

Research on College English Teaching Strategies under the STEM Educational Concept¹

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Abstract: At the present stage, college English teaching should be based on STEM as the concept and follow the requirements of the new liberal arts curriculum reorganization, so as to promote students to conduct interdisciplinary learning. But in the process of fusion teaching, some college English teaching, such as the lack of professional teachers, STEM concept, professional homogeneity, so that the English teaching subject integration lack of depth, cannot meet the needs of national development and social talents, based on this paper by expounds the significance of STEM education concept applied to college English teaching, analyzes the feasibility of STEM education concept in college English education and put forward strategies, aims to further optimize the university English teaching, promote the STEM education concept.

Keywords: STEM education philosophy; College English; Teaching strategy

STEM is science, technology, engineering and mathematics English first letters, STEM education idea is a kind of innovative education ideas based on the integration of the above four disciplines, through STEM education concept can guide students to comprehensively apply their knowledge to the world development law for detailed exploration, and in the process of exploration to guide students to solve problems, improve students' comprehensive ability. However, at present, STEM education concept is less applied in college English teaching, and the English education mode and school conditions of different universities vary greatly, so that the value of STEM education concept has limited play in college English teaching. Therefore, it is crucial to study the college English teaching strategy under STEM education concept.

1. The Application of STEM Educational Concept to College English Teaching

The significance of STEM education concept to college English teaching is mainly reflected in the following three aspects: First, improve the comprehensive ability of college students. In the context of STEM education concept, students use knowledge or skills to explore the world and the cognitive world, and single knowledge cannot improve the cognition. Therefore, college students need to integrate their own knowledge of various disciplines, combine theoretical knowledge with practical application, and use comprehensive knowledge to solve relevant exploration problems; second, improve innovative teaching ability. Traditional college English teachers do not have enough cognition of students' subject status in the classroom, so that the quality and efficiency of English learning is low. Use the STEM education idea and improve their teaching innovation ability; third, improve the college English teaching system. To carry out English teaching through STEM concept, we need to connect the knowledge of relevant curriculum, so as to improve the richness of English teaching resources, broaden teachers' teaching ideas, eliminate the knowledge barriers between various disciplines, and then improve the university English teaching system^[1].

2. The Feasibility of the STEM Educational Concept in College English Education

The concept of STEM education appeared early in China, and was initially widely applied to the curriculum practice of

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primary and secondary schools, and achieved remarkable results. Since 2012, China has gradually promoted the concept of STEM education to university education. In recent years, the research on STEM education concept in domestic universities continues to deepen, but due to the late starting time, there are still some shortcomings in the research work. For example, the current research is based on foreign schools and policies, most domestic research focuses on science and technology courses, and the lack of in-depth research in college English and other liberal arts courses. However, according to the study of a large number of literature, STEM education concept and second language education concept have inherent similarities. In STEM education concept, based on constructivism theory, specific learning links are defined, including situation, collaboration, communication and meaning construction; in the second language education concept, the acquisition theory is widely applied. "acquisition" mainly refers to the individual in the normal external environment by improving the contact with language input. Based on the above conditions, it is highly feasible to apply the STEM education concept in college English education. The specific process is as follows: First, teachers can simulate STEM situations according to the characteristics of students' different English majors, and normalize situational teaching. Secondly, teachers should actively group students in the teaching process, and guide group students to complete relevant tasks, such as cooperation, problem orientation, experiential, etc. Finally, teachers should have a deep understanding of English language culture, professional theoretical knowledge and other internal commonalities in STEM, and construct meaning through the internal connection between various disciplines. Carrying out college English teaching in STEM teaching concept can provide a realistic context for students, promote students to carry out purposeful communication, so as to accelerate the improvement of students' language ability, comprehensively cultivate students' comprehensive ability, and play a high role in promoting the educational goal of cultivating students' core literacy in the new era^[2].

3. Optimizing the college English teaching strategy under the STEM education concept

3.1 Improve the curriculum system

Current college English teaching, especially in English translation major, to timely change teaching objectives, the teaching goal from the traditional students to conform to the social and market demand, improve students' comprehensive ability, prompting students can provide language services, so as to reveal English professional characteristics, improve the university English professional service regional economic role. At present, the external conditions of college English teaching are limited, so the information-based teaching mode can be introduced to start online teaching. Teachers can use online platforms for teaching, such as MOOCs, wechat public account, Dingding and other platforms^[3]. At the same time, teachers can share targeted knowledge with students according to their differentiated interests and their future career plans. For example, some students have a high interest in international politics and economic aspects, and teachers can carry out relevant bilingual teaching accordingly, so as to ensure that the teaching content matches students' interests. When the external teaching conditions are good, the school should actively organize students to conduct in or off-school communication, and add mainstream major double rain classroom, so as to promote the effective combination of English translation and other majors. In addition, schools can cooperate with local governments and social forces to invite employees from relevant industries to communicate online or offline with school teachers and students, thus laying a foundation for the setting up of practical courses.

3.2 Promoting discipline integration

In the new liberal arts perspective, the integration of college English and STEM concepts attaches more importance to the integration of English and other disciplines, which is of great significance to improving the quality and effectiveness of English teaching. To perfect the cross fusion work, first of all, universities to broaden the scope of learning, English has universality, humanistic and national characteristics, and STEM education concept in foreign development maturity is higher, so universities should actively learn foreign or other advanced colleges and universities teaching experience, and experience with the school reality, localization of teaching experience, so as to improve the adaptability of subject integration. Secondly, colleges and universities should improve the frequency of communication with employers. The main purpose of subject integration teaching under the perspective of the new liberal arts is to meet the employment needs of the country and enterprises. Therefore, universities should actively communicate with the employers and deeply understand the specific needs of the unit for talents, so as to timely adjust their teaching methods and contents to ensure that students' English ability meets the employment standards of the unit^[4]. Finally, we should promote the reorganization, integration and optimization of college English subject structure. Un-

der the concept of STEM education, colleges and universities should not only improve their teaching ability from the outside, but also pay attention to the improvement of internal education level. Colleges and universities can regularly invite experts to give speeches and organize teachers' seminars to improve the enthusiasm of participating teachers, so as to promote the communication between teachers, and collect teachers' professional opinions on the subject reorganization, so as to improve the subject reorganization work, and promote the structure and hierarchy of English knowledge in colleges and universities.

3.3 Build a professional teaching team

Under the STEM education concept, university English teachers not only need to have higher English professional quality, but also to have certain basic knowledge of other disciplines, to effectively promote the university education application of STEM concept, but at present some colleges and universities lack of high professional, strong comprehensive ability of teachers, so the university to build professional teachers^[5]. On the one hand, colleges and universities can make use of the high-level talent introduction method, To carry out the special talent introduction work, Introducing compound talents, And by introducing talents to train the existing teachers, Changing teachers' traditional teaching concepts, Create a good teaching atmosphere of subject integration, Enrich teachers' teaching methods and storage, So as to improve the quality of teachers; On the other hand, colleges and universities can carry out targeted training for existing teachers, Training methods can be on-the-job training, enterprise training, etc. , Improving teachers' comprehensive ability through training, So as to assist teachers to rationally apply the STEM education concept, Ensure a high degree of integration between English and various disciplines, And then to lay a good foundation for the interdisciplinary English teaching in colleges and universities.

4. Epilogue

To sum up, under the STEM education concept of college English teaching is the future mainstream teaching way, universities should actively introduce STEM education concept, broaden the concept application coverage, colleges and universities can take perfect curriculum system, promote discipline integration, build professional teachers to optimize English teaching way, ensure STEM education idea depth applied to college English teaching, to improve the comprehensive ability of English students, meet the needs of national and enterprise talents.

References

- [1] Zhang Jing. —— takes Lanzhou City College as an example [J]. English Square, 2021 (23): 113-115.
- [2] Guan Jingyu, the car is moving forward. Research on the Reform Path of python Language into College English under New Arts [J]. Journal of Mudanjiang Education College, 2022 (03): 87-90 + 126.
- [3] Reddan. —— takes the example analysis of "the secret of bottled water" as an example [J]. Vocational Education (Next ten days), 2020, 19 (07): 87-91.
- [4] left xia. —— takes Wuhan University of Media and Communication as an example [J]. Campus English, 2021 (46): 19-20.
- [5] Road one chess. On the Application of STEM Education in English Teaching [J]. Overseas English, 2021 (17): 133-134 + 142.