Research on the Application of STEAM Concept to College English Learning in China

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Abstract. Compared with traditional learning theories, the STEAM concept aims to establish a set of thinking systems which could promote students' innovative thinking and comprehensive qualities. The application of STEAM concept to college English learning can deepen the integration of English and other subjects, and help university students to learn specialized English knowledge related to their own majors. In learning practice, it focuses on the connection between knowledge and real life, and stimulates students to think more while learning. Application-oriented learning and group cooperation could promote university students' independent learning, and cultivate students' comprehensive abilities.

1. Analysis of the STEAM Concept

The term STEAM is getting increasingly popular in China, leading to more and more training courses after class and new studies from scholars on learning and education. The STEAM concept originated from STEM concept. This idea was first proposed in the United States in the 1980s. In order to ensure the cultivation of outstanding talents, scientists first proposed the STEM concept, which is the first letter of Science, Technology, Engineering, Arts, and Mathematics. Later, educators realized the importance of arts, which finally made the STEM concept develop into the current STEAM concept. This is an interdisciplinary education system and a set of thinking systems. These five disciplines, with a combination of technology and engineering, a combination of art and mathematics, have broken the boundaries of discipline.

Through various STEAM learning aids and extracurricular practices, university students can learn about the connections between various disciplines through their own practices, understand how the world works, and cultivate thinking logic, spatial imagination, and creativity. It emphasizes the importance of each discipline and application of knowledge to practice. STEAM education is as important in America as the “quality-oriented education” in China. Not only does it emphasize the importance of subject knowledge, but it also pays more attention to students' ability to solve practical problems.

Under this worldwide environment, college English learning should also combine the STEAM method. As the first language in the world, English is becoming more and more important. We use it to communicate with more people in the world and also to get further information about our majors and future careers. Combined with different majors, college students should learn specialized English in higher grades. Based on the interdisciplinary study of STEAM, English learning should combine knowledge of other disciplines, such as mathematics, architecture, arts, technology, and business. In fact, most of the textbooks used in colleges in China have integrated topics about these common disciplines into the texts. In order to meet the needs of companies and graduates, interdisciplinary study of English has becoming more popular, thus promoting the development of specialized English.

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2. Strengthening the Connection between English Learning and the Real World

STEAM concept advocates the integration of knowledge in various fields through a comprehensive curriculum, strengthens the interdisciplinary interaction, allows students to learn in a comprehensive environment, and applies knowledge from multiple disciplines to solve problems in real world.

In the college, learning of English vocabulary and sentence patterns is undoubtedly boring and restricts the development of students. Students could integrate topics in science, art, mathematics, astronomy, climate, sports, and society into their English learning, so they can use English flexibly in various subjects. For example, when discussing environmental protection topics, students can analyze the causes and improvement measures of existing environmental pollution problems, find information through the Internet, and then make posters for publicity. This task can guide students to explore problems independently, to understand relevant environmental pollution phenomena and scientific knowledge, and to find ways to solve problems. English learning is connected with real life. This makes students find the meaning and interests in English learning. At the same time, the production and promotion of posters can also improve students' practical ability and social communication skills.

3. Focus on the Students' Participation in Learning Process

Traditional results-oriented learning methods focus on passive transmission of knowledge, which makes students lose their subjectivity and initiatives. STEAM method emphasizes students' participation in the learning process, allowing students to fully enjoy the process of their own production. In practice, students use the knowledge they have learned to deal with real-world problems. This learning model is student-centered. It emphasizes the core position of learners in the process of language learning, which is a never-ending process of inquiry. This kind of learning ability would be meaningful and useful during the students’ whole life.

In the process of practicing and solving problems, students gradually acquire knowledge, improve their skills, and have a sense of enlightenment. In college English class, teachers should make full use of STEAM education concept, guide each student to think actively, explore actively, be willing to cooperate, dare to express and demonstrate, continuously improve their English learning ability, and simultaneously improve the comprehensive ability of all aspects. For example, students could be encouraged to preview new texts, try to finish exercises after class by themselves, figure out new language knowledge by using dictionaries. To explain the answers without asking the students to think carefully is not a reasonable choice.

4. Focus on Application Abilities

The STEAM concept emphasizes not only the integration of subject knowledge, but also the improvement of students' practical ability. This learning mode tries to encourage students to apply theories to practical using.

English is currently the most widely used language in the world. Mastering English is to communicate with the world. In other words, we learn English for the purpose of using it. Learning English is not about becoming a linguist, but about being able to use it. Many students learn English mainly to improve their scores. Chinese students have been learning English for many years, since elementary school or even kindergarten. After studying for many years, many of them still can't read English original books or understand English original movies and TV dramas. They can't communicate with foreigners after going abroad. They still can’t express their ideas in English

fluently and smoothly. These indicate that during Chinese students' English learning process, the use of language is not cultivated adequately.

With the help of STEAM concept, students should pay more attention to the use of English rather than just memorizing vocabulary and grammars. In class, students are suggested to take each opportunity to practice. They could also take part in all kinds of extracurricular activities on campus, such as English club, English contests, English lectures. These are good forms of second-class activities, to supplement limited class time. Outside the college, there are some part-time jobs which require English skills, such as translator, waiter in western restaurants, guide for foreign tourists. This is a good opportunity to apply what they've learnt to practice. Students can find out their problems during the practices and thus help them to learn better.

5. Importance of Group Cooperation

The STEAM concept not only supports the individual learning of individual students, but also emphasizes that students can cooperate with each other in groups, learning to solve problems and experience the joy of creation. In teaching, teachers should adhere to the student-oriented mode, pay attention to individual differences, improve teaching efficiency, and lay the foundation for students to continue their self-learning in the future. Cooperative learning fully embodies the student's dominant position, making each student an active participant in learning activities rather than a passive knowledge recipient or bystander. Every student has his own different ideas. Students learn from each other in the group and discuss with each other. Each student has the opportunity to explore and practice. Cooperative discussion can cultivate students' ability of inquiry and communication, and improve learning efficiency. Group discussions and presentations have increased students' engagement and interests.

6. Conclusion

In summary, based on students' interests, using project tools, STEAM aims to develop a quality learning method for interdisciplinary problem-solving skills. In the process of college English learning, students should take the STEAM concept as a guide, focus on the integration of English and other disciplines, focus on exploring practice, use effective learning methods to stimulate students' active inquiry consciousness. STEAM concept helps to improve students' inquiry ability and train students to become innovative comprehensive talents for the future society.

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