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***Article***

# A Research on the Status Quo of PCK Structure and Construction of Structural Model of Pre-service Middle School English Teachers

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## Abstract

The purpose of this study was to ascertain the significance of the current state of the PCK structure for pre-service middle school English instructors in China. It was determined that Chinese English teachers were having difficulties because they were unfamiliar with the importance of the PCK structure. This study used a quantitative approach, and data were gathered from the target group using a questionnaire. The sample size for this study was 720, and the target demographic of English teachers responded at 40%. This study finds that instructors' knowledge of the study's background, teachers' knowledge of students' mental abilities, and teachers' curriculum knowledge all play a crucial role in influencing teachers' conduct and pedagogical content knowledge for students. Additionally, this study demonstrates that if teachers know the educational objectives, they will produce more successful tactics. This study is both theoretical and practical in nature, as it addresses a theoretical gap in the literature and makes substantial recommendations for improving the performance of middle school English teachers.

## Keywords

Teacher's knowledge, students' knowledge, curriculum knowledge, teacher behaviour, and pedagogical content knowledge.

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The relevance of pedagogical subject knowledge for instructors cannot be overstated in the current era since teachers use this idea to refine their tactics for delivering information to students. However, teachers in various nations, particularly China, face difficulties developing pedagogical content knowledge structures to build strategies and implement them according to the curriculum's requirements. Numerous studies have established the critical role of pedagogical content knowledge for Chinese teachers. If they are familiar with the organisational goals and wish to improve their students' performance, they must adhere to the proper structure by analysing the strategies used to develop an organised framework for curriculum design (Smith et al., 2022). English teachers, in particular, face difficulties since they are unfamiliar with their pupils' knowledge and thus are unable to devise tactics appropriate to their mental level (García-Lázaro et al., 2022).

On the other hand, it has become critical to understand the curriculum and the context of the study to improve not only performance but also the strategy for developing pedagogical content knowledge to improve students' performance, particularly in the English subject. Additionally, there is a significant need for the English language market in China. As the population grows and connects with the rest of the world, they require the English language for multifunctional communication. The static information about the growing need for English teachers in China is depicted in Figure 1.

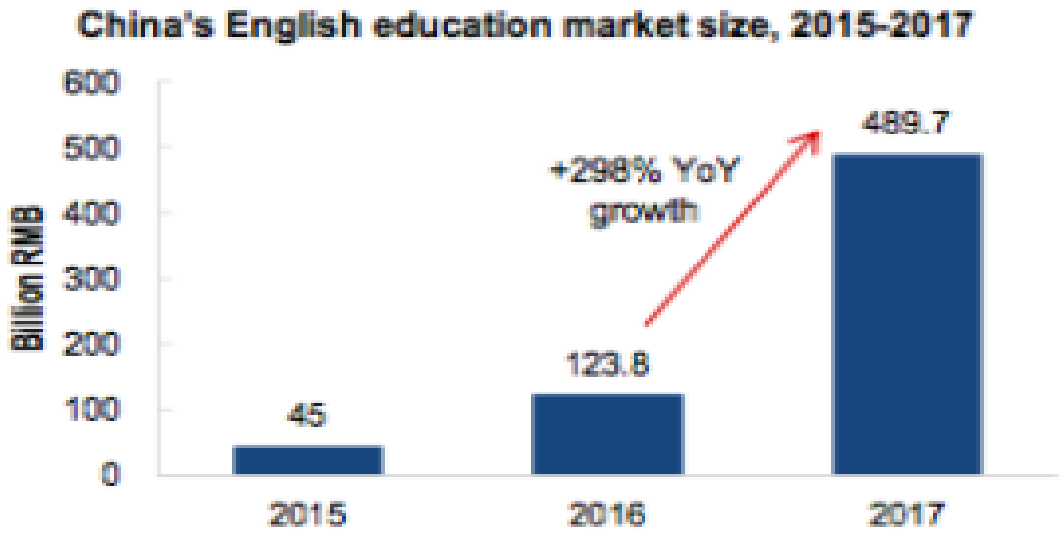


**Figure 1.** *China's English Education Market*

Teachers' knowledge refers to information that a teacher has gained through experience regarding his intrinsic potential to improve pupils' performance following the study's environment (Sepahvand & Abdali-Mohammadi, 2022). Teachers are indeed more successful, and by critically examining their students' performance in class and other extra-curricular activities, these teachers assist students in improving their performance to an advanced level. However, it is also a vital success factor for teachers seeking to enhance their performance and build more effective tactics. Additionally, "student knowledge" refers to the teacher's information about a student based on their involvement and performance in-class activity (Cilliers et al., 2022). In this regard, it is known that teachers who are well informed about their students' performance and who understand critically how important their students are to them and are willing to enhance their performance are successful.

However, the teacher's function is not limited to comprehending the students' circumstances; rather, the teacher's key role is to improve student performance through a situation analysis. Similarly, curriculum knowledge refers to the teacher's information to create tactics and class activities for their students (van Braak et al., 2022). The curriculum is designed to build the activity's framework to deliver it to pupils through proper implementation. Additionally, it is believed that to provide pedagogical information to the teacher, the teacher must have vital information about the curriculum and should actively engage in its improvement over time, according to the teacher's level. According to the study's context, teacher behaviour relates to the teachers' view and attitude toward the class and students.

There are both positive and negative teacher behaviours toward students since if students participate actively in-class activities and do well, the instructor's eventual behaviour toward them will be favourable. However, if pupils are not performing satisfactorily and are disinterested in classroom activities, the teacher's demeanour will be unfavourable. Additionally, it is critical to recognise that student behaviour affects instructor behaviour. Knowledge of educational objectives refers to our teachers' knowledge of the course's final purpose for any class. Teachers who are well informed and have sufficient information about the class's purpose devise ways to achieve student performance improvement. In this regard, the institution's professors handle students following the predetermined educational objectives. Pedagogical content knowledge refers to the portion of a teacher's knowledge that enables them to design tactics that increase a student's performance and help them establish techniques for communicating information to students in a developing and understandable manner.

This study aims to determine the extent to which the status quo of pedagogical content knowledge influences Chinese English teachers. However, because English instructors in China are in crisis (Throop Robinson et al., 2022), this study is meant to elicit vital information on the influencing elements that must be considered when considering pedagogical subject knowledge. Additionally, this study is intended to emphasise the influencing role of specific information about the context and content of the course, the teacher's information about his pupils, and the teacher's knowledge of the curriculum on the teacher's conduct and pedagogical content knowledge. Similarly, this study aims to determine the mediating function of teacher conduct in the relationship between teacher knowledge, teacher knowledge of students, and curricular knowledge and pedagogical content knowledge. Additionally, this study aims to ascertain the moderating effect of understanding of educational objectives to comprehend the link between the variables. Notably, the study's ultimate goal is to represent the structural model for pedagogical subject knowledge and the critical function it plays for English teachers.

The study's significance is that it is designed to address theoretical gaps in the literature and practical gaps in implementation to comprehend the critical role of the structural model of pedagogical content knowledge in developing the institution's and student's performance through the English teacher. In this regard, this study provides both theoretical and practical implementation for gaining understanding and generating strategies in light of the study's findings to view the study's conclusion as vital for enhancing the English instructors' performance. The purpose of this study is to discuss the difficulties that English teachers face in China (Sulistyarini et al., 2022) to improve their performance through the study's relevant and logical recommendations.

## 2. Literature Review

### 2.1 Role of Teachers' Knowledge in Teacher's Behavior and Pedagogical Content Knowledge

Teachers' knowledge refers to their knowledge about their students and their actions. It is critical to understand that teachers' knowledge is critical for improving students' performance because, unless and until a teacher is properly informed about the situation and mental capability of the student, it will be extremely difficult for him to develop strategies for improving the student's performance. On the one hand, Alim et al. assert that teachers are self-motivated, trained, and knowledgeable about their students' knowledge because they believe that the more information they have about their students, the more strategies they can theoretically develop to improve the student's performance. Teachers in the United States of America and the United Kingdom are viewed as critical because they believe their students' understanding is beneficial to their performance (Garcia-Hernandez et al., 2021; Laletina et al., 2022; TOMAK, 2021). To develop knowledge about students, it is the responsibility of teachers to recognize their influencing and critical role in strategy development and work following that critical role to improve students' performance and develop new methods of critical learning and knowledge transmission to students. However, according to a study conducted by Nazari and Alizadeh Oghyanous (2022), teachers who fail to comprehend their students' crucial circumstances are ineffective since their performance falls short of their students' mental capabilities.

Additionally, teacher knowledge is crucial for pedagogical content knowledge, as it is a component. Thus, teachers who examine the concept of pedagogical content knowledge to develop techniques for delivering vital information to students via new modes of communication are assisting students in achieving a successful future. Notably, the teacher's responsibility is not restricted to the student's performance; rather, the teacher's

pedagogical subject knowledge enables teachers to create techniques over time and make key decisions while living in a class of diverse pupils. Simultaneously, Hasanah et al. (2022) state that teachers who seek to improve students' performance treat pupils according to their environment and culture, as they believe human nature varies from person to person. Diverse tactics should be implemented to maximise the class's and students' collective benefit. As a result, the developed hypotheses are as follows:

H1. *There is a relationship between teachers' knowledge and pedagogical content knowledge.*

H2. *There is a relationship between a teacher's knowledge and behaviour.*

### 2.2 Role of Students' Knowledge in Teacher's Behavior

It is crucial to comprehend teachers' conduct while they contact the educational institute, as teachers play a critical role in the educational institute for the pupils. However, this behaviour is not static; it is dynamic and heavily influenced by pupils' knowledge. According to Cilliers et al. (2022), instructors who effectively devise ways to improve student performance understand the critical nature of their position and the importance of developing a positive attitude toward student performance. Additionally, according to Werner et al. (2021), teachers do not receive positive feedback from students and realise that students are unwilling to follow the established standard and strategy for transmitting knowledge, these teachers develop a negative attitude toward students. In this regard, positive and negative teacher attitudes have long-term effects on children. If teachers have a favourable attitude toward their students, they will work diligently and be prepared to provide vital information to them in an intelligible manner. Second, if teachers have a good attitude toward their pupils and think that their efforts will not be in vain but will be directed toward meeting the students' needs, they will adjust their techniques to accommodate their mental capacities. However, C.-a. Qiu et al. (2022) indicate that when teachers perceive their pupils are unwilling to cooperate and are not guaranteed their desired outcome, the teachers create a negative attitude, which has bad implications for the students. In this regard, the teacher should devise techniques and adhere to a straightforward method of instruction devoid of any proper relationship development between the pupils and the teacher. Notably, according to (Liu et al., 2022), teachers' behaviour is not deemed insignificant; rather, it is critical for pupils' educational organisation and long-term interests. In America and Canada, instructors are devising tactics and moulding their attitudes in response to their students' conduct, believing that if their attitudes match their students' attitudes, the learning process will be productive and beneficial. Without a doubt, this perception of teachers has a significant impact on how strategies are implemented in the organisational context, and successful organisations work on these parameters to not only develop strategies but also to implement all of the strategic ways to accomplish tasks appropriately (Josaiman et al., 2021; Sudjimat & Permadi, 2021; M.-H. Wu & Opstad, 2022). Therefore, the developed hypotheses are;

H3. *There is a relationship between students' knowledge and teachers' behaviour.*

### 2.3 Role of Curriculum Knowledge in Teacher's Behavior and Pedagogical Content Knowledge

It is a fact that teachers who are well knowledgeable on the study's curriculum are more effective at transmitting vital information to students. However, this crucial knowledge about the curriculum is not readily accessible to the average teacher since teachers are frequently uninterested in understanding the framework of a curriculum and want to teach in their unique way. According to Fu et al. (2022); X. Qiu and Fang (2022), teachers who work critically on the construction of curriculum for students feel that the designed curriculum will effectively transmit information to pupils are developing. Additionally, Peng et al. (2022) indicate that teachers must comprehend the curriculum because they are accountable for transmitting pedagogical subject knowledge to students. Interestingly, the teachers who establish ways to transmit correct and succinct information to their pupils have a firm grasp of the curriculum and are working diligently to raise their students' standards.

On the one hand, some rational teachers are developing tactics and a better knowledge of the subject to boost students' performance. On the other side, some instructors are not interested in learning about the curriculum or devising tactics that align with it; rather, they are solely focused on their professional lives and obtaining incentives and compensation. As a result, these teachers are jeopardising kids' futures in their studies by failing to recognise the important success factor for students and developing curriculum activities according to their mental level to provide an acceptable answer. Similarly, Xia et al. (2022) emphasise that their curriculum

knowledge influences teachers' behaviour. It is considered that teachers who have a working knowledge of the curriculum and believe the curriculum is appropriate for their capacity and style of teaching are providing accurate information to their pupils through the development of pedagogical content knowledge methodologies.

On the other hand, teachers who believe that the curriculum does not adhere to their set standards and is not performing at the required level do not engage in meaningful development techniques but instead strive to enhance students' performance through their negative attitude. Importantly, this negative attitude is not in the students' favour because they are in the stage of life where they are expected to develop their capability without forgetting about a successful future. However, if they encounter a teacher who has a negative attitude toward them due to their lack of interaction with the curriculum, these students will face difficulties in life. In Japan, teachers are strongly motivated to build a curriculum and work on it over time to instil a positive attitude in students and develop the framework and techniques to be executed to get better results (Butt et al., 2021; M.-H. Wu & Opstad, 2022). Similarly, in Indonesia, instructors are empowered to build curricula and shape them to meet the needs of their students (Cyril, 2021; Hartani et al., 2021; Q. Wu). Notably, the curriculum developed by teachers or that is useful to teachers assists instructors in improving their performance and achieving better results. Thus, the assumptions are as follows:

H4. There is a relationship between curriculum knowledge and pedagogical content knowledge.

H5. *There is a relationship between curriculum knowledge and teachers' behaviour.*

### 2.4 Role of Teacher's Behavior in Pedagogical Content Knowledge

Indeed, teachers' acquisition of pedagogical content knowledge is crucial for communicating study-related information to pupils. Additionally, it is regarded as a critical component of the teaching process. However, because the teacher's behaviour is not dynamic, this pedagogical content knowledge is altered with time. Additionally, Salis et al. (2022) assert that teachers with positive attitudes develop ways to modify their positive attitudes and expand their pedagogical material knowledge according to their students' comprehension. On the other hand, teachers in China are instructed by institution management to establish a pedagogical content knowledge strategy that includes good behaviour toward students, as pupils are directly dependent on the teacher's attitude (Abubakari, 2021; Al-Ameedee & Abd Alzahrh, 2021; Fu et al., 2022).

Additionally, negative teachers create negative pedagogical content knowledge since they are unwilling to communicate study material and related information to pupils intelligibly. According to (Khoo, 2022), teachers in Vietnam are not heavily influenced by their institutions in developing a positive attitude toward teaching and their performance in the classroom. Indeed, like Huang et al. (2022) demonstrate, successful strategic development of pedagogical content knowledge enables teachers to design course work material activities and other extra-curricular activities in such a way that students gain a deeper understanding of the course material for improved mental drilling. Similarly, the teacher's obligations do not end with efficiently educating the students; they include assisting pupils by forming good cognitive associations and adopting a positive attitude toward increasing their performance. Additionally, Hu et al. (2022) indicate that teachers' responsibilities are not limited to their significant instructional actions but also to comprehending students' essential situations through interaction and developing solutions to improve students' performance. Notably, in developed nations, workshops and sessions are held to instil a good attitude in teachers toward actively participating in classroom activities and assisting students in achieving their goals through the use of study materials. Figure 2 illustrates the theoretical framework. As a result, the developed hypotheses are as follows:

H6. *There is a relationship between a teacher's behaviour and pedagogical content knowledge.*

H7. *Teacher behaviour mediates the relationship between teacher's knowledge and pedagogical content knowledge.*

H8. *Teacher behaviour mediates the relationship between students' knowledge and pedagogical content knowledge.*

H9. *Teacher behaviour mediates the relationship between curriculum knowledge and pedagogical content knowledge.*

H10. *Knowledge of education goals moderates the relationship between teachers' knowledge and pedagogical content knowledge.*

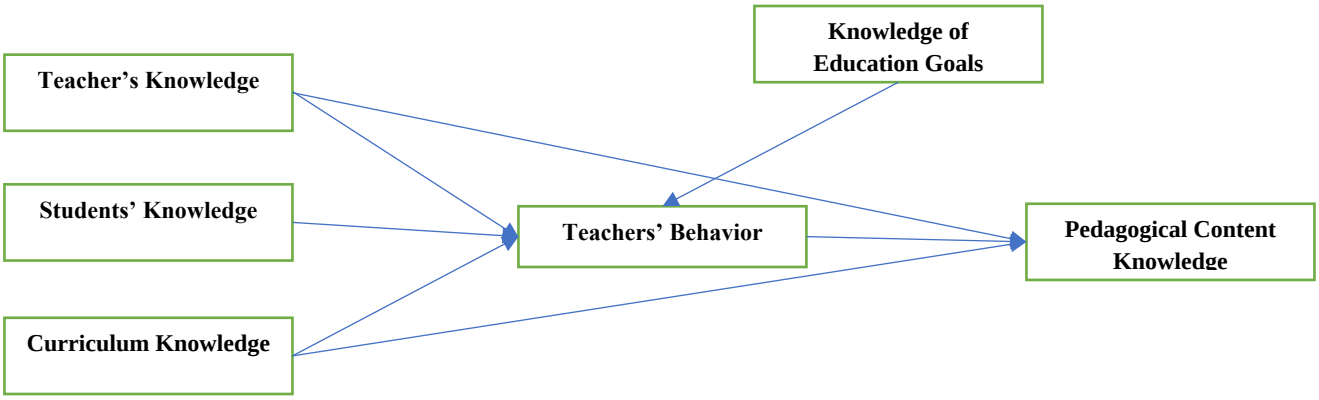


**Figure 2.** *Theoretical Framework*

## 3. Methodology

### 3.1 Prepare Questionnaire

A questionnaire was created on a five-point Likert scale to elicit responses from respondents who had independent experience with the questionnaire for this study. The questionnaire was divided into two independent sections in this regard. The first component required respondents to provide demographic information, including their age and professional experience. On the other hand, the second segment included the scale items for each variable to elicit responses to the questionnaire. These scale items were carefully selected from prior research to achieve the study's purpose. To begin, the scale items used to determine the response of the teacher's variable were derived from Sharp et al. (2011). These scale items assessed how teachers' knowledge influenced their behaviour. Second, the scale items assessing students' knowledge were derived from Kereluik et al. (2013). The goal of these scale items was to ascertain the extent to which teachers' knowledge of their pupils affects their performance. Thirdly, the scale items assessing curriculum knowledge were derived from (Niemelä & Tirri, 2018).

The goal of these scale items was to ascertain how instructors' understanding of the curriculum affects their conduct and instructional tactics. Fourthly, the scale items used to assess the teacher's behaviour were derived from Korthagen (2010). The goal of these scale items was to ascertain the extent to which the teacher's behaviour is appropriate for children and how it changes over time. Fifthly, the scale items assessing knowledge of educational goals were adapted from a study conducted by Jan Bent et al. (2014). Finally, the Loughran et al. (2012) study provided the scale items for pedagogical subject knowledge. Notably, these scale items were carefully chosen for the questionnaire to elicit responses from the 740 respondents with a response rate of 40%.

### 3.2 Data Collection Process

A questionnaire was issued to the target audience prior to the research's introduction to collect data for this study to elicit an impersonal response. First, they were informed about the study's introduction and its final purpose. Second, with the respondents' approval, the questionnaire was delivered. Thirdly, respondents were assured that their information would not be shared with third parties or used for marketing purposes. All of the respondents' questions were addressed during their contact with the questionnaire. Finally, once the response was received, the questionnaire was re-collected to analyse the data for the conclusion.

## 4. Findings

### 4.1 Convergent Validity

Convergent validity was assessed in this study section using the factor loadings, composite reliability, and average variance extraction shown in Figure 3. Smart PLS 3 software was employed in this case, and PLS algorithm calculations were recognised. The factor loadings for all scale items were more than 0.60, as Wong (2013) recommends for contemporary studies. Similarly, the composite reliability coefficient for each variable was greater than 0.70, which Ringle et al. (2015) recommend for these investigations. Simultaneously, the AVE value for each variable exceeded 0.50. Based on the calculations and values, it was established that the scale items are valid and reliable (see Table 1).

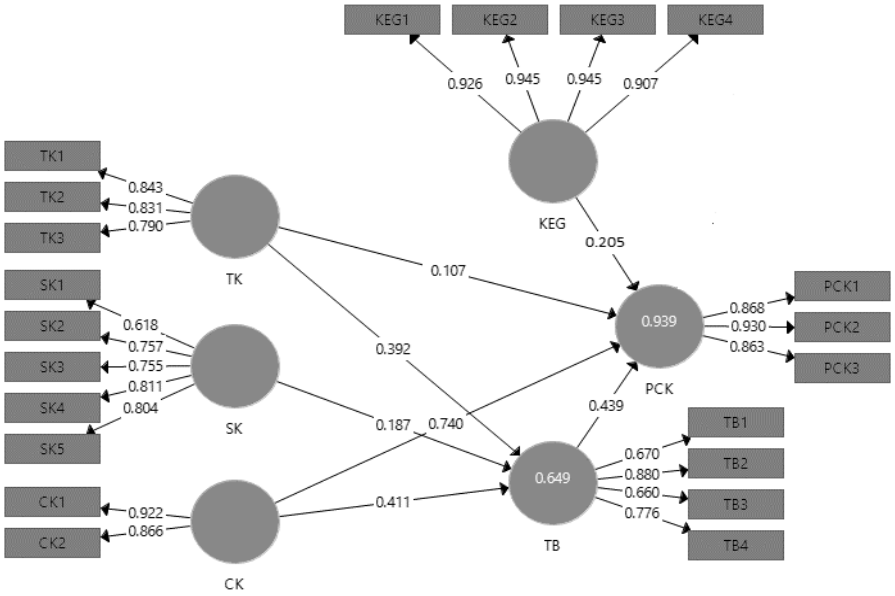


**Figure 3.** *Measurement Model*

**Table 1.** *Factor Loadings, Alpha, CR and AVE*

| Variable | Items | Loadings | Alpha | CR | AVE |
|---|---|---|---|---|---|
| Curriculum Knowledge | CK1 | 0.922 | 0.754 | 0.889 | 0.800 |
| | CK2 | 0.866 | | | |
| Knowledge of Education Goals | KEG1 | 0.926 | 0.948 | 0.963 | 0.866 |
| | KEG2 | 0.945 | | | |
| | KEG3 | 0.945 | | | |
| | KEG4 | 0.907 | | | |
| Pedagogical Content Knowledge | PCK1 | 0.868 | 0.865 | 0.918 | 0.788 |
| | PCK2 | 0.930 | | | |
| | PCK3 | 0.863 | | | |
| Students' Knowledge | SK1 | 0.618 | 0.808 | 0.866 | 0.566 |
| | SK2 | 0.757 | | | |
| | SK3 | 0.755 | | | |
| | SK4 | 0.811 | | | |
| | SK5 | 0.804 | | | |
| Teacher's Behavior | TB1 | 0.670 | 0.745 | 0.837 | 0.565 |
| | TB2 | 0.880 | | | |
| | TB3 | 0.660 | | | |
| | TB4 | 0.776 | | | |
| Teacher's Knowledge | TK1 | 0.843 | 0.759 | 0.862 | 0.675 |
| | TK2 | 0.831 | | | |
| | TK3 | 0.790 | | | |

### 4.2 Discriminant Validity

This study section contains the discriminant validity results, which were determined using the PLS Algorithm calculator. However, the modern and most recommended method HTMT was utilised to determine the variables' discriminant validity. Thus, all variables' values were less than 0.90, as Wong (2013) recommends for contemporary studies. Table 2 indicate that the variables utilised in the theoretical framework have a high degree of discriminant validity.

**Table 2.** *Discriminant Validity*

| | CK | KEG | PCK | SK | TB | TK |
|---|---|---|---|---|---|---|
| CK | | | | | | |
| KEG | 0.378 | | | | | |
| PCK | 0.78 | 0.358 | | | | |
| SK | 0.552 | 0.760 | 0.549 | | | |
| TB | 0.792 | 0.863 | 0.869 | 0.845 | | |
| TK | 0.497 | 0.745 | 0.474 | 0.857 | 0.748 | |

### 4.3 The PLS-SMEs Results

In this study section, the direct effects were analysed, available in Table 3. H1 was tested to check its significance, and according to the results, TK has a significant effect on PCK (β= 0.107, t= 4.714, p= 0.000), and H1 is supported. H2 was tested to check its significance, and according to the results, TK has a significant effect on TB (β= 0.392, t= 6.679, p= 0.000), and H2 is supported. H3 was tested to check its significance, and according to the results, SK has a significant effect on TB (β= 0.187, t= 3.476, p= 0.001), and H3 is supported. H4 was tested to check its significance, and according to the results, CK has a significant effect on PCK (β= 0.740, t= 32.122, p= 0.000), and H4 is supported. H5 was tested to check its significance, and according to the results, CK has a significant effect on TB (β= 0.411, t= 9.089, p= 0.000), and H5 is supported. H6 was tested to check its significance, and according to the results, TB has a significant effect on PCK (β= 0.449, t= 13.817, p= 0.000), and H6 is supported in figure 4.

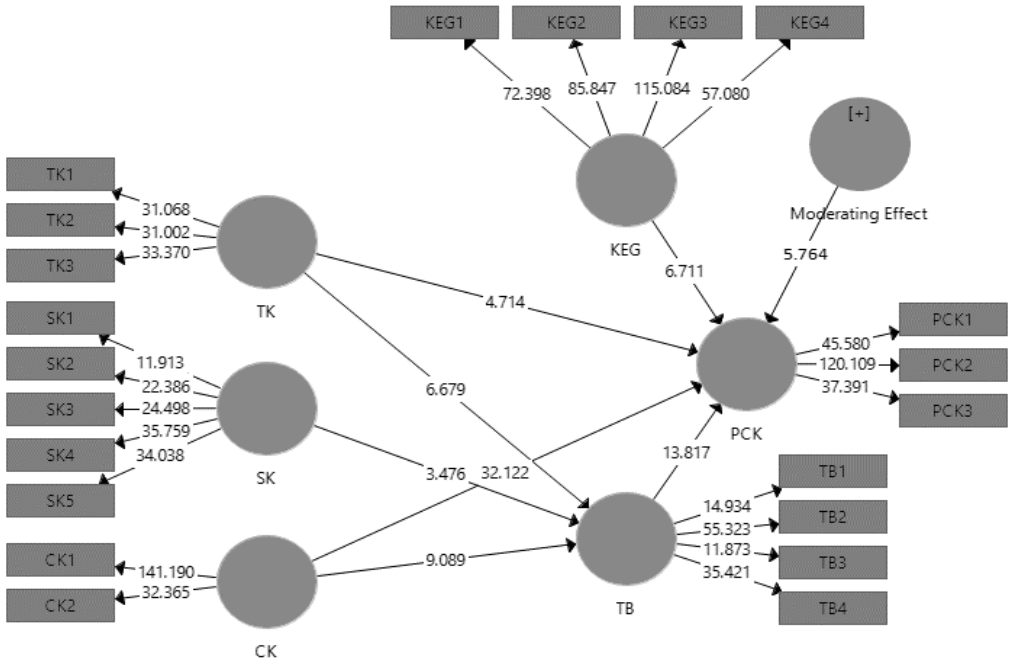


**Figure 4.** *Structural Model*

**Table 3.** *Direct Effects*

| Hypotheses | B | (STDEV) | T Values | P Values | Decision |
|---|---|---|---|---|---|
| H1. TK -> PCK | 0.107 | 0.023 | 4.714 | 0.000 | Supported |
| H2. TK -> TB | 0.392 | 0.059 | 6.679 | 0.000 | Supported |
| H3. SK -> TB | 0.187 | 0.054 | 3.476 | 0.001 | Supported |
| H4. CK -> PCK | 0.740 | 0.023 | 32.122 | 0.000 | Supported |
| H5. CK -> TB | 0.411 | 0.045 | 9.089 | 0.000 | Supported |
| H6. TB -> PCK | 0.439 | 0.032 | 13.817 | 0.000 | Supported |

### 4.4 Mediation Effects

In this section of the study, Bootstrapping calculations of Smart PLS 3 were used to check specific indirect effects. According to the results, TB mediates the relationship between TK and PCK (β=0.172, t= 5.999, p=0.000); hence H7 is supported. Also, according to the results, TB mediates the relationship between SK and PCK (β=0.082, t=3.246, p=0.001); therefore, H8 is supported. Moreover, H9 was tested, and according to the results, TB mediates the relationship between CK and PCK (β=0.180, t=8.445, p=0.000); therefore, H9 is supported (see Table 4).

**Table 4.** *Mediating Effects*

| Mediation Effects | B | (STDEV) | T Values | P Values | Decision |
|---|---|---|---|---|---|
| H7. TK -> TB -> PCK | 0.172 | 0.029 | 5.999 | 0.000 | Supported |
| H8. SK -> TB -> PCK | 0.082 | 0.025 | 3.246 | 0.001 | Supported |
| H9. CK -> TB -> PCK | 0.180 | 0.021 | 8.445 | 0.000 | Supported |

### 4.5 Moderating Effect

In this section of the study, the moderating analysis was identified. According to the results, KEG moderates the relationship between TK and PCK (β= 0.098, t= 5.764, p= 0.000); hence H10 is supported (see Table 5). Furthermore, according to Figure 5, KEG strengthens the positive relationship between TK and PCK.

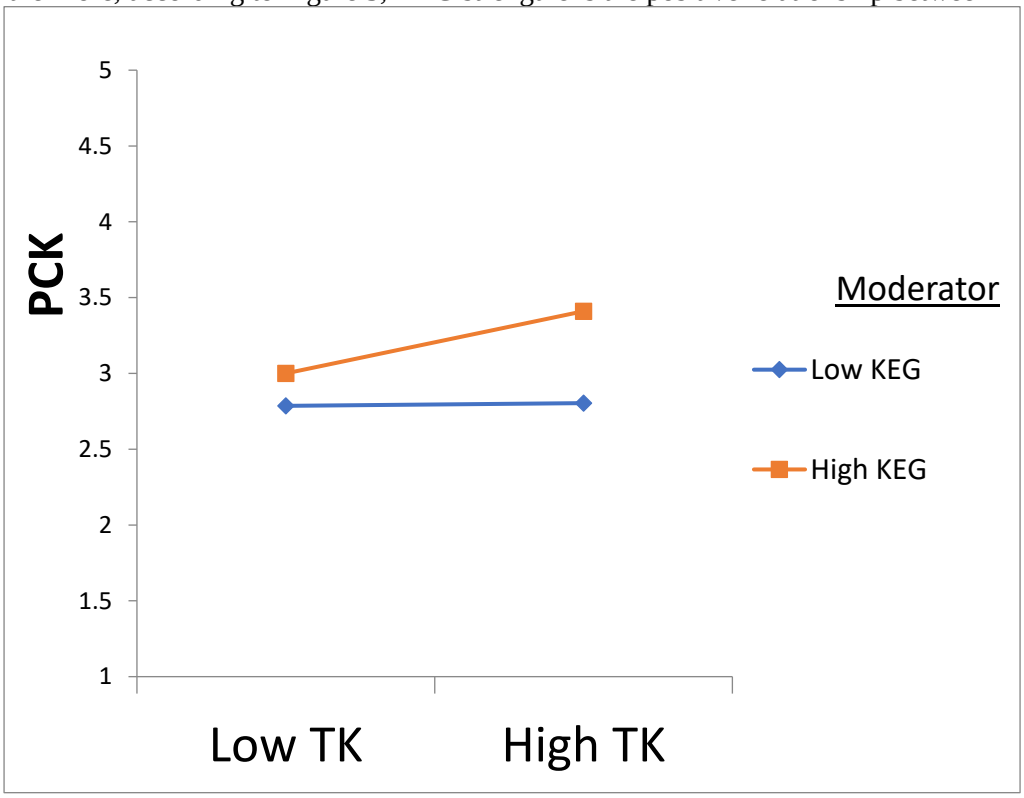


**Figure 5.** *Moderating Analysis*

**Table 5.** *Moderating Effects*

| Moderating Effect | B | (STDEV) | T Values | P Values | Decision |
|---|---|---|---|---|---|
| H10. Moderating Effect -> PCK | 0.098 | 0.017 | 5.764 | 0.000 | Supported |

## 5. Discussion and Conclusions

There is a considerable association between teachers' knowledge and pedagogical content knowledge, as determined by the results of H1. This study showed that if a teacher's knowledge base grows over time, the teacher's pedagogical content knowledge approach will become more efficient and successful for the pupils.

According to Korthagen (2010), it is crucial to consider that teachers have information relevant to the course's context because that knowledge has been critical and understandable throughout time. Teachers who create and implement techniques to improve students' performance technically and psychologically assist students in achieving the best results possible. According to the findings of H2, a considerable association exists between instructors' knowledge and their behaviour. The study indicates that this association is crucial since it is observed that when instructors' knowledge is effective and aligned with the curriculum, a more positive attitude toward the teacher's teaching material is generated. In this regard, some teachers are attempting to improve their positive attitude; they must also concentrate on their understanding of the course's content and the context to devise tactics appropriate to the students' standard level. Importantly, the professors who assist students in improving their performance have a favourable attitude toward their students and are willing to assist them. On the other hand, if the teacher negatively affects the pupils, the students' performance would suffer.

The results of H3 indicate a considerable association between teachers' understanding of pupils and their behaviour. Indeed, it is critical to recognise that teachers' behaviour is strongly related to their knowledge and attitude toward students. If students are cooperative and follow the requirements of the teaching pattern, the teacher develops a favourable attitude toward such pupils (Macambira et al., 2022). On the other hand, pupils who do not work according to the teacher's standards will find that the teacher will not assist them in achieving their objectives due to the teacher's negative attitude toward them. As a result, it is critical to consider that students' success might influence instructor conduct in class and other activities.

There is a considerable association between curriculum knowledge and pedagogical content knowledge, as determined by the findings of H4. This study emphasises the importance of instructors' curriculum knowledge since it enables teachers to build pedagogical strategies for transmitting vital information to pupils. It is critical to note that if the instructor is allowed to engage in curriculum development, the technique will be effective in selecting acceptable selections for the student's study material. On the other hand, if a teacher is not given the opportunity and fails miserably to communicate information to students, one of the ultimate reasons would be the teacher's lack of involvement in curriculum creation. Therefore, it is critical to understand that curriculum development is appropriate for teachers if they are provided with opportunities to work most effectively to improve students (Nguyen et al., 2022). The results of H5 indicate a significant relationship between teacher knowledge of the curriculum and teacher behaviour. This study reveals the critical significance of curriculum knowledge in instructors' behaviour, both positively and negatively. Notably, teachers who are actively involved in obtaining information about the students' curriculum and other educational activities are appropriately working to increase performance and maintain a positive attitude about their performance.

On the other hand, teachers who are not provided with the opportunity to be introduced to curriculum knowledge are dissatisfied with the management's decision, and their attitude is always negative. Notably, it is vital to establish strong influencing relationships and consider providing teachers with more subject knowledge to positively influence their behaviour (Mohd Yusoff et al., 2022). According to the findings of H6, a significant association exists between teachers' behaviour and their pedagogical topic understanding. This study demonstrates the critical nature of educational knowledge when it comes to enhancing the performance of teachers and students in a larger context.

According to the findings of H7, teacher behaviour plays a mediating role in the relationship between instructors' knowledge and pedagogical subject knowledge. The study finds that the objective of pedagogical subject knowledge is to create a method for students to improve their performance through information transmission. However, pupils are provided with this material and study skills depending on their teachers' expertise in the course. In this sense, teacher conduct mediates the relationship since the more precise knowledge a teacher possesses, the more good teaching behaviour he will produce. Notably, it is a truth that the teacher's behaviour is directly related to the pupils' learning. According to the findings of H8, teacher behaviour has a mediating effect in the relationship between teachers' knowledge of students and pedagogical topic understanding. This study illustrates that if a teacher has the necessary information and knowledge about his students, his conduct will adapt accordingly. In this sense, if the teacher's behaviour is modified to meet the student's needs, ultimate progress in pedagogical topic understanding is achievable. Additionally, this study demonstrates that if a teacher demonstrates positive behaviour toward comprehending a student's mental capacity and performance, it is beneficial for him to acquire pedagogical topic knowledge for the students' suitable development.

According to the findings of H9, teacher behaviour has a moderating effect on the relationship between curriculum knowledge and pedagogical contact knowledge. The study demonstrates that if a teacher strives to generate pedagogical content to inform students about the study material, the instructor's information about the curriculum will influence students' behaviour. The more information a teacher has about the curriculum, the more optimistic he will become about his performance. Notably, this interaction between students and teachers can be favourable or negative depending on the teacher's behaviour. According to the findings of H10, knowledge of educational goals has a moderating effect on the link between teacher knowledge and teacher pedagogical content knowledge. The study reveals that educational course information increases the relationship between pedagogical content knowledge and the teacher's knowledge of their course material in a beneficial way.

## 6. Implications

### 6.1 Theoretical Implications

This study is theoretical because no previous study has discussed the role of course content knowledge, teacher knowledge of students, and teacher knowledge of curriculum to comprehend the influence of these factors in a structure on teacher behaviour and pedagogical content knowledge. This study contributes to the literature by providing a theoretical foundation for the link between these factors, which was not covered in an earlier study. This study highlights the crucial importance of teachers' course content knowledge in building pedagogical content knowledge for teachers to increase students' performance. Simultaneously, this study highlights the crucial significance of curricular knowledge for instructors, as the more knowledge a teacher possesses, the more effective ways for increasing students' performance he will develop, just as teachers in Hong Kong do. Notably, this study demonstrates the crucial significance of teacher behaviour in acquiring pedagogical topic knowledge since positive teacher behaviour leads students to contribute significantly. On the other hand, it is critical to remember that if the teacher lacks a positive attitude and behaviour, they will be unable to work successfully to design strategies for boosting students' performance and developing pedagogical topic understanding. Additionally, the study demonstrates that instructors' knowledge of educational goals has a beneficial moderating function in linking teachers' knowledge and pedagogical subject knowledge.

### 6.2 Practical Implications

Additionally, this study has practical implications for increasing English teachers' effectiveness in creating pedagogical contact knowledge to raise students' standards. To begin, this study suggests that teachers should place a premium on their knowledge of the course and devote time to comprehending the course's context to better understand and impart that understanding to their students. Second, this study demonstrates that if teachers are knowledgeable and educated about their students' mental capabilities and potential, they may devise strategies and work effectively to increase their students' performance. Thirdly, this study demonstrates the crucial importance of curriculum knowledge for instructors since the most knowledgeable teachers provide information and study material to students more effectively through the usage of the curriculum. The value of curriculum knowledge cannot be overstated, as it is a critical component of a successful teaching strategy. Fourthly, this study demonstrates the critical role of teachers' behaviour in their students' achievement on course tasks. It is critical to recognise that if the instructor is provided with sufficient knowledge about the students and the course topic, he will build a good attitude toward working with the pupils. Similarly, if the instructor develops a positive attitude about working for the student, the student will receive the best from the teacher. Finally, this study emphasises the need for English teachers to focus on activities that contribute to their improved teaching experience to generate ideas for improving their pedagogical subject knowledge.

## 7. Limitations and Future Directions

This study is founded on a theoretical framework that considers instructors' knowledge, students' knowledge, and curricular knowledge to comprehend their roles in the current state of pedagogical content knowledge for Chinese English teachers. However, future research should consider work satisfaction, student behaviour, and educational policy to understand better the structural model of pedagogical content knowledge in the context of English teachers in China. Additionally, these recommendations have been thoroughly reviewed and will aid future studies in discovering novel methods for it.

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