

Research on "General Vocational Integration" Curriculum Development in Higher Vocational Colleges from the Perspective of "Six Excellence, One Top, and Four New"

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Abstract: The creation of curricula should adhere to the principle of "integration of general education and professional education" in the development of all types of professional talents and address the issue of "two skins" between liberal arts and professional studies. Emphasize the study of fundamental theoretical courses, grasp the profession's main lines, highlight professional characteristics, and develop a personal professional brand. This paper explores the implementation measures, strategies, and paths for the construction of applied talents in the four new professional courses by analyzing the qualitative analysis results of industry job requirements and the current situation of course offerings related to professional data analysis in some vocational colleges. This paper also provides decision-making basis for the development of a "general vocational integration" course system for various majors, meeting their needs.

Keywords: Integration of general and specialized education; Curriculum construction; Outstanding and top-notch; personnel training

1. Introduction

The Ministry of Education decided to implement the "Six Excellence and One Top" Plan 2.0 in October 2018 in order to accelerate the creation of high-level higher education and comprehensively improve talent cultivation capabilities. Documents such as the "Opinions of the Ministry of Education on Accelerating the Creation of High Level Undergraduate Education and Comprehensively Improving Talent Cultivation Ability" were released. The "Notice on Announcement of the First Batch of" New Engineering "Research and Practice Projects" (Jiao Gao Ting Han [2018] No. 17) was published in March 2018 by the General Office of the Ministry of Education. The People's Republic of China's Ministry of Education will gradually broaden the scope of the "four new" disciplines of "new engineering," "new medicine," "new agriculture," and "new humanities" in 2021.

The development of professional courses is the cornerstone of a vocational college's professional and curricular structure, as well as its instructional hub. It carries out the fundamental role of developing professional talents in the classroom, reflects the traits of the profession, supports the growth of the profession, and exhibits the traits of the profession. A comprehensive professional curriculum system and other professional courses that branch out from it combined create the school's system for developing professional ability. The development and reform of professional courses is a crucial component of raising the standard of instruction and learning in China's vocational colleges. It is also a fundamental problem that must be resolved and addressed immediately as part of the process of reforming these institutions. The study team has a thorough understanding of how China's vocational colleges are currently constructing their professional core curricula, which aids in advancing professional construction efforts and promoting the creation and enhancement of curriculum materials in these institutions.

2. The issues with and reasons for curriculum development in technical colleges

2.1. Issues and Justifications in the Design of Engineering Courses

China, a leading nation in engineering education, has always placed a high value on curriculum development. While emphasizing students' mastery of engineering information and honing their cognitive ability, the most recent curriculum development in engineering education focuses on nurturing students' cognitive capacity to subject knowledge. However, it frequently ignores the individual variations of every student as well as the instruction of students' practical engineering experience. The design of the curriculum prioritizes theoretical instruction while ignoring practical instruction^[1].

2.2. Issues and Justifications in the Design of Medical Courses

Through research, it was discovered that there are still certain issues with the design of medical courses, including: (1) the course's analytical technology-based content, which consists of sophisticated material and unimportant knowledge points. (2) The classroom teaching style is typically based on PPT teaching and teacher lectures, and is therefore rather straightforward and boring. The teaching format is somewhat constrained by the teaching topic. (3) The course emphasizes on the study and application of analytical technologies (Instrumental chemistry, etc.), making it challenging to pique students' interest in this subject. There is also less interaction between lecturers and students, and students passively acquire knowledge. Students lack the practical operation skills necessary for experiments that are constrained by operational costs, time, equipment, etc^[2].

2.3. Issues and Justifications in the Design of Agriculture Courses

(1) Inexplicable course design

First off, while having a strong understanding of major agricultural diseases, students lack a structured framework for diagnosis and treatment. When faced with clinical cases, they are unable to treat patients or make treatment decisions because they lack knowledge of the etiology, clinical symptoms, treatment options, and prevention of numerous agricultural illnesses. Second, for a very long time, agricultural surgery and internal medicine received much more attention than agricultural theories, which resulted in some agricultural teaching resources being outdated, some young teachers being inexperienced due to lack of attention, and students being unable to independently solve clinical problems^[3].

(2) Students' lack of application of knowledge

Research has shown that although there are more agricultural hospitals, there are also more and more assessments of unqualified, incurable, and pricey agriculture doctors. For instance, a veterinarian for animals may recommend fruit root extract, a cold Chinese medicine, to treat symptoms of clear or white nasal discharge and obvious wind cold, cold, and cough in pets. Treatment for wind, cold, and cough with anti-viral medication will be ineffective and may even make the disease worse. This phenomena can be explained by the fact that most students lack practical skills in the classroom and have a disorganized knowledge system, which is the fundamental cause of the phenomenon.

2.4. Issues and Justifications in the Design of Liberal arts Courses

(1) Curriculum systems are neglected in favor of disciplines in professional construction.

Due to China's emphasis on disciplinary construction in the development of vocational colleges, many of these institutions now only pay attention to the disciplinary accomplishments of their majors (such as the number of academic papers, research projects, etc.), ignoring another aspect of professional construction: the development of curricula and courses that effectively transform the academic accomplishments of majors into carriers of student learning^[4].

(2) The quality, characteristics, and amount of creativity in the curriculum are all low.

Vocational colleges no longer have any distinguishable qualities, and they perform especially well in terms of professional environments and curriculum design. The lack of distinguishing elements in curriculum construction is becoming more and more problematic in the growth environment where vocational colleges strive for excellence and comprehensive universities, where the similarity in main settings leads to a convergence in curricular settings.

3. Creating the "General Vocational Integration" Curriculum in Higher Vocational Colleges: Measures, Strategies, and Approaches

3.1. Construction of the "Integration of General and Specialized Courses" in New Engineering: Measures, Strategies, and Approaches

(1) General and specialized courses are combined in engineering majors against the backdrop of new engineering

Under the background of new engineering, Liberal education and professional education should not be two pieces of skin. They can blend and promote each other. Infiltrate engineering professional ideas into general education courses, and gradually form professional conceptual general education courses (basic core of Liberal education+specialized personalized core); At the same time, professional courses should also incorporate humanistic qualities and scientific spirit.

(2) Establishing a framework of interdisciplinary and diversified professional curriculum

Physics, energy and power engineering, electronic science and technology, and other subjects are all included in the engineering major, which is an interdisciplinary field. An urgent issue that needs to be resolved is how to rely on these disciplines, deeply comprehend the issues with the professional curriculum system, and optimize its planning in order to form a highly operable and structurally reasonable curriculum system. This is because some engineering majors in China have only recently begun and lack the experience to follow.

(3) A thorough design of professional courses

The engineering specialty curriculum system should give students a thorough understanding of engineering technology in science and engineering, incorporating fundamental disciplines like chemistry, physics, materials science, and biology as well as covering fundamental theoretical knowledge in areas like mechanical design and manufacturing, applied mechanics and materials, electronic engineering, fluid and heat transfer, and more. For this reason, the curriculum system should establish "basic general education courses," "basic science courses," "professional basic courses," "professional core courses," "professional elective courses," etc., in a corresponding manner, and establish a distinct hierarchy of professional course groups that integrate general and specialized courses.

3.2. Measures, Approaches, and Strategies for the Development of the New Medical Curriculum for "General Specialized Integration"

(1) Ensure that course materials are consistent and that teaching materials are updated regularly in textbooks to reflect current events. They should focus on developing new medical talent with competitiveness in the global innovation market as well as the future innovation leading development of the nation, in addition to meeting the needs of students' mastery of theoretical knowledge and skill development in their respective majors.

(2) To enhance the educational material, the curriculum must include ideological and political components.

The most appropriate entrance points from the teaching material, methods, emotions, and other features must be determined based on the students' learning styles and attitudes toward medical courses. In order to create a new teaching strategy for fully and thoroughly developing skills, the course must include ideological and political components.

(3) We should emphasize the necessity of integrating theory and practice in teaching, from textbooks to classroom activities.

Students may be encouraged to visit job sites for positions connected to drug analysis or medical science in addition to classroom instruction and experimental procedures. In actuality, course instruction can be used to develop students' experimental operational skills and improve their comprehension of jobs related to medicine, setting the groundwork for future aspirations to work in medicine and scientific research.

3.3. The New Agricultural Science "General Specialized Integration" Curriculum: Measures, Strategies, and Approaches

First, the teaching objectives are broken down into knowledge, ability, and quality objectives in order to cultivate students from three different perspectives by using talent development plans and outlines to define them. To design classroom instruction, ensure teaching content, methods, and management, and create an OBE teaching model, update lesson plans based on teaching objectives. Achieve multi-dimensional nurturing of applied professional abilities in the emerging field of agricultural science, analyze the course objectives from various angles, and continually enhance the course based on input from students and other course team members.

3.4. Construction of the New Liberal Arts "General Vocational Integration" Curriculum: Measures, Strategies, and Approaches

(1) Developing subject competitions with OBE as the guiding principle and enhancing the system of support for developing students' skills and traits

One of the finest practices for college students is subject competition, particularly in the areas of mathematical modeling, data mining, big data marketing, and other competitions. By taking part in competitions, we can inspire college students' initiative and zeal, foster their ability to work together and be creative, and finally realize the objective of encouraging learning and teaching through competitions.

(2) Improve the educational framework and provide multidisciplinary courses.

In order to gradually create an interdisciplinary knowledge network for new humanities courses, vocational colleges must optimize general education courses based on consolidating the connotation of professional courses, combine with the data science system, and appropriately increase the construction and reform of the original professional knowledge system.

The primary teaching method used in interdisciplinary courses is experimental teaching, which links the major's core courses and tries to solve real problems through data analysis. In addition to strengthening the process evaluation and final assessment procedures and encouraging college students to consider many solutions to challenges, it also shows the course's innovative, sophisticated, and difficult nature.

(3) Putting together a compound teaching team with middle school teachers acting as the Adhesive

The "bonding" of intermediate level instructors is necessary for the integration of data science since they may help existing teachers update their knowledge structures while also achieving the intersection of traditional courses and data science. The initial course instructor put out experimental goals supported by theoretical knowledge; the middle level teaching staff is made up of in-house instructors and outside specialists from the industry. The design of experimental processes is primarily driven by data science, which forms the foundation of the knowledge structure. The teaching method uses a one-course, dual-teacher approach, allowing them to jointly evaluate the findings of experiments and develop exceptional, top-notch new humanities talents.

4. Conclusion

An optimization plan for the engineering professional curriculum system is proposed, and a "general vocational integration" professional curriculum system is established on this basis. In the new situation, combined with the concept of "new engineering," this article suggests that it is necessary to analyze and summarize the research situation of engineering major curriculum construction in vocational colleges in Guangdong Province. A blueprint for the development of engineering majors in Guangdong Province, and possibly the entire nation, is provided by the construction plan for the professional curriculum group known as "basic general education scientific foundation professional foundation professional characteristics professional expansion."

The creation of new medical specialties opens up possibilities for curriculum, professional development, and the growth of medical vocational colleges. Medical vocational colleges should combine their unique characteristics, define their own development direction, create reform content that is in line with the school's current development, start with curriculum construction, focus on developing high-caliber medical outstanding talent, build on prior accomplishments, rely on the framework of new medical construction, deeply reform education and teaching, and promote.

The new agriculture major curriculum is investigating the implementation road for the production of applied abilities, and the future development trend is to establish a learning strategy that seeks to completely mobilize and unleash students' subjectivity. Investigate the new agriculture major's curriculum and teaching reforms, reform the teaching subject, content, and techniques, and accomplish the employment docking of medical graduates. This will lead to fresh discoveries for developing creative applied talents in the emerging agriculture industry and support the existing national strategy for developing a strong nation with exceptional and top-notch abilities.

This article proposes a construction idea for a data analysis curriculum system that intersects liberal arts and data science for applied vocational colleges based on the qualitative analysis results of industry job requirements and the current situation of data analysis curriculum setting in some vocational colleges, based on the research results of the connotation, talent cultivation mode, major setting, and professional curriculum setting of the new liberal arts construction.

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