On the Application of TPACK Theory in College English Writing Teaching

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Abstract: Nowadays the researches on TPACK theory in education are more and more abundant, English education researchers are paying more attention to how TPACK promotes students' scores in exams. By experimental investigation, this article aims to explore the impact of applying TPACK theory on students' writing achievements and the application of TPACK theory in college English writing teaching.

Keywords: TPACK; College English writing

1. Research Background and Purpose

With the progress of science and technology, modern educational technology has also been more and more involved in education learning and teaching. In this article, the author plans to explore the practical effect of TPACK theory on students' writing achievements and the application of TPACK theory in college English writing teaching.

2. Research Status at Home and Abroad

Punya Mishra and Matthew J. Koehler first mentioned TPACK in their article in 2005. TPACK is the necessary knowledge for teachers to use technology for effective teaching, and is the subject teaching method knowledge of integrating technology. The theory of technological pedagogical and content knowledge (TPACK) is actually the inheritance and innovation of the theory of pedagogical content knowledge (PCK). While paying attention to the importance of subject content knowledge (CK) and pedagogical knowledge (PK), Integrate technical knowledge (TK) into the structure of teachers' knowledge and skills, but do not focus on technology, but based on the internal relationship of the three, to achieve mutual penetration, mutual assistance and mutual influence among technology, content and methods.

The research on TPACK in foreign countries mainly includes five aspects: TPACK ontology research, TPACK training strategy research, TPACK measurement method research, TPACK framework teacher training research, TPACK framework information technology and curriculum integration research.The domestic research on TPACK is mainly carried out from three aspects: TPACK theoretical research, teacher TPACK ability training research, and TPACK teacher professional development research.

The research on English writing teaching in foreign countries is mainly carried out from four aspects: writing mode, writing strategy training, English writing teaching method and teaching design. The research on English writing teaching in China is mainly carried out from four aspects: English writing teaching itself, writing model theory, discourse science and pragmatics.

3. Theoretical Basis

Constructivism is a branch of cognitive psychology. An important concept of constructivism is schema, which refers to the way in which individuals perceive and think about the world. The formation and change of schema is the essence of cognitive development. Under the guidance of this theory, learners can make the learning process clearer and clearer. In college English writing teaching, teachers' application of TPACK theory and constructivist learning theory are closely related. According to the changes of specific situations in the teaching process in the classroom, teachers will effectively integrate the teaching of educational technology and English writing courses, and select the corresponding teaching media and teaching methods for teaching.

In addition, some applications of TPACK theory in the classroom need the cooperation of teachers and students. Conversation should be established between teachers and students. In this way, meaningful construction has taken place based on TPACK theory, which promotes teachers' teaching in English writing class. Students learn on the basis of their own schemata, thus improving the learning performance of English writing, Therefore, constructivism theory has clear guiding significance for the application of TPACK theory in college English writing teaching.

4. Research Design and Implementation

This study mainly uses the experimental research method. Based on the TPACK framework as the guiding theory, the author designed the English writing course according to the actual teaching situation, formulated the teaching plan, implemented the teaching practice for 12 weeks, conducted the pre-test and post-test for the students' writing level, collected the data of the two tests, and analyzed it with SPSS.

4.1 Research Questions

This study aims at the current situation of college English writing teaching, and under the guidance of TPACK theory, through reading and analysis of relevant literature, wants to verify through experiments what effect the application of TPAC theory in college English writing teaching will have on students' writing interest and writing achievement. This experiment mainly studies the following two problems:

(1) What is the current situation of college English writing teaching?

(2) What is the impact of applying TPACK theory to college English writing teaching on students' writing achievements?

4.2 Research Object

The author randomly selected a total of 80 students from two natural classes in 2022 of Lanzhou College of Information Science and Technology as the research objects. A 12-week teaching experiment was conducted from August 29 to November 18 in the autumn semester of 2022.

4.3 Experiment

This study selects the real writing questions of CET-4 over the years as the learning content. The following is an example of the writing part of CET-4 in June 2022.

Before the implementation of the course, the teacher creates a WeChat group to release the writing task. Let students write their compositions in advance and upload them to the Yunban class platform. Then the teacher releases the learning task through the WeChat platform, requires students to use the Yunban class, check the extracurricular resources related to the topic by themselves, and organize students to carry out relevant topic discussions. During this process, teachers publish learning tasks and recommend learning articles through WeChat chat interface. Teachers and students interact and communicate with each other through the WeChat chat interface. Students use Yunban class APP to view the learning materials related to the topic in advance, including articles, videos, etc. These links all reflect the view of TPACK instructional design theory, that is, using modern science and technology to attach importance to the role of context and cooperation in the teaching process, and to emphasize learners' learning initiative and meaning construction.

In the class, the teacher uses situational teaching method, communicative teaching method and interactive teaching method to teach. At the same time, these teaching methods arecombined with advanced technology to teach students. The teacher teachers students the knowledge of writing content flexibly to stimulate students' interest and initiative in learning English writing.Through the communication and exchange between teachers and students, the teacher guides students to understand and learn knowledge as much as possible step by step. The teacher displays pictures related to the writing theme in class to attract students' attention, thus helping students to vividly understand and memorize knowledge, and to use multimedia in class to search for keywords related to the theme through the resource browser. The teacher also plays the video to students to provide students with more intuitive visual experience in the process of playing the video and enrich the form of classroom even add a lot of interest to students' learning. At the same time, students learn difficult language points and memorized relevant key knowledge in the text more easily by watching videos. The students watch the pictures presented by the multimedia and then think about the writing task. This part involves TCK in TPACK, which belongs to the subject content knowledge of integrated technology. At the same time, teachers also use PCK and subject teaching method to introduce students into the classroom. In the question and answer session, the teacher uses the PC in TPAC, which is the subject teaching method in the subject teaching knowledge of integrated technology. At the same time, PK is also used, which belongs to the teaching method of teachers to make the whole classroom link more compact. The teacher uses TK in TPACK in the process of playing text audio. It belongs

to technical knowledge, and also includes TCK. It belongs to the subject content knowledge of integrated technology in the subject teaching knowledge of integrated technology. After the explanation, students completed the corresponding writing task and upload it to the Yunban class platform again.

After class, the teacher uploads some reference texts for writing on WeChat platform to provide reference for students' review after class. The teacher selects some students' compositions for pre-and post-evaluation and give comments and explanation. Students ask questions about class content or homework in the WeChat group, discuss and seek solutions. The teacher guides and evaluates them in the process. At the same time, students also share their homework experience and learning experience in the WeChat chat group for other students' reference and learning. In this part, the teacher refers to the PC in TPACK, which belongs to the subject teaching method. The teacher applies questions and doubts for students, provides guidance and help for students' learning, which also includes TCK.

5. Data Analysis

The author chooses the same writing task as the pre-test and post-test of this study. SPSS is used to make statistics. According to the descriptive statistical table, the average score of 80 students in the reading test is 14.75, and the standard deviation is 5.467. The average score of the post-test writing score is 19.65, and the standard deviation is 4.661. The average score of post-test writing achievement is higher than that of pre-test writing achievement. In addition, the author uses SPSS for T-test, the results of the T-test of reading performance comparison show that the T-distribution value of the test is 7.653, and the corresponding significance sig value is 0.000, which is less than 0.05, reaching the significance level. Therefore, there is a significant difference in the scores of reading performance in the pre-test and post-test, and the results of the subjects are significantly improved.

6. Results and Discussion

According to the data analysis, students' writing performance has improved significantly. The author believes that the reason for the improvement of students' writing performance is that the author has applied TPACK in the writing teaching, which has well integrated educational technology, teaching methods and teaching content, thus promoting students' learning. Teachers use TPACK in the teaching process, based on teaching materials and supplemented by network resources, which can enrich teaching resources, meet students' various needs, enhance students' learning interest, and activate the classroom atmosphere. The efficient integration of educational technology and English writing teaching by teachers can improve the quality of classroom teaching and strengthen the cultivation of teachers' professional quality. At the same time, information technology is used to cultivate students' ability of active learning and cooperative learning, which is conducive to helping and promoting students' learning and improving their academic performance.

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