

Perceptions of EFL Teachers about Pedagogical Content Knowledge: A Q Methodology Study

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Abstract

Pedagogical content knowledge (PCK), as a concept representing teacher professionalism and expertise, has received considerable attention since 1980. However, it remains understudied in the field of English language teaching (ELT). In this paper, the Q methodology was used to investigate the shared perceptions of EFL teachers about PCK. This study explored EFL teachers' priorities regarding PCK components. Fourteen EFL teachers participated in the Q study. Forty-six statements were finally selected as the Q sample. Factor analysis revealed that participants grouped into three factors, expressing three distinct viewpoints of PCK components: student-focused, pedagogy-focused, and proficiency-focused components. The findings indicated that teachers placed greater priority on the subject matter, student, and lesson plan components. The results shed light on what teachers choose to focus on and what not to emphasize in their teaching. One practical implication of the findings is that educators and teacher education programs must pay more attention to the student-focused aspect of teaching.

Keywords: EFL teachers, pedagogical content knowledge, Q methodology, teacher perception

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Introduction

The research focus on language teaching has changed from observation of teachers' behavior to the exploration of the language teachers' cognition (Fang, 1996). Teacher cognition, as an important constituent of foreign and second language teacher education (Richards, 2008), encompasses what teachers know, think, and believe. It also plays a significant role in shaping teachers' classroom practices (Borg, 2003). The exploration of the concept of teacher cognition has led to beneficial insights into teachers' professional knowledge.

Pedagogical content knowledge (PCK) as one of the most important components of teachers' professional knowledge (Shulman, 1986, 1987) has prompted scholars to focus on the unique professional expertise that is considered as the distinctive quality of teaching and to distinguish the teaching profession from other professions (Kind, 2009). Mirel (2011) describes PCK as specialized knowledge that teachers use to communicate knowledge to students. Because PCK positively affects the quality of instruction (Kunter et al., 2013) and learning outcomes (Coe, et al., 2014), it has become a vital factor for teachers to conduct effective instruction. Therefore, understanding and examining teachers' PCK is crucial for innovation in teaching and learning.

The literature review demonstrates that a substantial number of studies on PCK are mainly in the fields of science and mathematics (Kind & Chan, 2019). Limited attention has been paid to the study of PCK in language learning in general and foreign language in particular. Therefore, the present study explores what EFL teachers perceive and mentally go through when they transmit and represent English lessons to their students. More specifically, the study investigates EFL teachers' perceptions and subjectivities of PCK using Q methodology. Q is a unique approach and procedure to measuring subjectivity objectively (Brown, 1993). The systematic nature of the Q methodology causes and maintains the whole person and view of every participant in the process of identifying individual views and what they share (Irie, 2014).

Literature Review

Pedagogical Content Knowledge

Teacher knowledge has become a focus of interest to educators and policy makers (Shulman, 1986) and has attracted the attention of scholars and researchers. Shulman's (1987) multi-faceted model of teacher knowledge, one of the longest standing models, involves content knowledge, pedagogical knowledge, and pedagogical content knowledge (PCK), among other types. Shulman claims that while other types of knowledge have their parallels in different professions, PCK remains unique to teachers. As Kind (2017) argues, PCK is identified as a characteristic of teachers' practice and deserves particular attention as an idiosyncrasy of their work. This form of knowledge is described as an important notion in defining the aspects of high-quality education (Gess-Newsome et al., 2017).

According to Park and Oliver (2008), one of the most common ways for researchers is the conceptualization of PCK in terms of its components. Clarifying the PCK components makes the concept of PCK more transparent and less demanding to be applied. It is worth noting that although PCK is theoretically an integrated construct and its components cannot be separated, clarifying its components has practical significance. When the components are distinctly identified, educators and researchers will have clear ideas of what they require to develop and explore with teachers (Jing- Jing, 2014). An overall depiction of PCK components has been made since Shulman (1986) first described the concept of PCK. Shulman (1986) characterized two main components in PCK: (a) the foremost commonly instructed topics in one's field and the foremost valuable ways of presenting those topics and (b) understanding of what makes different topics simple or troublesome to learn (Jing-Jing, 2014).

In case of teaching languages, Borg (2006), for example, considers that teaching English as a foreign language differs from teaching other subjects for several reasons. Other researchers maintain that the medium and content of instruction are intertwined in language teaching and that EFL teachers' PCK has distinctive attributes (Canagarajah, 2013).

The language aspect of the PCK construct has been underlined in some studies (Andrews, 1997, 2008). Andrews (1997) found that language awareness has a profound effect on first and second language teaching. Language awareness encompasses not only the language domain but also the sociolinguistic and cultural domains and has an immediate impact on teachers' teaching performances. Further, Andrews (2008) mentioned that language awareness, which embraces strategic competence and psychomotor skills, is an indispensable building block of the PCK of language teachers and assumes a significant part in the selection of resources for language input.

Although mastery of the language or a high level of target language proficiency is a basic requirement for EFL teachers, it is not conceived to be sufficient for effective teaching. Scholars and researchers have attempted to broaden the PCK components and offer definite indications for this knowledge, nonetheless (Cesur & Ertas, 2018; Shariatifar et al., 2017).

According to Cesur and Ertas (2018), EFL teachers need to be specialists in language teaching methodology and learning as well as mastering a range of skills, competencies, and knowledge types to address the needs of students. They are required to develop specific capabilities to construct stimulating communicative learning environments and provide opportunities to develop content-associated skills. In another study, Shariatifar et al., (2017) concluded that EFL teachers' PCK involves three categories of knowledge: teaching and assessing curriculum components, planning, developing, and managing language instruction, and assessing and developing instruction materials. Recently, Sadeghi et al. (2022), adopting the grounded theory approach, found that EFL teachers' PCK may consist of five dimensions: English language proficiency knowledge, pedagogy knowledge, student knowledge, curriculum knowledge, and assessment knowledge.

The importance of PCK has been highlighted since the late 1980s, and consequently some attempts have been made in the ELT field to shed light on this notion. However, typically the studies that do exist most frequently focus on teachers' perceptions regarding the components of PCK. These studies did not take into account how teachers rank and prioritize the PCK components.

Therefore, there is a need for further research with a new perspective on teachers' pedagogical content knowledge, especially EFL teachers' PCK. That is why this notion has been addressed in this study. Indeed, to achieve this, the Q methodology was adopted.

Q Methodology

Q methodology was first introduced by the British psychologist, William Stephenson, in 1935 and has attracted attention in fields outside psychology (Watts & Stenner, 2012). The methodology is considered as a mixed method that provides qualitative results through statistical analysis to objectively scrutinize participants' perceptions (Newman & Ramlo, 2010). This methodology uses some statistical techniques to obtain a set of shared viewpoints of the participants on a specific topic (Watts & Stenner, 2012).

Q is different from the typical factor analysis, i.e. the R method. While R examines correlations between variables, Q examines correlations between participants on a sample of variables. Q applies factor analysis "to identify groups of participants who interpret a set of items in a comparable manner" (Watts & Stenner, 2005, p. 68). R examines assumptions made a priori by the researcher and included in the study, while Q methodology is closer to a theory-building approach. The typical factor analysis primarily involves a data reduction process, whereas in Q methodology, each statement makes sense in relation to the other, thus representing the overall view of participants holistically (Watts & Stenner, 2005).

In a Q study, participants are asked to rank a set of statements on a forced quasi-normal distribution on a continuum in accordance with the value or priority that they assign to each statement, thus ranking each statement against all others. The importance that participants assign to the statements is not only subjective and personal but also important in relation to all other sorted statements. This complete final sorting of statements, known as a Q-sort, holistically recognizes the perspectives of the participants.

The Q methodology possesses some distinctive characteristics. One of them is that it involves "*forced choice*", requiring participants to prioritize or

rank certain components over others, which reduces the probability of reporting bias. It is particularly significant for establishing teachers' priorities. One limitation of surveys and Likert scales is that teachers desire to see themselves positively. This characteristic presents fewer barriers to the interpretation of Q sorts because teachers rank views in relation to one another rather than agreeing or disagreeing with each viewpoint (Watts & Stenner, 2005).

Another distinctive characteristic of the Q methodology is that it can be conducted with only a few people (Brown, 1993). The Q methodology requires a small number of participants or even single case studies to examine existing perceptions and open them up to investigation (McKeown & Thomas, 2013), but it must have enough participants to establish that there are a variety of viewpoints on the topic being studied (Watts & Stenner, 2012). Participants should be chosen wisely to ensure they have specific and relevant views on the topic (McKeown & Thomas, 2013).

The Q methodology was first presented in the discipline of psychology, but it has since been used in many other disciplines, such as education. The use of this methodology within education is increasing (Fraschini & Park, 2021). For example, it has been used to study teachers' perceptions about educational multilingual reform (Lundberg, 2019) and language learners' self-concept and motivation (Zheng et al., 2020). However, the use of this methodology in foreign language education studies is still scarce. In some rare instances, researchers examined EFL teachers' viewpoints regarding satisfaction within their professional context (Thumvichit, 2022) and L2 learners' affective variables (Li, 2022). In some cases, researchers studied the perspectives of pre-service EFL teachers about teaching competence (Irie et al., 2018). However, to the best of our knowledge, there seem to be virtually no studies examining EFL teachers' perceptions about the components of pedagogical content knowledge.

Purpose of the Study

This study was motivated by a gap in the literature. A thorough literature search on PCK of EFL teachers revealed that it has remained

understudied compared to other fields. This study adopted the Q methodology to investigate the shared perceptions of EFL teachers about PCK in a sample of Iranian teachers. This study explored EFL teachers' priorities regarding PCK components. It hopes to provide more nuanced and complex insights than other approaches. This study was guided by the following research question:

1) How do EFL teachers perceive the PCK components?

Method

Participants

Participants included 14 EFL public high school teachers. The participants' ages varied from 36 to 49 years with 5 to 29 years of teaching experience, and their educational degrees ranged from Bachelor to Ph.D. The teachers were selected through purposive sampling method. Because of its qualitative and exploratory nature, the Q methodology does not require a large number of participants as it focuses not on generalizing the results but on determining the importance of each perspective to the participants (Slaughter et al., 2019). The number of participants sufficient for the Q study is typically between one and three dozen (Webler, et al., 2009). The participants were selected from three provinces in Iran: Lorestan (6 teachers), Ilam (3 teachers), and Khuzestan (5 teachers). The teachers were promised anonymity for their names, and abbreviations, such as "Teacher 2" and "T2" were used alternatively.

Procedures

The Q methodology involves some basic procedures: concourse development (discourse), Q sorting, and factor analysis (Newman & Ramlo, 2010). The concourse involves a series of statements that represent all possible perspectives and viewpoints on the research topic, which the participants are asked to sort. There are various methods for developing a concourse (Ramlo, 2008). Interviews are a typical way to develop a concourse. Essays, articles, and published materials are also a popular source for developing concourses in Q studies (Davis & Michelle, 2011).

To develop the concourse in this study, the researchers gleaned information through semi-structured interviews and a review of the literature on the topic. Thirty EFL public high school teachers were interviewed. An initial set of 90 items was selected from the interviews and from the relevant literature. Due to the large volume, this set was then examined for repetition, relevance and overall coverage by a panel of three experts in the field. This process reduced the initial set to 50 statements, called the Q sample. When the statements were generated, they were sorted into categories. The categories are there purely to ensure that all aspects of the topic of interest to the researchers and participants have been covered. The statements were typed on Q cards, and then the cards were randomly numbered. In order to ensure that the statements were unambiguous, they did not contain double negatives, and covered the broad spectrum of viewpoints, a pilot study was conducted with some EFL teachers.

The pilot study prompted us to revise the final configuration of the Q-sort grid. Each column on the grid was labelled with a number ranging from +5 (most important) to -5 (least important), with 0 as the neutral middle value in the pilot study. For the Q-sort, participants were first asked to categorize the statements into three groups: agree, disagree, and neutral. The participants stated that they did not find it easy to classify the cards into positive (agree) and negative (disagree) groups because although some statements had lower priority for them, they did not oppose or disagree and they felt uncomfortable placing the cards on the negative side of the grid because negative numbers reflect a negative viewpoint or opposition to them. Therefore, we changed the intervals into positive numbers, from 1 to 11 (from least to most important). Generally, it should be noted that the numbers assigned to the columns are relative and do not affect the factor analysis. Another revision included the modification and elimination of some statements from the initial set. The final Q sample was reduced to 46 items (see Appendix). The final statements involved six categories of knowledge: proficiency (9 items), pedagogy (9), student (10), curriculum (10), assessment (4), and teacher's personality trait (4). Unlike surveys, the Q sample has no "claim to validity or reliability" (Brown, 2019),

because it is not the priori objective meaning of a statement that matters but the subjective viewpoints of participants (Slaughter et al., 2019).

After piloting, participants were presented with the 46 statements to rank on a quasi-normal distribution of the statements on a continuum from the least important to the most important, reflecting their feelings, views, or priorities. Figure 1 shows the final presentation of the Q sort of a participant (participant 5) in the investigation, as recorded by the researchers. The numerical values denote the statements. Participants were interviewed about the reasons for their prioritization of Q statements. They were asked to explain their highest and lowest ranking statements. The rankings or scores were then statistically analyzed using inverted factor analysis to demonstrate the diversity of participants' perceptions.

Figure 1
An Instance of the Sorting of Q Cards (Participant 5)

Least Important					Most Important					
1	2	3	4	5	6	7	8	9	10	11
27	6	42	46	45	44	24	28	16	9	15
	5	7	39	30	3	32	33	1	4	
		8	13	10	11	35	34	26		
		14	17	40	18	37	36	2		
			41	25	20	38	43			
				29	22	21				
				19	31	12				
					23					

Data Analysis

When the Q sorts were collected, the numerical data were exposed to factor analysis using SPSS software (Note: Data were entered into SPSS as positive, negative and neutral values). Factor analysis was performed through varimax rotation and principal component analysis. A three-factor solution was chosen. The validity of the three-factor solution was established using a scree plot of factor eigenvalues. The eigenvalues of all three factors were above 1.00

(see Figure 2 below). The value of the total variance explained is shown in Table 1.

Table 1

The Total Variance Explained of Three Identified Factors

Factors	Rotation Sums of Squared Loadings			Extraction Sums of Squared Loadings		
	Total	% of Variance	Cumulative %	Total	% of Variance	Cumulative %
Factor 1	2.733	19.524	19.524	3.845	27.465	27.465
Factor 2	2.530	18.069	37.592	2.164	15.455	42.920
Factor 3	2.074	14.818	52.410	1.329	9.490	52.410

Table 1 shows that the factor analysis identified three factors. The three factors accounted for 52.41% of the study variance. The first factor constitutes 19.52% of the total variance, the second factor and the third factor account for 18.06% and 14.81% of the total variance, respectively. Figure 2 shows the Scree Plot. In this diagram, the three factors can be seen quite clearly. The factors 1, 2, and 3 positions display that they have the greatest explanatory power compared to the other factors because they have the highest eigenvalue.

Figure 2

Scree Plot of Factors

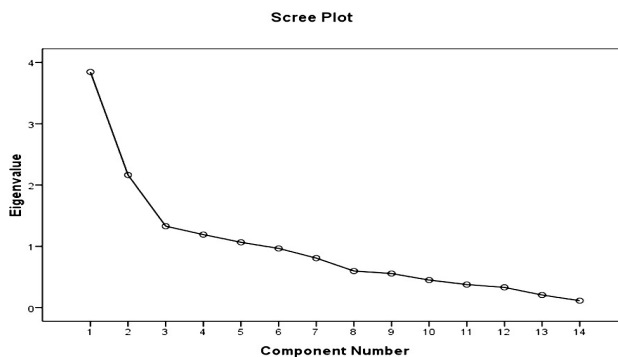


Table 2 below shows the rotating matrix of factors. This matrix is used to identify those participants who fall under each of the three factors. As you can see, participants number 1, 6, 8, 11, 13, and 14 collectively constitute factor 1, participants number 2, 3, 7, and 9 make up factor 2, and participants number 4, 5, 10, and 12 make up factor 3.

Table 2

The Rotating Matrix of Factors

Participa nts	Component		
	1	2	3
P1	.623	.489	-.033
P2	.180	.647	.324
P3	.087	.694	.262
P4	-.060	.189	.658
P5	-.079	.250	.702
P6	.615	.244	-.378
P7	.252	.497	-.600
P8	.588	-.398	.330
P9	.170	.668	.048
P10	.342	.162	.433
P11	.660	.035	-.029
P12	-.003	.009	.411
P13	.751	.274	-.036
P14	.603	.526	-.024

Results

The results of the Q analysis are presented below in the form of a narrative description (Watts & Stenner, 2012). In parentheses, the first number denotes the statement number, and the second number indicates the factor array for that statement (see Appendix for the full list of statements with the factor arrays). The analysis and extracted results are grounded on the list of distinguishing statements for each factor. In other words, the researchers first considered whether a statement for one factor was significantly higher (or

lower) than other factors, and then whether the statement ranked higher (or lower) than other statements of the same factor (Fraschini & Park, 2021). Distinguishing statements define the major perspective in each factor and help identify common and different perspectives among the factors (Watts & Stenner, 2012). The presentation of each factor was approved and illustrated with explanations and comments in the interviews. The three factors were labeled as "*student-focused*", "*pedagogy-focused*", and "*proficiency-focused*" components.

Factor 1: Student-Focused Components

This factor accounted for 19.52% of the study variance. The eigenvalue was 3.80. Six participants (participants 1, 6, 8, 11, 13, and 14) loaded significantly on this factor, all (except for one) were female. They were between the age range of 36 and 41 years old and had between 3 and 26 years of teaching experience. They had an average of 11 years of teaching experience. Three participants had an MA, one had a doctorate, and two had a bachelor's degree.

Teachers loading on this factor ranked significantly high for the statements indicating knowledge of "*master of subject matter*" (42, +5), knowledge of motivating students (19, +4), and knowledge of emotional and supportive relationship with students (18, +4) as the most important components in effective transformation of lessons to students.

One of the teachers (T8) described her prioritization as follows:

"First and foremost, a teacher must master the subject matter, that is, he/she must know what to teach. Even the best teachers with sufficient knowledge of language theories and learning will not succeed in teaching if they do not master the subject matter sufficiently. She continued, 'I think learners need to be motivated enough to learn. In fact, I these two items (mastery of subject matter and

motivating student) are related; that is, when the teacher knows what she wants to teach (subject matter), she can motivate the student."

Teachers loading this factor believed that they need to establish an emotional and supportive relationship with students (19, +3) and be aware of students' expectations (5, +2), motivation, interest, and enthusiasm (41, +2) before teaching and providing instruction. Some of the teachers gave examples of how important it is to build an emotional and supportive rapport with students. For example, Teacher 14 acknowledged:

"Well, since most of the students have limited proficiency in English, they usually feel anxious. I notice that they feel frightened and have negative feelings toward the subject. So, I first try to build a supportive and emotional relationship with them and motivate them." Teacher 6 stated that " creating an emotional and supportive relationship with students increases students' trust in the teacher and results in students learning the lessons faster and better."

Another important feature of teachers loading on this factor is the concern for having lesson plans (44, +3) and having clear objectives for each lesson (11, +3). In this regard, teacher 11 explained:

"Without a lesson plan, nothing goes right. Without a lesson plan, the teacher can forget important points."

Participant 1 confirmed:

"Based on the subject matter and the lesson plan, we set up and what we know about the students, we can clearly define the objectives of each lesson. Without any of these, our work would be incomplete."

Table 3*Distinguishing Statements of Factor1*

No.	Statements	Factor Array
5	Knowledge of students' expectations	+2
8	Assigning effective homework	+1
11	Having clear objectives for each lesson	+3
13	Awareness of the structure of the textbook	+2
18	Knowledge of motivating students	+4
19	Knowledge of emotional and supportive relationship with students	+4
20	Awareness of possible differences students may encounter	+2
41	Awareness of students' motivation, interest, and enthusiasm	+2
42	Master of subject matter that teacher is supposed to teach	+5
44	Having lesson plan	+3
45	Developing materials to supplement the textbook	0
9	Being highly proficient in target language	-2
15	Using various methods and techniques	0
16	Feedback provision for students' performance	-1
17	Using traditional methods (GTM, ALM)	-5
25	Knowledge of computer-assisted language teaching	-3
26	Using Eclectic method	-1
29	Knowledge of general goals and objectives of ELT materials	-2
34	Knowledge of teaching theories	-2
36	Knowledge of appropriate ways of assessment	-1
37	Being well-organized in professional work	-1
38	Promoting critical thinking skills in students	-3
40	Being enthusiastic about teaching	-3

On the other hand, teachers perceived knowledge of using traditional methods (GTM and ALM) (17, -5) and awareness of educational system policies (27, -4) as the least important components to be considered in teaching.

In relation to this prioritization, Teacher 13 said:

"It is better that we as EFL teachers do not know traditional methods because when

you know them and you want to run away from them, it becomes harder. This component is destructive in my opinion. It inhibits the creativity of teachers."

Another teacher (Teacher 14) remarked that:

Traditional methods do not play a key role in learning second language effectively.

As for the "awareness of educational policies" component, participant 11 explained why she ranked the item lower as follows:

"In my opinion, knowledge of educational policies does not have a helpful effect. Usually, the policies do not lead to effective language learning, even if it is officially stated so. It is better not to know them and do our job properly. However, many policies are dictated to teachers, and they acquire this knowledge willingly or unwillingly."

Participant 1 mentioned that:

"Knowledge of material development is more effective for tutoring classes because teaching materials are pre-prepared and the teacher has to teach them."

This explanation can approve the low priority of the statement "knowledge of the general goals and objectives of ELT materials" (29, -2) as determined by the education system.

Teachers also ranked the knowledge of being enthusiastic about teaching (40, -3), knowledge of computer-assisted language teaching (25, -3), and the promotion of critical thinking skills in students (38, -3) lower than other factors. Participant 8 stated:

"The use of computers for language teaching is very important, but it is not considered essential in Iran and our schools because most schools do not have the necessary facilities. On the other hand, Konkour (Iranian University Entrance Exam) has made students focus on multiple-choice tests, which can be administered with a test book."

Participant 11 noted,

"In language teaching, the physical presence of a strong teacher in the

classroom is the most important factor, and the presence of educational technology and computers to teach concepts is not considered very necessary. The presence of a computer in the classroom can cause students to be mentally distracted from their learning goals."

Factor 2: Pedagogy-Focused Components

This factor explained 18.06% of the variance in the study. Its eigenvalue was 2.30. Four participants (participants 2, 3, 7, and 9) loaded significantly on this factor, two of them were female and two were male. Their age range is 36-48 years and their teaching experience ranges from 2 to 29 years. They had an average of 12 years of experience. Three participants had an MA and one had a Ph.D.

Teachers whose sorts load on the factor share the perception that the knowledge of using various methods and techniques (15, +5), high proficiency in English language teaching (9, +4), and knowledge of classroom management (31, +4) are the most important components to be considered. The focus seems to be more on pedagogical teaching. Participant 9 maintained that:

"The use of various teaching techniques and methods is critical to teaching English and classroom management enables the teacher to make the best use of time and not waste class time."

In this group, the pedagogy, student, and personality components are ranked higher. According to participants, to be an effective teacher, teachers must use eclectic methods (26, +3), be enthusiastic about teaching (40, +3), establish a good teacher-student relationship (39, +3), have knowledge of students' differences (10, +3), be confident in the classroom (7, +2), be aware of students' attitudes toward learning (14, +2), and be well-organized in their professional work (37, +2).

In this factor, knowledge of the culture of the target language (46, -5) is the least important component regarding its impact on teachers' effective teaching. Teacher 2 explained her prioritization as follows:

"Knowledge of the culture of the target language is not considered important because in Iran English language is not used much for

communication and because the textbooks are designed based on our own culture." Participant 7 stated, " Knowledge of the culture of the second language does not have a crucial role in language teaching, and learners can meet their needs without knowledge of the culture of the target language."

Similar to factor 1, teachers in this factor believed that awareness of educational system policies (27, -4) and material development (3, -4) are not so important. Regarding the priorities, participant 3 stated:

"Because the textbooks are prepared in advance and the content is predetermined, this component does not matter much to teachers. Educational system policies are also dictated and teachers are implicitly aware of them, so teachers do not need self-conscious knowledge."

These teachers also felt that knowledge of challenging students (22,-3), motivating students (18, -3), and having a lesson plan (44, -3) were not as important as the other components.

Table 4

Distinguishing Statements of Factor 2

No.	Statements	Factor Array
15	Knowledge of using various methods and techniques	+5
31	Knowledge of classroom management	+4
7	Being confident in the class	+2
10	Knowledge of students' differences	+3
14	Awareness of students' attitudes toward learning	+2
17	Knowledge of using traditional methods	+1
21	Knowledge of learning styles	-1
29	Knowledge of general goals and objectives of ELT materials	+1
30	Knowledge of how to connect old and new topics	+1
37	Being well-organized in professional work	+2
38	Promoting critical thinking skills in students	+2
40	Being enthusiastic about teaching	+3
1	Knowledge of CLT method (speaking)	+1

2	Knowledge of vocabulary	0
13	Awareness of the structure of the textbook	-2
18	Knowledge of motivating students	-3
20	Possible difficulties students may encounter	-1
22	Knowledge of challenge for students	-3
24	Different assessment to ascertain students' understanding or confusion	-2
32	Knowledge of pronunciation	-1
33	Knowledge of writing	-3
35	Knowledge of teaching reading	-1
43	Knowledge of listening	-2
44	Knowledge of lesson plan	-3
46	Knowledge of culture of target language	-5

Factor 3: Proficiency-Focused Components

This factor accounted for 14.81 % of the study variance. Four participants (participants 4, 5, 10, and 12), two males and two females, significantly loaded on this factor. Its eigenvalue was 1.40. The age of the participants ranged from 36 to 49 years. All participants hold a master's degree. They had an average of 16.25 years of experience.

As for participants in factor 2, teachers loading on this factor perceived the component of being highly proficient in the target language (9, +4) to be critical. However, what most distinguishes the viewpoint of the participants loading on the factor from factor 2 is knowledge of the CLT (communicative language teaching) method (knowledge of speaking) (1, +5) and knowledge of vocabulary (2, +4), emphasizing the importance of language proficiency.

Participant 4 explained the reasons for this prioritization as follows:

"Since the CLT approach is the education system's intended curriculum for language learning, and mastery of the target language and vocabulary is so important in this approach." Teacher 10 pointed out that 'the CLT method is the most appropriate method for language teaching, and such a teaching method requires a high level of foreign language proficiency on the part of the teacher. Usually, the high level of

proficiency and mastery of the language by the language teacher is reflected in the speaking skill, which requires a high level of vocabulary and grammatical knowledge of the language."

In other words, in this factor, participants prioritized the statement indicating teacher's professional (proficiency) knowledge as significantly high. They believed that teachers must have knowledge of teaching theories (34, +3) and language skills and components, such as listening (43, +3), reading (35, +2), writing (33, +2), pronunciation (32, +2), and grammar (28, +3) to effectively represent content to students.

In support of the priorities, Participant 5 noted:

"Having specialized knowledge is key to a teacher's success; without it, it is impossible to convey information to students. A teacher without specialized knowledge is not truly qualified to be a teacher and will not succeed in teaching and learning content to students. Without this knowledge, the teacher will not be respected enough by the students in the classroom, and his confidence will decrease. Without self-confidence, the teacher is unable to motivate students and create a positive environment of cooperation and collaboration in the learning and teaching process." In addition, Teacher 12 commented that "*Vocabulary and grammar skills, have always been a priority for both teachers and learners, especially vocabulary, due to their importance in the university entrance exam, Konkour. Language theories can also help teachers teach better."*

Teachers also paid more attention to the assessment. They prioritized the knowledge of appropriate ways of assessment (36, +2), knowledge of feedback provision for students' performance (16, +1) and different assessments to ascertain students' understanding and confusion (24, +1), and knowledge of correction (4, +1) in higher ranks. In this factor, the component of knowledge about computer-assisted language teaching (25, -1) enjoys a higher rank. One of the participants stressed the importance of assessment as follows:

"Teachers' language proficiency, pedagogical knowledge, and other knowledge components are useful as long as the teacher can assess

learners, and know how to assess each group and subject. For example, what is the best way to assess grammar and vocabulary knowledge and reading comprehension? " (T10). Participant 5 acknowledged that " classroom assessments not only identify areas of student difficulty and weakness but also serve to inform teachers about instruction."

On the other hand, teachers rated classroom management (31, -5) and being confident in the class (7, -4) in the lowest positions. Compared to Factors 1 and 2, the components of knowledge of students' expectations (5, -2), emotional and supportive relationship with students (19, -3), knowledge of students' differences (10, -3), attitudes toward learning (14, -2), good teacher-student relationship (39, -2), awareness of students' motivation, interest, and enthusiasm (41, -1) were ranked lower in this factor. Knowledge of learning styles (21, -3) and having a good sense of humor (6, -2) were also prioritized in the lower ranks.

Teacher 5 commented:

"The ability to create an emotional relationship with students and to understand the individual differences between students is less important than having specialized knowledge. Without specialized knowledge, the ability to recognize individual differences and the ability to build an emotional relationship with students are not beneficial, and only along with the teacher's specialized knowledge, can these factors be considered as complementary factors for teaching concepts and designing the learning process."

Table 5

Distinguishing Statements of Factor 3

No	Statement	Factor Array
1	Knowledge of CLT method (speaking)	+5
2	Knowledge of vocabulary	+4
4	Knowledge of correction	+1
16	Knowledge of feedback provision for students' performance	+1

22	Challenge for students	0
24	Different assessment to ascertain students' understanding or confusion	+1
25	Knowledge of computer-assisted language teaching	-1
27	Awareness of educational system's policies	-2
28	Knowledge of grammar	+3
32	Knowledge of pronunciation	+2
33	Knowledge of writing	+2
34	Knowledge of teaching theories	+3
35	Knowledge of teaching reading	+2
36	Knowledge of appropriate ways of assessment	+2
43	Knowledge of teaching listening	+3
5	Knowledge of students' expectations	-2
6	Having good sense of humour	-2
7	Being confident in the class	-4
10	Knowledge of students' differences	-3
14	Awareness of students' attitude toward learning	-2
19	Knowledge of emotional and supportive relationship with students	-3
21	Knowledge of learning styles	-3
23	Knowledge of teaching strategies	+1
31	Knowledge of classroom management	-5
39	Creating a good teacher-student relationship	-2
41	Awareness of students' motivation, interest, and enthusiasm	-1
42	Master of subject matter that teacher is supposed to teach	-1
45	Developing materials to supplement the textbook	-4

Discussion and Conclusion

The main purpose of this study was to investigate EFL teachers' perceptions of pedagogical content knowledge (PCK) in a sample of Iranian EFL public high school teachers. More specifically, this study explored EFL teachers' variant perceptions and priorities regarding their focus on PCK components to identify subjectivity clusters within this sample of teachers. The findings of this study can be applied to similar situations. By permitting teachers to identify their perceptions and priorities using the Q methodology, this study enriches the literature by providing a broader and richer perspective on the PCK

components of EFL teachers. In this study, three factors were identified: student-focused, pedagogy-focused, and proficiency-focused. Each of these factors reported significantly different perceptions and priorities. These factors conceptualize EFL teachers' instruction. It can inform or possibly guide their instructional practices.

The first point to note is that teachers consider the subject matter knowledge as the most important component of pedagogical content knowledge. Many studies have acknowledged the leading role of the knowledge of the subject matter in teaching practice (Gess-Newsome, 1999; Wilson et al., 1987). The finding underscores the importance of knowledge of subject matter in teaching English.

Another noticeable point is that more participants loaded on the first factor, i.e., student-focused components. This is a strikingly dominant perception. In this factor, in the perceptions of EFL teachers, a higher value and priority is placed on the components related to subject matter knowledge, student-related issues, and having lesson plans. Considering Shulman's (1986) definition of PCK as blending subject matter or content knowledge and pedagogy knowledge to transform and convey content in a form that can be comprehensible to students, the findings imply that once teachers have acquired subject matter knowledge, they need to consider the components of students and lesson planning before selecting pedagogical components to transfer the subject matter to students. This finding is consistent with Kind and Chan's (2019) position that student knowledge is considered as a "*bridging*" component between content knowledge and pedagogical knowledge. It helps teachers make the right decisions concerning the selection of instructional strategies to transfer content knowledge to students.

The top priority of components related to students, such as "*knowledge of emotional and supportive relationship with students*" and "*creating a good teacher-student relationship*", as well as teachers' comments may propose that foreign language teachers need to adjust their teaching approaches and methods to maximize the beneficial effects of positive emotions and minimize the harmful effects of negative emotions. This concern is aligned with the

position of scholars such as MacIntyre and Gregersen (2012), who assert that emotions can significantly affect foreign language learning. This finding is in line with the view of Richards (2020), who claims that teaching is not only about how to deliver subject matter to learners but also about how to manage the emotional dimensions of teaching and learning. In other words, teachers must remember that while content and well-planned classes are important, a student needs to be motivated with phrases or rewards not only *academically* but also *emotionally* (Nugent, 2009).

Factor 2, the pedagogy-focused components, sheds light on the prominence of the teacher's knowledge of using various methods and techniques and classroom management as well as knowledge of the differences between students. In this factor, knowledge of using various methods and techniques was placed at the top of the ranking, implying that it is the most crucial factor for teachers to consider when teaching.

According to the teachers' priorities, classroom management is placed as a top priority, while lesson planning has the lowest ranking. The teachers seem to use classroom management as a tool to control the presentation of content. Even knowledge and awareness of the differences among students serves as a means of better management. The importance of classroom management in the successful delivery of instruction has been highlighted by scholars, such as Anderson and Kincaid (2005) and Ben (2006), who contend that effective classroom management prepares and facilitates effective instruction through the creation of a prolific teacher-student relationship. This is critical to the advancement of teaching and learning.

Factor 3, proficiency-focused components, illustrates the perception of teachers who care the most about language proficiency. In this factor, teachers placed the most emphasis on their own language proficiency: Knowledge of the CLT method (speaking), vocabulary, teaching theories, grammar, and listening comprehension. On the other hand, they neglected or downplayed the students and the factors that affect their learning. For this reason, classroom management has become the most insignificant factor because the emotional and supportive connection with students is not considered important.

According to this group, the class can probably be managed with mastery of language skills, and classroom management knowledge is not essential.

This can be explained by the fact that participants in this factor had the highest average teaching experience compared with other factors. Previous studies confirm that experienced language teachers put more emphasis on language issues in their decisions than less experienced teachers (Nunan, 1992), and that experienced teachers learn to automate the routines related to classroom management, and therefore can emphasize more on content issues (Borg, 2003).

The findings from the study reveal that the perceptions held by EFL teachers tend to represent a multidimensional concept. They underscore the idea that PCK goes beyond the mere amalgam of two constituent knowledge areas: knowledge of subject matter and knowledge of pedagogy. Indeed, the findings imply that EFL teachers' PCK encompasses subject matter knowledge, lesson planning knowledge, learner knowledge, teaching methods and techniques knowledge, classroom management, and assessment knowledge. They demonstrate a more specific clarification of the PCK components.

The findings of the study also suggest that teachers' priorities do not exist in isolation from their context. Participants described priorities in accordance with their contextual conditions that have a profound effect on their actual practices. The conditions, which include factors such as school facilities, high-stake exams, and macro-political concerns, are the circumstances in which teachers would need to change their pedagogical actions and decisions.

This study offers several implications for the areas of continuing professional development and teacher education. The clearest issue identified by the study concerns the priority given to student-focused components in teacher education programs. Teachers and teacher educators should be aware of the effect of the teacher-student relationship and the emotional dimension in their EFL classroom, as these have an important impact on students' attitudes and achievement (Nugent, 2009).

The diverse perceptions identified in this study can raise EFL teachers'

awareness of the different viewpoints of effective transformation of lessons to students and the accounts of the distinctive perceptions of teachers' knowledge concerning the most important components of PCK. Additionally, teacher educators who gain insight into the perceptions of in-service teachers about language teaching may identify areas to which they should pay more attention during teacher training programs. The findings can also lead to the identification of professional development and training mechanisms that may enhance students' learning experiences in the classroom. Based on the results of this study concerning student-focused issues, training programs for teachers, teacher educators, and EFL teachers could take advantage of advances in educational psychology.

Q method is an analytical method for exploring subjectivity, but it examines subjectivity within a single group. The generalization and relevance of this study can be enhanced by applying this methodology on a larger scale or by supplementing it with qualitative research methods such as reflective diaries and classroom observation. Furthermore, complementing the study by examining the experiences of students in the classroom may provide additional insight into the priorities teachers set when delivering instruction in the classroom.

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Appendix

The statements of Q-sort and factor arrays of the statements in three factors

No.	Statements	Scoring Statements in Extracted Factors		
		Factor 1	Factor2	Factor3
		Factor Array	Factor Array	Factor Array
1	Knowledge of CLT method (knowledge of speaking)	+3	+1	+5
2	Knowledge of Vocabulary	+1	0	+4
3	Knowledge of Material development	-4	-4	0
4	Knowledge of Correction	0	0	+1
5	Knowledge of Students' expectations	+2	+1	-2
6	Having Good Sense of Humour	0	0	-2
7	Being Confident in the class	0	+2	-4
8	Assigning Effective Homework	+1	-1	-1
9	Being highly proficient in target language	-2	+4	+4
10	Knowledge of Students' Differences	0	+3	-3
11	Having Clear Objective for each Lesson	+3	0	0
12	Knowledge of Curriculum	-1	-1	-1
13	Awareness of the Structure of the Textbook	+2	-2	0
14	Awareness of Students' Attitudes toward Learning English	+1	+2	-2
15	Knowledge of Using Various Methods and Techniques	0	+5	+1
16	Knowledge of Feedback Provision for Students' Performance	-1	0	+1
17	Knowledge of Using Traditional Methods (GTM,ALM)	-5	+1	-1
18	Knowledge of Motivating Students	+4	-3	+2

19	Knowledge of Emotional and Supportive Relationship with Students	+4	0	-3
20	Awareness of Possible Difficulties Students may Encounter during Learning	+2	-1	0
21	Knowledge of Learning Styles	-2	-1	-3
22	Knowledge of Challenge for Students	-1	-3	0
23	Knowledge of Teaching Strategies	+2	+2	+1
24	Different Assessments to Ascertain Students' Understanding or Confusion	-1	-2	+1
25	Knowledge of Computer-Assisted Language Teaching	-3	-2	-1
26	Knowledge of Using Eclectic Method	-1	+3	+3
27	Awareness of Educational System's Policies	-4	-4	-2
28	Knowledge of Grammar	+1	+1	+3
29	Knowledge of General Goals and Objectives of ELT Materials (Textbooks)	-2	+1	0
30	Knowledge of How to Connect Old and New Topics	-3	+1	-3
31	Knowledge of Classroom Management	+1	+4	-5
32	Knowledge of Pronunciation	+1	-1	+2
33	Knowledge of Writing (writing composition, letter,)	-2	-3	+2
34	Knowledge of Teaching Theories	-2	-1	+3
35	Knowledge of teaching Reading	0	-1	+2
36	Knowledge of Appropriate ways of Assessment	-1	0	+2
37	Being Well-organized in Professional Work	-1	+2	0

38	Promoting Critical Thinking Skills in Students	-3	+2	+1
39	Creating a Good Teacher-Student Relationship	+3	+3	-2
40	Being Enthusiastic about Teaching	-3	+3	+1
41	Awareness of Students' Motivation, Interest and Enthusiasm	+2	+1	-1
42	Master of Subject Matter that the teacher is Supposed to Teach	+5	0	-1
43	Knowledge of Teaching Listening	+1	-2	+3
44	Having Lesson Plan	+3	-3	-1
45	Developing Materials to Supplement the Textbook	0	-2	-4
46	Knowledge of the Culture of Target Language	0	-5	0