

Developing Pedagogical Content Knowledge for Pre-service Teachers Learning to Teach English as a Foreign Language

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ABSTRACT. Pedagogical Content Knowledge (PCK) is the necessary professional knowledge for teachers and an important feature to distinguish teachers from scholars. The development of pre-service teachers' PCK affects the quality of education. What are the aspects of the PCK of English pre-service teachers improved through educational practice? What are the influencing factors? To improve pre-service English teachers better understand the importance of educational practice, promote the development of professional knowledge and teaching competence, a questionnaire survey was used to study the development of PCK of pre-service English teachers, analyzed the development and the changes of pre-service teachers' PCK in the educational practice. Pre-service English teachers have developed in the aspects of knowledge of pedagogical, knowledge of students, knowledge of subject matter, knowledge of environmental contexts. And the influencing factors mainly included communication with peers, experienced teachers; teaching experience and reflection; and personal observation. It indicates that the normal universities should carry out more practical courses, and demonstrates that pre-service teachers should pay more attention to educational practice, accumulate teaching experience, improve teaching quality and teaching competence, and strive to become an excellent and qualified teacher.

KEYWORDS: pre-service teachers; pedagogical content knowledge (PCK); learning to teach English

1. Introduction

Education is the key to the nation and the party. To realize the modernization of education, the nation and the government have continuously strengthened the construction of the teaching staff, and put forward higher requirements for the teachers. The Ministry of Education in China respectively promulgated the "Opinions on the Implementation of Excellent Teacher Training Program 2.0" and "China Education Modernization 2035" in 2018 and 2019, which proposes to train high-quality professional and innovative primary and secondary school teachers in the new era.

Teacher knowledge is not only an important part of teachers' professional quality but also a guarantee for the improvement of educational quality. Pedagogical Content Knowledge (PCK) is the most important core component of teachers' knowledge, and it is the fundamental characteristic that distinguishes teachers from subject experts and educational researchers. PCK has both conceptual and practical characteristics. It affects both the development of teachers' teaching behavior and the development of teachers' teaching beliefs. It plays a bridge role in the interactive development between teachers' teaching beliefs and teaching behavior [1]. In 2012, the "Professional Standards for Middle School English Teachers (Trial)" promulgated by the Ministry of Education included PCK into the assessment scope of teachers' professional knowledge.

Educational practice is not only the main source of the development of pre-service teachers' PCK but also an effective way to construct the pre-service teachers' PCK [2][3]. However, through literature analysis, it has been found that many scholars have begun to pay attention to the effect of educational practice on pre-service teachers' PCK, but the research participants mainly involve the science teachers. The research on the development of pre-service English teachers' PCK during the process of learning to teach is still relatively weak. Therefore, to improve the pre-service English teachers better understand the importance of educational practice, promote the development of professional knowledge and teaching competence, so that they can improve their professional identity and quickly integrate into the teaching. With this in mind, the present study adopts the literature analysis method and questionnaire survey method to study the development of PCK for pre-service English teachers and analyze the development and changes of the PCK of English teachers during the internships.

2. Literature Review

2.1 PCK

In the 1980s, American scholar Shulman first proposed the concept of pedagogical content knowledge to make up for the "missing paradigm" in teacher knowledge research. Shulman defined PCK as "that special amalgam of content and pedagogy that is uniquely the province of teachers, their own special form of professional understanding" [4]. Since Shulman proposed PCK, scholars have researched on the theoretical basis of PCK, the development strategy of PCK, the relationship between PCK and teacher education. With the deepening of research, scholars have continuously enriched the connotation of PCK from the static description to the dynamic construction. Although scholars do not reach an agreement with the definition of PCK, its core content has not changed. That is, PCK is a process for teachers to realize knowledge transformation based on students' standpoint [5]. That is to say, teachers transform the content knowledge of the specific subject into knowledge for teaching. At the same time, Some scholars believe that PCK may be a mixture of knowledge, ability and values [6].

2.2 Related studies on pre-service teachers' PCK

In recent years, researchers have found that the quality of pre-service teacher PCK affects teacher professional development. Therefore, the study of PCK for pre-service teachers has become a major issue in teacher education research. Through literature analysis, the research themes on the pre-service teachers' PCK mainly include the structure, the influencing factors and the construction of the pre-service teachers' PCK.

Existing research focuses on examining the structure of pre-service teachers' PCK from the perspective of the discipline. The present study adopts the structure of PCK proposed by Cochran et al. That is knowledge of pedagogy, knowledge of students, knowledge of subject matter, knowledge of environmental contexts [7]. In terms of influencing factors, they can be divided into internal factors and external factors. The internal factors mainly include pre-service teachers' classroom observation and reflection ability, attitude, learning methods, personal characteristics, personal teaching beliefs and traits. External factors mainly include: the learning experience in middle school and the instructor's views and teaching behaviors during the internship, the learning of education theory, extracurricular tutoring and other experiences, and educational environment. Exploring the ways to construct pre-service teachers' PCK is the key to promote teacher professional development. The ways can be summarized as the following: theoretical learning; observe learning; communicate with mentor teachers, students and peers; teaching practice and reflection [8].

Among the influencing factors, existing studies have shown that educational internship can promote the development of pre-service teachers' PCK, but there is an unbalanced development among various elements [9][10][11]. At present, the research of pre-service teachers' PCK has achieved certain results. These research results have played a certain role in our understanding of pre-service teachers' PCK and promoting its development. However, the research on the development of pre-service English teachers in educational practice is relatively weak. Therefore, this study aims to study the development of PCK for pre-service English teachers.

3. Research Design

3.1 Research Questions

- a. What will be the development of PCK of English through educational practice? What is the specific performance?
- b. What are the main factors for the development of PCK of English interns in their educational practice?

3.2 Research Participants and Research Methods

Eight pre-service English teachers in a normal university were selected as the research participants. They participated in the research before and after the internships. In this study, a total of two questionnaires were distributed to investigate the development of pre-service teachers' PCK before and after the internships. Each questionnaire is divided into three parts, the first part is basic information, including gender, age, internship, etc.; the second part is a question designed according to four aspects; the third part is multiple choice questions, mainly used to investigate the main factors that affect the development of PCK.

4. Results and Discussion

4.1 Quantitative Results

During the process of educational practice, pre-service English teachers' knowledge of pedagogy, knowledge of students, knowledge of subject matter, knowledge of environmental contexts have been developed.

Existing research shows that pre-service teachers have certain PCK before internship. Pre-service teachers have learned systematic educational theory in the teacher education courses that mainly include pedagogy, psychology, English courses and teaching theory, analysis of curriculum standards, etc. At this stage, the pedagogical knowledge of pre-service teachers has strong theoretical characteristics. Pre-service teachers' ability to perceive the theory in specific teaching practice is relatively weak. Besides, the pedagogical knowledge of pre-service teachers is in a state of separation from other parts of the knowledge. The results of this study show that most pre-service teachers can gradually put educational theory into practice during the internships. Pre-service teachers can design instruction according to the requirements of curriculum standards and specific subject content. In addition, pre-service teachers can conduct classroom teaching according to the steps of instructional design. They can adjust instructional strategies reasonably according to the needs of students and different types of courses. However, some pre-service teachers face the challenge that education theory cannot be applied to specific teaching practices. This may be related to their own learning experience or school environment.

Studies have shown that pre-service teachers still lack the knowledge of student which mainly include that they do not understand students' learning difficulties and prior knowledge. Before internships, the results of this study also show that pre-service teachers relatively lack the knowledge of students. Pre-service teachers' knowledge of students mainly comes from the school learning experience. During the internship, pre-service teachers realized that they need to understand the students in order to have a better teaching effect. Pre-service teachers can gradually understand the students' overall and personality characteristics, and design teaching activities from the perspective of students. The teaching content is more in line with students' psychological needs and actual needs. This further shows that pre-service teachers can get acquainted with students as quickly as possible with the help of their own learning experience and mentor teachers.

Pre-service teachers' development of situational knowledge focuses on classroom teaching environment, campus culture and teaching management. Count knowledge is the basis for the development of PCK. The core connotation of PCK is that the teacher transforms subject knowledge into knowledge that is easy for students to understand. However, the development of pre-service teachers' count knowledge is relatively slow. The main reason is that pre-service teachers are busy with various internship tasks during their internships, and it is difficult to take account of this development [11]. Therefore, pre-service teachers in the pre-service education stage should strengthen the learning of professional knowledge and constantly improve their professional competence.

To summarize, the study found that the development of knowledge in the four dimensions of pre-service teachers' PCK during internship is unbalanced. Among them, the development of pedagogical knowledge is the fastest, followed by knowledge of students and knowledge of situation, and the development of count knowledge is the slowest.

4.2 Influencing Factors of Educational Practice on PCK Development of Pre-service Teachers

The influencing factors of educational practice on PCK development of pre-service teachers mainly include three aspects: communication with peers, experienced teachers; teaching experience and reflection; and personal observation. The results are corresponding with the previous research results which emphasize the role of teaching experience and reflection as a way to develop PCK [2][3][9]. Compared with experienced teachers, pre-service teachers still lack teaching experience. They only know the general process of teaching and limited knowledge of how to teach and help students understand learning.

5. Conclusion

Since Shulman put forward PCK, it has been widely concerned and studied. Educational practice not only improves teachers' teaching competence and accumulates certain teaching experience, but also strengthens the development of PCK, but the level of development is still at a low level. Firstly, PCK has a great development in the process of educational practice, which mainly includes knowledge of pedagogy, knowledge of students, knowledge of subject matter, and knowledge of environmental contexts. Secondly, the influencing factors mainly include three aspects: communication with peers, experienced teachers; teaching experience and reflection; and personal observation.

The results are helpful for pre-service teachers to change the role before educational practice, and these four factors can also help the students to improve their professional knowledge with purpose and direction in educational practice. Furthermore, the improvement of practical competence in education practice is conducive

to the development of education in the future. Limitations of the study are linked to the small number of research participants. Researchers can make further research on the influencing factors, such as what other activities can affect the development of PCK of pre-service teachers or how the communication with mentor teachers and classmates affects the development of PCK. These studies can provide pre-service teachers with a deeper, more comprehensive and more direct understanding of PCK in educational practice.

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