Research on the Cultivation of ETS' ETA in Private Colleges Based on TPACK Model under the Computer Aid

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Abstract. TPACK is the abbreviation of integrated technology subject teaching knowledge. With the popularity of the Internet, information teaching has become an important tool in college teaching, including English Teaching in private colleges. Therefore, English teachers (hereinafter referred to as ETS) in private colleges must constantly improve their English teaching ability (hereinafter referred to as ETA), which will adapt to the development of society. TPACK is a model to consider teachers' knowledge integration from the perspective of dynamic interaction among technology, teaching method and subject knowledge. TPACK model is a method to build teachers' knowledge system, which will help teachers to find out the deficiencies. Through TPACK model, ETS in private colleges can improve their ETA, which will improve the teaching quality of ETS. At the same time, teachers can improve their information level, which will be more suitable for English teaching. Firstly, this paper analyzes the concept of TPACK model. Then, this paper analyzes the current situation of TPACK ability of private colleges. Finally, this paper puts forward some suggestions, which can better improve ETS' ETA.

Keywords: TPACK Model, Private Colleges, English Teachers, English Teaching Ability

1. Introduction

With the popularity of the Internet, the Internet has been applied to all sectors of education, which requires teachers to constantly improve their information-based teaching level [1]. At the same time, the government continues to deepen the reform of English teaching mode in private colleges, which needs to build a perfect ETS' technical ability training system. Therefore, teachers in private colleges must have good information-based teaching quality, which is the need of ETS' professional development. TPACK is a method for the construction of teachers' knowledge system, which can better cultivate high-quality applied talents [2]. Through TPACK model, ETS can actively adapt to the English information teaching environment, which will have the ability to use modern educational technology. Through the reform of English teaching information technology, private colleges will realize the informatization of English teaching, which is to improve ETS' informatization ETA [3-6]. Therefore, TPACK is of great
practical significance to the cultivation of ETS' ability in private colleges, which can provide a way for the cultivation of teachers' ETA [7].

2. Definition of related concepts

2.1. Knowledge structure of TPACK

TPACK framework attaches great importance to the cross connection of core knowledge, which reflects the requirements of knowledge structure in the new era. Among them, subject content knowledge (CK), pedagogical knowledge (PK) and subject pedagogical knowledge (PCK) are the key contents of Shulman's theory [8]. With the development of technology, technical knowledge (TK) expands the knowledge system that teachers need to master, which requires teachers to grasp TPACK, the common intersection of the three core knowledge [9]. Therefore, according to the relevant literature, this paper analyzes seven knowledge definitions of TPACK framework, as shown in Table 1.

| Knowledge Type | Definition | Example |
|----------------|------------|---------|
| PK             | Knowledge about students' learning, teaching theory, teaching strategy, teaching evaluation, etc. | Discussion, lecture, experiment and other teaching methods; situational teaching strategies, heuristic teaching strategies; flipped classroom teaching mode, mixed teaching mode and so on. |
| CK             | Knowledge of subject content | Knowledge of English, mathematics, physics, Chinese, chemistry and other subjects. |
| TK             | Knowledge of information technology (including hardware and software) | Including the use of multimedia, network, electronic mobile devices; the production of multimedia, electronic courseware, video, etc. |
| PCK            | Appropriate teaching strategies to teach a subject content knowledge | In English teaching, situational teaching is used to simulate daily conversation. |
| TPK            | Knowledge about the use of appropriate information technology to support a teaching strategy or method | The use of multimedia courseware to promote students' understanding of textbooks, lectures, exercises, etc. |
| TCK            | Knowledge about using corresponding information technology to present the content of a subject | The use of online English electronic dictionaries such as Youdao, Google translation, Bing, etc. |
| TPAC           | The use of various information technology to carry out a subject content teaching knowledge | ETS use virtual reality technology (VR) to guide students to communicate in simulated situations. |

2.2. The relationship between TPACK
In 2005, Koehler and Mishra proposed TPACK model, which is based on Shulman’s concept of subject teaching knowledge (PCK). TPACK model is to bring technical knowledge (TK) into the knowledge system teachers should have. The subject knowledge of integrated technology includes three core elements: subject content knowledge (CK), pedagogical knowledge (PK) and technical knowledge (TK) [10]. At the same time, the intersection of elements forms three composite elements, namely, subject teaching knowledge (PCK), subject content knowledge of integrated technology (TCK) and teaching method knowledge of integrated technology (TPK) [11-12]. The intersection of the three is TPACK, as shown in Figure 1.

![Figure 1. TPACK framework](image)

## 3. Research on ETS' ETA based on TPACK

This paper conducted a questionnaire survey on students in a private colleges. A total of 500 questionnaires were distributed and 484 valid questionnaires were collected. The effective rate reached 96.8%.

### 3.1. Overall level analysis

The average value of the problem (m) is directly proportional to the teacher's ability. Therefore, the higher the m value is, the higher the teacher's ability is. The standard deviation (SD) represents the dispersion of the respondents' scores on this indicator. From the statistical results, the average value of each dimension of the seven factors is in the range of 3.5462 to 3.6595, which indicates that the TPACK level of ETS in private colleges is low. The results are shown in Table 2.

| Mean (M) | Standard deviation (SD) |
|----------|------------------------|
|          |                        |
$\begin{array}{ll}
\text{CK} & 3.8709 \\
\text{TK} & 3.7215 \\
\text{PK} & 36.829 \\
\text{PCK} & 3.6776 \\
\text{TCK} & 3.6574 \\
\text{TPK} & 3.5709 \\
\text{TPCK} & 3.5274 \\
\end{array}$

3.2. Information based ETA of College ETS in private colleges

This paper analyzes the information-based ETA of College ETS in private colleges, as shown in Table 3. At present, the overall score of College ETS in private colleges is 62.25, which is a low pass level. Most teachers are still in the primary stage of PPT assisted teaching, multimedia teaching and even traditional book teaching, which lacks the ability to integrate information technology with college English teaching.

| Item                  | Average value | Minimum value | Maximum | Standard deviation |
|-----------------------|---------------|---------------|---------|-------------------|
| Information teaching  | 62.25         | 42            | 100     | 10.458            |
| Information awareness | 18.24         | 16            | 25      | 1.436             |
| Information knowledge | 16.85         | 6             | 25      | 1.782             |
| Information skills    | 15.25         | 12            | 25      | 4.251             |
| Information ETA       | 11.91         | 8             | 25      | 2.583             |

4. The training of ETS' ETA based on TPACK

4.1. Cultivating teachers' intercultural ETA

Private colleges should carry out intercultural communication teaching training for teachers from the perspective of subject knowledge (CK). On the one hand, relevant departments should actively carry out cross-cultural teaching training courses for teachers. The purpose of training is to integrate the
knowledge needed for intercultural communication. For cross-cultural communication courses, private colleges can focus on the selection of teachers' reserved knowledge, which will promote the subject characteristics of knowledge. For teachers' lack of knowledge, training can timely fill the gaps, which will avoid teaching with self-experience and copying other similar subjects. In the early stage of training, private colleges can cultivate teachers' intercultural communication teaching behavior through situational interaction. By popularizing the knowledge of subject history, private colleges can help teachers understand the characteristics of subjects. By publicizing "cultural confidence", private colleges can inspire teachers to realize the importance of their own culture. On the other hand, ETS should accumulate themselves, which needs to accumulate deep cultural knowledge. Only from the deep level of value can we find the differences between Chinese and Western cultures. By drawing inferences from one instance, we can grasp the cultural connotation of communication in different communication situations, so as to avoid the rigid and fragmented "parallel" structure.

4.2. Cultivating new teaching methods

Private colleges should cultivate teachers' new teaching method from the perspective of teaching method (PK). ETS should actively use case method, contrast method, annotation method and other teaching methods. The traditional teaching method is teacher centered, which will be difficult to give students a lot of practical space. The new teaching method is student-centered, which pays more attention to the growth of students' ability and knowledge. By focusing on two-way communication between teachers and students, they can make progress in constant feedback and correction. By using the methods of annotation and case study, ETS can remind students to analyze specific problems, which can avoid applying Western culture to Chinese culture. The new teaching method also puts forward higher requirements for ETS. In teaching, what ETS should do is not only to provide knowledge, but also to guide and cultivate students' learning ability in this subject.

4.3. Introducing new technology into English Teaching

Private colleges should start from the perspective of new technology (TK), which can introduce new technology and new media. In the classroom, ETS should not stop at using ppt. In the case performance analysis, nearly 30% of the teachers said that they did not have enough time and feedback. However, flexible use of multimedia technology can effectively solve these problems. With the aid of teaching software, teachers can ask all students to form teams to upload their own case design performance videos, which can give every student the opportunity to practice. At the same time, private colleges should actively use all kinds of new technologies, such as cloud disk technology, which can establish class sharing cloud disk. Through the MOOC website, private colleges can supplement the teaching content. Through social learning software such as Xuetong and Chaoxing Eya, private colleges can encourage students to have cross-cultural communication with people from all over the country after class. Through the introduction of new technology, the ability of ETS in private colleges will be improved, which will improve their teaching quality.

5. Conclusion

TPACK provides a good theoretical basis for improving the ETA of ETS in private colleges, which can improve the teaching effect of teachers. Through TPACK, ETS can improve their knowledge structure...
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system, which will accurately use information technology to improve ETA. Through the improvement of three aspects of ability, we can improve our ETA.

Acknowledgments

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