- 4.19) and between medium to high degree.

Between the previous items of the questionnaire, the first item *Realize the need to foster high standards of the four skills in English lessons for all learners*, scored the highest mean score (4.19) with a standard deviation (1.07) and with a (High) degree. Followed by the sixth item *Realize the difference between general and specific objectives at all language levels* with mean score (3.81) with a standard deviation (1.19) and with a (High) degree. However, the lowest mean scores were scored by the 9th, 5th and 4th items with (3.57, 3.37 and 3.36) mean scores with a standard deviation (1.31, 1.27.1.16) respectively and with a

(Medium) degree. While the residual items scored approximately similar results which range between (3.81 – 3.70) mean score with a standard deviation (1.18 – 1.04) with a (High) degree for each.

On the other hand, EFL teachers' knowledge of subject matter was examined through classroom observations. The knowledge of grammar, vocabulary, communication skills and integrating the four skills was observed through the whole lesson.

The knowledge of Grammar

The results show that 18 EFL Jordanian teachers achieved Excellent level with a percentage of 90%, and 2 of them achieved very good level with a percentage of 10%.

The results reveal that almost all of EFL Jordanian teachers focus deeply on grammatical rules even through the comprehension lesson the teacher asked the students to find the "if clause" from the text then she asked them to write the rule on the board. However, other teachers focus on repeating and memorizing the grammatical rules. Two thirds of them care about being accurate when speaking and writing.

One teacher was explaining the zero and first conditional clauses, she wrote the rule on the board giving examples and asked students to work in groups to write two sentences following the rules. One group wrote the following sentence "If I cleans my hands, I will have good health." The teacher told her that she committed a mistake and the verb "cleans" should be "clean".

The knowledge of vocabulary

The results show that 2 EFL Jordanian teachers achieved excellent level with a percentage of 10%, 11 of them achieved very good level with a percentage of 55%, 5 achieved good level with a percentage of 25% and 2 achieved poor level with a percentage of 10%.

The results show that most of EFL teachers achieved very good level in using the correct vocabulary in the correct position. Most of them spell, pronounce and choose the suitable word correctly.

One teacher was trying to manage the class, she asked the students "are you hearing?" instead of listening, in the same class, she was explaining a lesson about animals in the North pole. She said "Today we are going to talk about animals in the North pool".

Other teacher was teaching third grade students and he said, "repeat after me: it is very cold in winter" The first group of students repeat, "it is very cold an winter"

He said, "it is in not an, again repeat, it is very cold in winter". The same group repeated correctly. The second group repeated, "it is very gold in winter", the teacher replied "it is clod with "c" not gold again say cold" the students repeat again correctly.

The knowledge of communication skills

The results of EFL teachers' knowledge of communication skills show that 5 of the participants achieved excellent speaking skills with a percentage of 25%, 7 of them achieved very good level with a percentage of 35%, 2 of them achieved good level with a percentage of 10% and 6 of them achieved poor speaking skills with a percentage of 30%.

However, 2 of the participants achieved excellent listening skills with a percentage of 10%, 4 of them achieved very good level with a percentage of 20%, 7 of them achieved good level with a percentage of 35% and 7 of them achieved poor listening skills with a percentage of 35%.

On the other hand, 5 of the participants achieved excellent body language communication with their students with the percentage of 25%, 3 of them achieved very good body language with a percentage of 15%, 5 of them achieved good body language with a percentage of 25%, 7 of them achieved poor body language with a percentage of 35%.

In contrast, 4 of the participants achieved excellent tone of voice with a percentage of 20%, 1 of them achieved very good level with a percentage of 10%, 5 of them achieved good level with a percentage of 25% and 10 of them achieved poor level with a percentage of 50%.

Many teachers speak Arabic most of the time, they give the instructions of the classroom in Arabic, they ask students if they got the idea of the lesson also in Arabic and they translate the sentences they have uttered. One teacher said that, "the first time I heard English was at the university and when I started my job as a teacher, the principal asked me to translate because of the low level of students." She added that "I forget the words that I have learned at the university, I speak Arabic all the time. If I speak English, the students will complain and I do not want to face problems." She said that "the pre-service professional development programs focus on speaking English all the time and I trained to give the micro lessons in English but the problem is in the real situation, the actual classes are not the same like the virtual or micro ones. I feel that most of the pre-service professional development programs are from different place not applicable in our public schools, to be honest the reality is different."

However, body language, eye contact and voice tone are hardly observed, most of the observed teachers were standing next to the board the whole class. Many of them write on the board most of the time.

The knowledge of integrating the four skills

The results of the study show that 7 of EFL teachers achieved excellent level of integrating the four skills with a percentage of 35%, 3 of them achieved very good level with a percentage of 15%, 6 of them achieved good level with a percentage of 30% and 4 of them achieved poor level with a percentage of 20% in relation to the four skills integration.

The results show that approximately one third of EFL teachers achieved excellent level in integrating the four skills.

Integration the four skills was clear in many observed lessons. One teacher asked students to look at the picture and tell what they see? The students answered "it is a pyramid" the teacher said "good job, and asked one student to write the word on the board," then the teacher asked the whole class to say the word, write it in their notebooks and put it in a sentence and read the sentence. The integration of the four skills was clear in this class.

Speaking, listening, reading and writing integration in one pot was observed clearly in many EFL classes as many EFL teachers use the four skills to teach the language comprehensively.

To answer the second question, the means, standard deviations, rank and degree are calculated for the questionnaire instrument. The results were proposed in table (2) below ranked in a descending order:

Table (2): Means, Standard Deviation, rank and degree for the questionnaire according to the knowledge of pedagogy according to its domains in general

N	Domain	Mean	Std. Deviation	Rank	Degree
1	Planning	3.86	0.83	1	High
3	Assessment	3.76	0.86	2	High
2	Implementation	3.61	0.81	3	Medium
	Total Score	3.71	0.75		High

Table (2) shows that the total score mean regarding the of role of pre-service EFL teachers' professional development programs on enhancing their pedagogical knowledge is (3.71) with a standard deviation (0.75), and with a (High) degree. This table also shows that the *Planning* domain receives the highest mean (3.86) with a standard deviation (0.83), and with a (High) degree, followed by the *Assessment* domain receives the mean (3.76) with a standard deviation (0.86), and with a (High) degree, while the " Implementation " domain receives the lowest mean (3.61) with a standard deviation (0.81), and with a (Medium) degree.

Mean, standard deviation, rank and degree of each item in each domain were calculated as shown in the following tables (3,4,5) ranked in a descending order.

1. Planning domain:

Table (3): Means, Standard Deviations, rank and degree of Planning Domain's Items

N	Item	Mean	Std. Deviation	Rank	Degree
10	Write fully detailed lesson plans.	4.28	1.01	1	High
11	Upgrade the effectiveness of my classroom practices using a detailed lesson plan.	3.93	0.98	2	High
13	Identify the useful tools, resources and assessment methods.	3.63	1.16	3	Medium
12	Achieve the goals of the lesson during specific time.	3.61	1.17	4	Medium
	Total of Planning domain	3.86	0.83		High

Table (3) shows the mean scores of the items in the planning domain which ranged between (4.28 – 3.61), with a standard deviation between (1.17- 1.01) and with a degree ranged between medium to high. While the total result for the planning domain scored (3.86) mean with a standard deviation (0.83) and with a (High) degree.

Between the previous items of planning domain, Item (10) *write fully detailed lesson plans* receives the highest mean (4.28), with a standard deviation of (1.01), and with a (High) degree. Followed by item (11) *upgrade the effectiveness of my classroom practices using a detailed lesson plan* scored mean (3.93), with a standard deviation of (0.98), and with a (High) degree. While item (12) *achieve the goals of the lesson during specific time* received (3.61) mean score, with a standard deviation of (1.17), and with a (Medium) degree.

2. Implementation domain:

Table (4): Means, Standard Deviation, rank and degree of Implementation Domain's Items

N	Item	Mean	Std. Deviation	Rank	Degree
18	Implement authentic materials in the class.	3.79	1.11	1	High
17	Promote students' higher order thinking skills.	3.71	1.13	2	High
20	Set challenging tasks that enable students' progression.	3.66	1.22	3	Medium

15	Vary my teaching techniques and strategies in light of the subject degree of difficulty.	3.64	1.22	4	Medium
19	Manage teaching time appropriately.	3.60	1.28	5	Medium
22	Use English language appropriately in life- like situation.	3.59	1.25	6	Medium
16	Vary my teaching strategies to encourage autonomous and independent learning.	3.53	1.21	7	Medium
21	Focus more on communicative competence and the use of the language rather than rule explanation.	3.50	1.27	8	Medium
14	Connect the new lesson with the previous one and with different subjects.	3.45	1.27	9	Medium
	Total of Implementation domain	3.61	0.81	Medium	

Table (4) shows the mean scores of the items in the implementation domain which ranged between (3.79- 3.45), with a standard deviation ranged between (1.27- 1.11) and with a degree ranged between medium to high. While the total mean for the whole domain scored (3.61) with a standard deviation (0.81), with a (Medium) degree.

Between the previous items of the implementation domain, Item (18) *implement authentic materials in the class* received the highest mean (3.79), with a standard deviation (1.11), and with a (High) degree. Followed by item (17) *promote students' higher order thinking skills* the mean scored (3.71), with a standard deviation (1.13), and with a (High) degree. While item (14) *connect the new lesson with the previous one and with different subjects* received scored the lowest mean (3.45), with a standard deviation (1.27), and with a (Medium) degree.

3. Assessment domain:

Table (5): Means, Standard Deviation, rank and degree of Assessment Domain's Item

N	Item	Mean	Std. Deviation	Rank	Degree
25	Assess students' performance using different methods (diagnostic, formative, summative...)	3.91	1.09	1	High
23	Assess the achievement based on the instructional goals.	3.87	1.13	2	High
24	Identify students' weakness and strength points.	3.74	1.26	3	High
26	Give students the immediate feedback.	3.66	1.24	4	Medium
27	Know how to use assessment effectively to promote progression within the context of my subject.	3.62	1.26	5	Medium
	Total of Assessment domain	3.76	0.86	High	

Table (5) shows the mean scores of the items in the assessment domain which ranged between (3.91 – 3.62), with a standard deviation ranged between (1.26 – 1.09) and with a degree ranged between medium to high. While the total mean for the whole domain scored (3.79) with a standard deviation (0.86), and with a (High) degree.

Between the previous items of the assessment domain. Item (25) *Assess students' performance using different methods (diagnostic, formative, summative...)* received the highest mean (3.91), with a standard deviation of (1.09), and with a (High) degree. Followed by item (23) *Assess the achievement based on the instructional goals* with a mean score of (3.78), a standard deviation of (1.13), and with a (High) degree. While item (27)

Know how to use assessment effectively to promote progression within the context of my subject scored the lowest mean (3.62), with a standard deviation of (1.26), and with a (Medium) degree.

However, the results of the interview and the observation show that 2 EFL teachers with a percentage of 10% plan according to the objectives and follow their plan in presenting the lesson, 7 of them with a percentage of 35% use the ready printed plan but they edit it due to the lesson objectives and 11 of them with a percentage of 55% use the ready printed plan without editing and they do not follow it in their teaching.

The results show that EFL teachers do not realize the importance of planning in the educational process. most of them consider it as supplementary work, others complain that planning is extra paper work as no one cares about and all teachers depend on their intuition and their knowledge of the learners than doing a lot of paper work.

Through observation, two teachers only followed the plan that they have prepared themselves, their classes were more organized even the steps they follow in presenting the lesson were more streamlined.

One of them said, "to keep myself away from students' criticism, to be aware what to do inside the class, what things I need to take with me, to read more about the lesson before presenting it, to connect the lesson horizontally and vertically; I have to plan. I follow SMART planning which refers to specific, measurable, achievable, realistic and timely goals." She added. "I do believe in the importance of planning on both teacher and students. It is not just a piece of paper. It is about long term goals."

Other teacher said, "we took at the pre-service professional development program more than one session about planning and how to plan but you know the real job is different, I actually have 24 classes per week, the time limit, the job loads and again the paper load and also the lack of facilities and students' attitudes and behaviors stopped me to apply what I have taken in the training course."

Knowledge of lesson implementation

Lesson implementation is the way EFL teachers present the lesson following teaching methods, techniques and strategies and teaching tools and authentic materials.

Teaching strategies and approaches

The results show that 3 EFL teachers with a percentage of 15% applied KWL strategy to check students' previous knowledge, what they want to learn and what they have learnt after the lesson, 5 of the them with a percentage of 25% used brain storm, 14 of them with a percentage of 70% used lecturing as a method of teaching, 8 of them with a percentage of 40% employed discussion in their classes. However, no one of them applied debates in their classes, 2 out of 20 EFL teachers with a percentage of 10% used high order thinking skills in their classes, 15 of them forming a percentage of 75% depended on cooperative learning in their classes.

Moreover, 18 of them with a percentage of 90% used translation as a way to facilitate teaching. On the other hand, 5 of them with a percentage of 25% employed technology based approach and role playing strategy. 4 of them with a percentage of 20% used game based approach. To add, top- down approach was used by 14 EFL teachers with a percentage of 70% and 6 of them with a percentage of 30% used bottom- up approach. Drills also was used by 13 EFL teachers with a percentage of 65%.

The results show that most of EFL teacher used the traditional approach in teaching due to their heavy load of work, the number of students in the class and the available facilities. One teachers said, "nothing works with my students except the traditional way. I tried many strategies but everything is useless they thought that we were playing not studying. Then they asked me to repeat the lesson again. Our students are used to the traditional way of teaching. When we give them a class using games or role playing, they thought that they have nothing and this is not teaching." She added, "one student complained that I did not explain the lessons, she said that I play with them all the time, the principal asked me to stop and explain the lessons as other teachers."

Authentic aids and teaching tools

The results of this part show that 7 EFL teachers used authentic materials like illustration tools, newspapers, magazines, and wall panels with a percentage of 35%. 3 of them with a percentage of 15 % used games like Rubik cube and snake and ladder game. In addition, 3 of EFL teachers used pictures and flash cards as illustration tools with a percentage of 15%. 2 of them with a percentage of 10 % used videos and one of them with a percentage of 5% used audio.

The results of this part show that one third of the participants used different authentic materials like newspapers, magazines and wall-panels. While other authentic aids have approximately between 1 to 3 of participants to each category.

One teacher said, "I do not activate the use of authentic materials because we do not have them in the school and I cannot buy them because I teach 4 different classes. It is difficult to prepare a game for each class or buy a tool or flash cards for each class." She added, "we asked the school to bring the flash cards and the wall papers but nobody listened."

Other teacher said, "I tried my best to let my students learn by doing. Actually the school did not give me any authentic tool but I usually use my kids toys like snake and ladder and Rubik cube. Also I bought cartoon papers and gave them to the students and asked them to do wall panels. This makes my students feel more independent, they can learn by doing and makes me feel more comfortable and less responsible for their learning."

Knowledge of students' assessment

The results show that 2 of EFL teachers with a percentage of 10% checked the lesson goals achievement, 8 of them with a percentage of them used formative assessment with a percentage of 40%, 15 of them with a percentage of 75% used summative assessment, 5 of them with a percentage of 25% used peer assessment and feedback. However, 11 of them with a percentage of 55% gave their students home works and 5 of them with the percentage of 25% used the exit card to end their lessons. The results show that EFL teachers achieved poor assessment strategies due to checking goals achievement, peer assessment and feedback.

One teacher said, "the students do not have the ability to assess each other and also the sensitivity between students will cause a lot of problem if they assess each other negatively. Also students' feedback is very important but usually they did not tell the truth, they said everything is ok."

Other teacher said, "from the first class I taught my students to be honest in their feedback because that will help me as a teacher to use different teaching methods and also to help them learn perfectly." She added, "every lesson I gave them sticky notes as an exit card to

write what things they liked, what things they did not like and what things they want me to change next time. I asked them not to write their names. To be honest, I start understand my students better and I start do what they like; that makes teaching job easier for me.”

Knowledge of classroom management

The results show that 5 EFL teachers with the percentage of 25% gave instruction at the beginning of the class, 4 EFL teachers with the percentage of 20% checked students understanding of the given instructions, 19 of them with a percentage of 95% had the authority and control in their classes, their talking time is more than students talking time while one of them with a percentage of 5% gave the student the control over the classes. 6 of them with a percentage of 30% distributed the questions fairly on the students and 8 of them forming a percentage of 40% used discipline strategies like raising hand up, turn off the lights, count to three.

The results show that EFL teachers have poor classroom management. One of the teachers said, “it is the most difficult part in teaching to manage the class, you have different students’ personalities in one room with different backgrounds and different moods. It is impossible to find one way to attract all of them. As a teacher, I told them when I raise my hand that means you have to stop talking. This way is beneficial with some students not all of them.”

Other teacher said, “everything is useless with my students, they keep quite when I shout otherwise, they move, talk, laugh. Every year, I become shocked more than the year before, the students changed, they became noisier after COVID 19.”

Discussions

The first question is concerned with exploring the role of PPDPs in enhancing Jordanian EFL teachers’ subject matter. The following is a discussion of the main results.

1. EFL teachers’ knowledge of subject matter

The findings of this part of the study reveals that EFL teachers had high learning experience regarding subject matter along the PPDP that they have attended before they started their current jobs. Jordanian EFL teachers consider themselves as knowledgeable in fostering high standards of the four skills for their students and realizing the objectives on general or specific basis. EFL teachers found PPDPs were not helpful in supporting them with the appropriate application of the theoretical knowledge regarding learning difficulties faced by students, using the appropriate utterance in the right context to express their ideas and thoughts and improving their communication strategies like pause, paraphrasing and turn taking. EFL teachers focus more on grammar and vocabulary and they face some obstacles in speaking, listening and body language which may affect students’ abilities to speak English fluently.

Focusing on teaching explicit grammar and vocabulary than focusing on the language skills may prevents students’ learning of the language. As Grossman (1990) emphasizes on teaching students the language skills rather than explicit grammar to give the students the chance to practice the language as in real life. EFL teachers’ subject knowledge is important to increase their PCK. According to Shulman (1987) subject matter as a part of PCK affects teaching process positively.

This result is consistent with the results of Sahragard and Saberi study (2018) results which showed that language concepts and theoretical principles and language acquisition are the most covered and the most effective field in teaching process.

This result is against Denbel study (2023) which revealed that subject matter competency was low and EFL teachers had deficiency in subject matter competence. Han, Zhao, Liu and Zhang study (2021) revealed that teachers' limited subject matter knowledge prevents other PCK fields development. Also Hijazi and Al-Natour Study (2019) and Karal and Alev study (2016) revealed declines in subject matters knowledge. However, many factors affected the development of PCK like the nature of subject matter.

Moreover, Depaepe, Torbeyns, Vermeersch, Janssens, Janssen, Kelchtermans, Verschaffel and Dooren study (2015) reported prospective teachers' content knowledge and PCK in Maths. The results showed gaps in prospective teachers' content knowledge and PCK. Also Olfos, Goldrine and Estrella study (2014) The results showed that teachers' content knowledge has a significant association with students' learning and achievement and Elayan study (2007) which showed that the teachers had poor PCK referring to subject knowledge.

2. EFL teachers' knowledge of pedagogy

1. Planning

The findings reveal that EFL teachers had high learning experience along the PPDP regarding planning. They became able to write fully detailed lesson plans and realizing the effectiveness of classroom practices using a detailed lesson plan but they have poor level of realizing the importance of planning. Most of them used the ready made plans. However, PPDPs were not helpful in providing EFL teachers with the ability to achieve the goals of the lesson during specific time.

Planning is one way to promote the quality of education. It is the guide for teachers to realize what, how and when to teach (Amininik, 2000). Different students' learning styles, abilities and characteristics are the challenge for EFL teachers to meet all these differences and the best way to come over these challenges is to design and follow a well- prepared plan (Houston and Beech, 2002).

Lesson plan helps teacher to decide the instructional steps starting with the lesson objectives, the teaching strategies and teacher's teaching orientations, the needed resources, the assessment tools and the classroom interactions (Riddell, 2014)

2. Implementation:

The findings reveal that EFL teachers had medium learning experience along the PPDP. The PPDP helped them with the ways to implement authentic materials in the class and promote students' higher order thinking skills. While they found PPDPs were not helpful due to the connection of English language lessons with different subjects.

However, in real class practices; most EFL teachers used lecturing, translation and cooperative learning. They rarely used authentic aids and teaching tools due to the available facilities in the school.

However, teaching practices should be differentiated due to different types of students (Tarman and Chigisheva, 2017) using different teaching strategies is the way to facilitate teaching and support students' learning according to their needs and different styles. Using different teaching strategies is a clear evidence that students' learning occurs at

different pace and speed. EFL teachers have to know their students' learning challenges through the classroom discussions, observation and face to face tutorials to gather information about their styles and ways of learning and achievements (Tomlinson, 2000).

3. Assessment:

The findings reveal that EFL teachers had high learning experience regarding assessment along PPDP. The PPDPs supported them with the knowledge about students' performance assessment using different methods and students' assessment based on the instructional goals. While PPDPs were not helpful to provide EFL teachers with the knowledge to use assessment to promote students' progression.

However, in real classroom observation; most of EFL teachers depended on the summative assessment and home works. While a few number of them focused on goals achievements, formative assessment, peer assessment, feedback and the use of exit card.

On the other hand, assessment should be used to serve teaching and learning. Teachers have to focus on placing assessment in everyday practices as formative practices and make it as an essential part in their teaching practices and considering students' work more than exams. (Cheng, Rogers and Wang, 2008) moreover, teaching, learning and assessment and assessment work together to reinforce students' learning and raise achievement standards (Berry and Driel, 2008).

The results of the second question regarding quantitative results go in line with Shi, Li and Yeung study (2022). The results showed that teaching strategies knowledge was clear in novice Chinese EFL teachers' classroom practices. Reza Adel and Noughabi study (2022) results revealed that teacher education programs help pre-service EFL teachers to develop their PCK, reflect on their pedagogical practices and influence their teaching strategies knowledge. Abu Amra, Abu Shughair and Abu Shraikh study (2022) findings which revealed that Islamic education teachers got large degrees in regards to assessment knowledge and teaching strategies knowledge. Ekiz- Kiran, Boz and Oztay study (2021) results showed that their knowledge about instructional strategies has improved. Favier, Gorp, Cyvin, B., Cyvin, J. study (2021) showed that pre-service teachers value the course. They announced that the course helps them to develop their PCK, develop their abilities to plan lesson in light of students' needs.

The results of this part regarding quantitative results are against Elayan study (2007). The results of the study showed that the teachers had poor PCK referring to pedagogical knowledge. Ekiz- Kiran, Boz and Oztay study (2021) results showed that science teachers' assessment knowledge has not improved.

On the other hand, qualitative findings show contradictory results due to the gap between EFL teachers' theoretical and practical knowledge, between what they actually know and what they are able to apply, between what they took in the pre-service professional development program sessions and what they face in real classroom situations.

Some conclusions can be made in light of the previous results, first, reward EFL teachers' who attended those programs and encourage EFL teachers' participation and engagement in different professional development programs. Second, revise PPDPs syllabus to balance between theory and practice. Third, conduct a webinar (online seminars) that joins different international EFL teachers from all around the world to exchange knowledge and experiences. Fourth, make PDPPs as obligatory condition for all teachers to practice

teaching and consider it as a license to allow them join schools. finally, conduct persistent research in regard to PPDPs role in different educational field.

Conclusion

It is clear that there is a gap between EFL teachers' subject matter knowledge and pedagogy knowledge. The gap is due to the focus of pre-service professional development programs on theoretical knowledge more than practical knowledge. EFL teachers have good attitudes towards professional development programs but they need more training on their classroom practices and performance.

The role of pre-service professional development programs in enhancing Jordanian EFL teachers' subject matter and pedagogical knowledge has been investigated in this research. This research aimed to examine the role of those programs in subject matter and pedagogy. The research focused on EFL teachers' attitudes as well as real classroom practices. Quantitative and qualitative methods were used. Descriptive statistics and classroom situations' description were used to analyze data. The results showed positive and high EFL teachers' attitudes towards the role of pre-service professional development programs in enhancing their subject matter and pedagogical knowledge. However, the classroom observation and the interviews showed that EFL teachers still need more training courses in relation to pedagogy and communication skills.

To conclude, the research suggested to conduct persistence research about the role of PPDPs in different educational fields, reward and encourage EFL teachers who attended those programs, conduct online webinars to exchange knowledge, revise the syllabus of those programs and make attending them as obligatory to practice teaching.

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