# Research on the Reform of Higher Education Teaching Model in Applied Undergraduate Colleges

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**Abstract:** With the deepening of China's social and economic system reform, the demand for applied talents in various industries is also growing. Traditional higher education mainly focuses on training academic and research-oriented talents, which is far from meeting the current social needs. Higher education should change its educational mode, focusing on training applied and innovative talents, thereby better adapting to social development and cultivate more practical talents for all walks of life. The paper mainly analyzes the problems existing in the teaching mode of higher education in applied undergraduate colleges, and proposes solutions to the problems.

## 1. The Practical Significance of Constructing Applied Undergraduate Colleges and Universities

### 1.1 Application-oriented undergraduate colleges and universities are the inevitable choice for popularizing higher education

According to the statistics of 2018, the gross enrollment rate of higher education in China has reached 48.7%. This shows that higher education has developed from popularization to popularization. Not surprisingly, the gross enrollment rate of higher education in 2019 is expected to reach 50%, which proves that China's higher education has formally entered the stage of popularization. At present, higher education has become the basic needs of our people, especially the growing differences in student resources. It is necessary to adopt hierarchical training objectives to improve the overall quality of talents. Therefore, higher education must achieve diversified, differentiated and dislocated development. In this way, we can better adapt to the status quo and truly transform ourselves from the development of students. The development of applied undergraduate colleges is an inevitable way. In the process of running schools, according to their actual conditions, objective environment and local economic development needs to form a unique school philosophy and educational style. Develop applied and innovative talents to better adapt to social development.

### 1.2 Applied undergraduate colleges are necessary ways to meet the development of regional industries

Higher education must follow the development law of the external environment, and it has inextricably linked with the social economy, political environment and cultural development. The construction and development of applied undergraduate colleges must form a relationship of cooperation, cooperation and leadership with the industrial structure and economic growth in the region. With the continuous development of science and technology, various industries are facing the demand for technological innovation and industrial transformation, and new business models and new occupations are constantly emerging. Higher education has the basic functions of training personnel, scientific research, and serving the society. The main goal of higher education is to train all types of high-level, high-quality talent. In order to upgrade the industrial structure and promote the transformation of the economic structure in regional economy, it is necessary to master new technology, professional and applied talents. Therefore, the construction of Application-oriented Undergraduate Colleges and universities is a necessary way for higher education to adapt to regional economic development and local industrial development.

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### 1.3 Applied higher education can promote the organic integration of innovation, entrepreneurship and professional education

Education is to use future technology to renew current technology. To meet the needs of social development, the training of talents must have a future concept. In the era of knowledge-based economy, the development of information technology is changing with each passing day, the industry is upgrading rapidly, and the career renewal cycle is becoming shorter and shorter. Higher education must make rapid response and response, always taking "building a strong educational country" as the starting point and strategic direction of personnel training. Out of the limitations of the environment, with a breakthrough, innovative ideas. Break the current state of teaching based on professional education and a single subject. Realize the organic combination of professional education and general education, and innovation and innovation education. It can be seen that promoting the construction and development of applied undergraduate colleges can promote the reform of innovation and entrepreneurship education. Integrate the concept of innovation and entrepreneurship education into a comprehensive and in-depth integration of talents.

## 2. The Problems of Higher Education Teaching Model in Undergraduate Colleges and Universities at the Present Stage

Specifically, at this stage, there are still some problems in the higher education teaching mode of our country's undergraduate colleges and universities as follows:

### 2.1 Emphasizing theory and neglecting practice in teaching curriculum setting

The problems existing in the curriculum system of higher education in undergraduate colleges and universities are mainly manifested in the following aspects: Firstly, the three-stage curriculum structure is adopted, and the curriculum content is single. The curriculum structure of traditional undergraduate colleges and universities usually includes three modules: public courses, professional basic courses and professional courses. The content of the course is mostly carried out around the subject knowledge system, and the teaching process focuses on the study and mastery of students'theoretical knowledge. Although students can learn a solid theoretical basis, but students in the learning process are mostly passive acceptance. It is not only lack of learning initiative and independence, but also not conducive to the cultivation of students'innovative thinking and critical spirit. Secondly, the teaching plan is unreasonable. In traditional undergraduate teaching, theoretical teaching and practical teaching are separated from each other. Students first complete the study of theoretical knowledge in the school, and then internships in the unit. When the teacher lectures, he also teaches the theory in the classroom, and then explains the practice in the laboratory. The theory and practice are disconnected from each other during the whole learning process. Students can only memorize hard, which is not conducive to the improvement of students' practical ability. Finally, the teaching of humanities and social sciences is ignored. Although the traditional undergraduate teaching has a public course based on general education, the actual teaching management is managed by the administrative class. The humanities curriculum is very rare, and the students' knowledge of humanities and social sciences is scarce. As a result, students lack social responsibility and their learning objectives also show obvious utilitarianism.

### 2.2 The faculty lacks applied talents

Teachers are an important resource for cultivating talents. In a sense, teachers' teaching ability, teaching philosophy and even personality charm will have an important impact on students. To cultivate applied talents, it is necessary to establish an applied faculty. The so-called applied faculty must not only have profound theoretical knowledge, but also have strong practical guidance and experience, and have rich practical work experience or work experience. Go deep into the industry and truly understand the development of the industry and accurately grasp the development of the industry. Being able to translate theoretical knowledge into practical ability is good at turning theoretical knowledge into practical ability. Therefore, it can cultivate applied talents with solid

theoretical foundation and strong practical ability and innovative spirit. However, the traditional education concept is deeply rooted, coupled with the limitations of the qualifications of university teachers in reality, the number of applied teachers in China's undergraduate colleges and universities is far from meeting the actual teaching needs. The transformation and development of undergraduate colleges and universities is a major trend. However, many teachers in Colleges and universities are directly taught after graduation. Although rich in theoretical knowledge, and also participated in some professional related social practice activities, but never engaged in professional practice. Lack of work experience leads to the insufficiency of professional teachers'practical application ability, so the teaching ability of transforming theoretical knowledge into practical ability can not be discussed.

### 2.3 The talent quality evaluation system needs to be improved

Talent quality is the core criterion for evaluating the teaching quality of higher education in undergraduate colleges and universities. At present, China's higher education has not yet formed a set of scientific and operational evaluation criteria that can truly reflect the quality of talents. Some undergraduate colleges and universities will quantitatively assess the learning standards of talent quality, and evaluate classroom teaching, practical teaching, curriculum design, practical training, graduation design, etc. However, these quality standards are too general and undetectable. Most of them are based on the teacher's subjective judgment. The evaluation of students' comprehensive ability and even the quality of their talents is not objective. Some schools still lack a set of quality standards for teaching infrastructure, such as professional construction. , curriculum construction, teaching materials construction, etc. If the talent quality evaluation system is not perfect, the reference effect of the evaluation results on teaching activities will decline. Therefore, the construction of applied undergraduate colleges must improve their teaching quality evaluation system to better adapt to the application-oriented teaching objectives.

## 3. Reform Strategies of Higher Education Teaching Model in Applied Undergraduate Colleges and Universities

In view of the problems existing in the teaching mode of higher education in Application-oriented Undergraduate Colleges and universities, it is suggested that the reform be carried out from the following aspects:

### 3.1 Constructing an application-oriented curriculum system based on curriculum connotation

Comparing the applied higher education curriculum with the academic education curriculum, we can see that the two courses have different training emphasis on students'thinking, different ability types, and different professional accomplishment and knowledge level. Therefore, whether it is knowledge structure, teaching system or teaching form, they should be treated differently. First of all, the applied higher education curriculum should be guided by the actual requirements of industrial technology and vocational skills, rely on the in-depth cooperation of government, industry, education and research, and integrate teaching resources. In the process of teaching, we should make full use of the advanced teaching technology such as Internet and multimedia, promote the reform of the curriculum system through online and offline curriculum forms, and fundamentally promote the curriculum system of Applied Colleges and universities. Reshaping, Innovating Curriculum Content and upgrading curriculum connotation. Second, we must adopt a flexible form of teaching organization. The form of class teaching is difficult to stimulate students' internal motivation, not only the learning effect is not satisfactory, but also the opportunities for students to carry out innovative practice. In order to build an applied undergraduate college, it is necessary to change the problem of "re-theory and light practice" in traditional teaching, and take the cultivation of students' practical ability as the key direction. According to the actual situation of students, flexible teaching organization is adopted to stimulate students. Learn to be active. Finally, strengthen the form of non-teaching. The so-called non-teaching or implicit curriculum, in a broad sense, all activities beyond the scope of the school's prescribed curriculum are within the scope of

implicit curriculum. In the actual teaching work, students can be attracted to some daily internships or management work, or participate in some social practice activities. Make students more exposed to meaningful new things outside the campus, enrich their social readiness, and improve their social adaptability.

### 3.2 Strengthening the construction of applied faculty

In view of the current situation of the shortage of applied faculty in undergraduate colleges, it is recommended to improve from the following aspects: First, develop a set of operational and scientific application-oriented teachers. At present, the application access standards of many applied universities are almost the same as those of traditional universities. To change this situation, a scientific application-type teacher admission system must be developed from the source. In the access criteria, the teacher's work experience or practical ability must be one of the necessary conditions to ensure the practical ability of the applied teacher. Secondly, reform the methods for assessing the title of teachers in applied undergraduate colleges. The title evaluation will directly affect the salary and welfare of teachers. Only when the evaluation method of teacher title is reformed, teachers will have more motivation to strengthen the study of practical theory. Scientific professional title evaluation methods can standardize, guide and encourage teachers to devote more energy to the research of Applied Teaching activities. Therefore, for application-oriented teachers, they should not only have profound theoretical knowledge, but also have certain achievements in design and development, social research and so on. Besides, we should also make some achievements in the training of College Students'employment and entrepreneurship. In the specific implementation, we can learn from the advanced experience of some international universities, that is, to form a market-oriented incentive mechanism within the university, and to implement accountability, rewards and punishments for the appointment of teachers. Through the method of eliminating the fittest, we can promote teachers'rapid growth and maintain a strong professional spirit for a long time. Finally, undergraduate colleges and universities should carry out in-depth cooperation with enterprises. School-enterprise cooperation is not only aimed at the cultivation of students, but also provides convenient conditions for the cultivation of applied teachers. Teachers go deep into enterprises to learn and enrich their practical knowledge, so that they can truly become a "dual-competent" teacher who can not only impart theoretical knowledge to students, but also have strong practical ability.

### 3.3 Establishing a scientific talent quality evaluation system

Firstly, we should determine the quality standard of applied talents. Applied talents do not always emphasize the practicability of talents, but also fully consider the "general ability" of students. The so-called general ability includes its computer application ability, information acquisition ability, language expression ability and other technical abilities. On the other hand, it also includes its creativity, imagination, innovative consciousness, mathematical thinking and other comprehensive qualities. Secondly, it is necessary to clarify the subject of talent quality evaluation. Although the evaluation criteria of talent quality formulated by the competent educational authorities are authoritative and impartial. However, the service target of applied talents is society, especially enterprise organizations. Only industry associations and enterprise organizations have more say in the evaluation of talent quality. Therefore, the main body of talent quality evaluation should be based on various industry associations and enterprise organizations. Finally, the scientific talent quality evaluation method is adopted. On the one hand, we must adhere to the principle of dynamics, not only depends on the ability of students to adapt to their positions, but also their professional development potential. On the other hand, appropriate evaluation methods should be adopted for the characteristics of the evaluation indicators, and weight calculation should be carried out for several core indicators to improve the scientificity of the evaluation.

## 4. Conclusion

Based on the analysis of the mechanical theory as the foundation, designed the soccer robot pick

the ball institutions optimal design process, found aim function, select design variables and the corresponding optimization algorithm to optimize a complete set of institutions. At last through the test to get the final performance parameters of the institution. Experiments show that the system has higher accuracy and stability, the new optimize pick the ball have design basic requirements, and achieved good ideal control effect.

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