

PROCEEDINGS ARTICLE

Research on the Reform of "Three Education" of Specialty Groups in Medical Higher Vocational Colleges

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ABSTRACT

To carry out research on the reform of teachers, teaching materials and teaching methods based on medical education in higher vocational colleges is an inevitable choice for medical higher vocational colleges to implement the fundamental task of strengthening moral education and cultivating people, carry forward the spirit of respecting and saving life and loving people without boundaries, deepen the integration of production and education, and improve the quality of talent training. In response to the current problems such as poor industrial adaptability of specialty groups, unsatisfactory resource integration and allocation, and delayed feedback on construction results, the specialty groups of medical higher vocational colleges should deepen the reform of "three education", build a "pyramid" type teacher team, and consolidate the foundation of "three education" reform. The groups should also reorganize the "platform + module" curriculum system and create multi-dimensional teaching materials. It is necessary to deepen the reform of "online + offline" teaching mode and build a diversified classroom teaching ecology. And it is also necessary to establish a "multi-dimensional grading" evaluation system to ensure the effectiveness of the "three education" reform.

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1. INTRODUCTION

In February 2019, the State Council issued the "National Vocational Education Reform Implementation Plan", proposing to build a number of high-level vocational colleges and specialty groups, and implement the "three education" reform of vocational education teachers, textbooks and teaching methods. In September of the same year, nine departments including the Ministry of Education issued the "Action Plan for Improving the Quality of Vocational Education (2020–2023)", which clearly promoted the high-quality development of vocational colleges, selected about 600 high-level specialty groups [1], and implemented the "three education" reform of vocational education. It can be seen that the construction of specialty groups and the reform of "three education" follow the same policy guidance. Following the construction logic of medical specialty groups, carrying out the research on the reform of

"three education" based on medical education in higher vocational colleges can effectively implement the fundamental task of strengthening moral education and cultivating people. It is a must to carry forward the medical ethics spirit of respecting and protecting life, and cherish the boundless love, deepen the integration of production and education, and effectively improve the quality of personnel training in medical higher vocational colleges [2].

2. TIME CONNOTATION OF THE "THREE EDUCATION" REFORM OF THE SPECIALTY GROUPS

The specialty group is a specialty cluster consisting of related majors, with core majors as the leader, according to a certain grouping logic. The construction of specialty groups may cross teaching organizations and industries. Therefore, to explore

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the implementation path of the "three education" reform based on the medical specialty groups, reform the traditional education and teaching mode, and take multiple measures at the same time, which is in line with the particularity of the training of medical talents, is crucial for the transformation and development of higher vocational education as a type of education, to promote the promotion of the healthcare industry, and to improve the training quality of medical technical talents [3].

2.1. Important Guarantee for the Transformation and Development of Higher Vocational Colleges

The development mode of higher vocational colleges has changed from the expansion of quantity and scale to the enhancement of connotation, and the professional development has changed from seeking "more" to seeking "quality". The "three education" reform takes effective measures from teachers, textbooks, teaching methods and other aspects, carries out all-round reform, and gets through the "last mile" of vocational education, which is an important path for the transformation of specialty groups in higher vocational colleges.

2.2. Important Starting Point for Improving the Level of the Healthcare Industry

Medical higher vocational colleges should strengthen the construction of high-level specialty groups, improve the suitability of regional medical and health development, actively connect the industrial chain and innovation chain, integrate into the new requirements, new formats and new technologies of regional medical and health development, accelerate the transformation of traditional education and teaching models. Based on the needs of vocational education development, they should also promote the reform of "three education", deeply implement the integration of production and education, strengthen the school-enterprise cooperation, accurately connect the development of large health industry and regional medical health, and provide continuous impetus for the development of medical vocational education.

2.3. Important Way to Build a High-Quality and Comprehensive Medical and Health Talent Team

The reform of "three education" runs through the whole process of talent training. Based on solving the

problems of "who will teach", "what to teach" and "how to teach" in higher vocational education, it determines the quality of education and teaching in higher vocational colleges. It is an important way to build a high-quality and comprehensive medical and health talent team to carry out the "three education" reform in the specialty groups of medical vocational colleges, take students as the center, employment as the guide, start from the cultivation of students' comprehensive development of morality, intelligence, physical education, art, and labor, strengthen the cultivation of students' professional core abilities, improve their innovation awareness, and improve the quality of employment.

3. PRACTICAL PROBLEMS IN THE CONSTRUCTION OF SPECIALTY GROUPS IN HIGHER VOCATIONAL COLLEGES

3.1. Construction of Specialty Groups Lacks Optimization and Adjustment; Industrial Adaptability Is Poor

The industrial cluster can promote the specialized division of labor and the convergence of innovative resources. It is an important path for China to build a manufacturing power and promote the industry to the middle and high end of the value chain. Development of specialty clusters can effectively respond to the demand for development of the industrial chain for high-quality compound technical and skilled personnel, and has become an inevitable choice for professional development of vocational colleges [4].

First of all, when building specialty groups, some colleges and universities do not consider the characteristics of industrial clusters and job distribution, but take their own professional settings as the premise, and combine seemingly relevant majors into specialty groups, which loses the significance of specialty group formation. Secondly, the nature of serving the society determines that the structure of specialty groups in vocational colleges must adapt to the development of regional economic structure. Therefore, the establishment of specialty groups is not a once and for all thing. It is necessary to adhere to the principle of dynamic management, and make timely structural adjustments to the specialty groups in terms of industrial development, market demand, talent quality, etc., to add new specialties or eliminate specialties [5]. The fact is that the dynamic adjustment mechanism for construction of specialty groups in most colleges and universities is still vacant.

3.2. Construction of Specialty Groups Lacks Overall Management; Integration and Allocation of Resources Is Not Ideal

The foundation of specialty group construction is the integration and allocation of resources of each specialty within the group. The key to specialty group construction is to allocate resources and share resources according to the goal of specialty group construction in order to achieve the goal of coordinated development of specialty groups.

In fact, some colleges and universities still stay on the original management mode of secondary colleges. If there are specialty groups composed of secondary colleges, they will build their own, and only summarize the construction results when applying for or checking the project, without realizing the integration and optimal allocation of resources. Some colleges and universities have broken the original secondary college structure and restructured the secondary college according to the logic of the specialty groups, but they still follow the management mode of the secondary college in the past to manage all majors in the specialty groups. The teaching and research office is still arranged according to the specialty, the "double qualified" teaching team is still organized according to the specialty, and the talent training plan is still written according to the specialty. There is little difference between the framework and content of the original talent training plan. Only the basic courses are group shared courses, and the professional basic courses and professional core courses within the specialty groups cannot be mutually selected. The resource allocation among specialty groups is not balanced, the degree of resource utilization and sharing is low, and there is no substantial difference from the original simple specialty construction.

3.3. Professional Group Construction Lacks Evaluation and Inspection; Feedback of Construction Effect Is Not Timely

The high quality of specialty group construction is not only the logical starting point of specialty cluster construction, but also the ultimate goal of specialty group concentration advantage. Therefore, it is particularly important to monitor the process of specialty group construction and evaluate the results. Process monitoring is to fully understand the overall process of specialty group construction, benchmark the construction objectives, correct problems in the process, and effectively promote the construction of specialty groups. The result evaluation is to verify whether the construction goal of the specialty group is

achieved and whether the construction effect is significant within a construction cycle, summarize and refine the construction experience, and provide experience guidance for the next construction round.

However, at present, many higher vocational colleges lack specialty group performance evaluation methods, special assessment and evaluation institutions, evaluation index systems of specialty groups, and timely monitoring and evaluation of the completion of construction tasks, the realization of landmark achievements, and quantity and quality of capital use.

4. "THREE EDUCATION" REFORM PATH OF SPECIALTY GROUPS IN MEDICAL HIGHER VOCATIONAL COLLEGES

4.1. Building a "Pyramid" Type Teaching Team and Consolidating the Foundation of "Three Education" Reform

Teachers are the primary theme of the "three education" reform in higher vocational education, and they are in the basic and core position in the "three education" reform. In view of the shortage of professional teachers, the small proportion of "double qualified" teachers, the imbalance of teacher training, and the shortage of teachers in the industry, which are prevalent in most medical vocational colleges, the reform of teachers should be based on the actual situation of the school, control the "entrance", "training" and "evaluation", and create a high-level double qualified team with sufficient number, professional and part-time combination, and reasonable structure [6]. It is necessary to deepen the reform of teacher appointment system, strictly control the "entrance" of teachers, and meet the teaching needs of high-level specialty groups in quantity, as well as to introduce medical personnel with rich clinical experience to participate in teaching, and to build a high-level team of part-time teachers. To establish a teacher training mechanism, the schools should build a platform for teachers' ability training and exercise, normalize and institutionalize teacher training, conduct regular evaluation and assessment, and supervise and evaluate the training effect. Relying on the advantages of school-enterprise cooperation and collectivization of vocational education, teachers and medical staff jointly carry out education, teaching and scientific research by means of establishing famous doctors (teachers) studios, in order to improve teachers' scientific research innovation and practical ability, and consolidate the "double qualified" teaching team in terms of quality. The schools can establish an all-round teacher assessment

system, set up a scientific teacher assessment guidance, and regularly assess them, in order to promote the overall improvement of teachers' ability. The structure of teachers presents a "pyramid" type of small up and big down.

4.2. Reorganizing the "Platform + Module" Curriculum System and Creating Multi-Dimensional Teaching Materials

The construction of high-level specialty groups of medicine should correspond to the new trends in the field of medical health, determine the students' ability needs with the new formats of the medical and health industry and new requirements of post development, adhere to the three driving forces of clinical, technical and innovation, and reconstruct the curriculum system of specialty groups [7]. It is necessary to focus on the training objectives and specifications of specialty group talents, optimize the curriculum in the curriculum system, face the real clinical environment, take projects or tasks as logic, integrate the AI+ concept, implement the AI+ transformation project, and cultivate students' professional competence and sustainable development ability. It is also necessary to deepen school-enterprise cooperation and integration of production and education, optimize and reorganize the curriculum system of the specialty groups on the basis of in-depth research, break the traditional "compulsory + elective" curriculum system, break the original "specialty A + specialty B" curriculum structure within the group, and build the "platform + module" curriculum system of the specialty groups according to the standards and requirements of the corresponding post core ability of the specialty within the specialty groups and the students' sustainable development ability.

Focusing on the real clinical environment, schools can reform the implementation methods of professional courses such as ideological and political education and online and offline mixing, and carry out curriculum structure reforms such as modular and project-based professional courses. There is a need to integrate ideological and political education into the whole process of professional teaching, highlight practical education, build "comprehensive training project", "pre job training" and other comprehensive practical teaching projects similar to real clinical practice, create an immersive practical training teaching environment, and improve the effect of practical teaching. There is also a necessity to encourage the professionals in the group to cooperate with high-quality technology enterprises to develop vocational skill grade certificates, actively carry out the pilot project of the 1+X certificate system,

organically integrate the contents of vocational skill grade certificates linked with post capabilities into the teaching of professional courses, and effectively promote the organic connection between "1" and "X". The schools need to adhere to the principle of promoting teaching, learning, reform and construction through competitions, integrate the content of skills competitions into the teaching content of professional courses, effectively improve the technical skills of students, and truly realize the deep and organic integration of courses, posts, certificates and competitions.

Textbooks are the embodiment of curriculum standards, the solution to the problem of what to teach in vocational education, and the important way to update teaching content, promote teaching reform, and improve the quality of personnel training. As an important presentation form of teaching content, the medical textbooks in higher vocational colleges still have some problems, such as outdated content, single form, rigid compilation system, emphasizing theory over practice, etc. [8]. The reform of teaching materials in medical vocational colleges should be based on the national unified standards, based on the learning and school conditions, scientifically formulate and implement the teaching material selection plan, give play to the role of the teaching material selection committee, improve the teaching material selection mechanism, ensure the quality of teaching materials, and strengthen the construction of high-quality teaching material system. The schools should also integrate Internet resources, optimize the construction of teaching materials by means of informatization, and create online three-dimensional teaching materials; They need to compile pocket books, loose leaf and other new forms of teaching materials to enrich the presentation of teaching materials, promote the teaching material "school doctor co system" and keep up with the forefront of industry development. They also need to actively promote the construction project of high-quality teaching materials for medical higher vocational education, gather high-quality educational resources, increase investment in textbook compilation, and create a batch of high-quality and high-level teaching materials library for higher vocational education.

4.3. Deepening Reform of "Online + Offline" Teaching Mode and Establishing a Diversified Classroom Teaching Ecology

Teaching method is the means to implement teaching content in the classroom. To solve the problem of how to teach is the key to reform of "three educations". At present, most medical vocational colleges adopt the

traditional teacher-centered teaching mode, and the teaching method is simple, which is difficult to mobilize students' learning enthusiasm and initiative. The reform of teaching methods should adhere to the student-centered approach, teach students in accordance with their aptitude, implement ideological and political education and "three integrity" education, focus on online and offline classrooms in schools, supplemented by online classrooms, secondary classrooms, and hospital classrooms, create the "online + offline" teaching model [9], build a learning platform online using the internet, optimize traditional teaching models offline, and integrate multiple teaching models such as heuristic, case based, and discussion based. It is necessary to widely apply modern information technology, build a network independent learning platform, and use virtual simulation teaching for practical courses. At the same time, it is also necessary to deepen the "dual" education model of schools and enterprises, vigorously develop the modern apprenticeship system, follow the post practical training, and take the post practice to improve students' theoretical knowledge and technical skills, as well as carrying out the pilot project of "credit bank" to meet the personalized learning needs of students in the professional group.

4.4. Establishing a "Multi-Dimensional Grading" Evaluation System to Ensure the Effectiveness of the "Three Education" Reform

The establishment and improvement of the "three education" reform quality evaluation system and the improvement of the standard system are the solid guarantees for promoting the education and teaching reform in medical vocational colleges. The first is to innovate the dimensions of teacher evaluation. There will be a must to establish the dimensions of teachers' hierarchical evaluation of the teaching type characteristics of medical higher vocational education, classify the management of teachers' scientific research, teaching, scientific research and teaching posts, and develop a classification evaluation index system for different categories. Each category is subdivided into different levels, such as "excellent", "good", "medium" and "qualified". The evaluation results are directly linked to the appointment of teachers' posts and evaluation of professional titles. Second is to build a supervision mechanism for the selection and compilation of textbooks. According to the characteristics of medicine, it is a must to establish and improve the supervision system for the selection, compilation and review of teaching

materials, improve the teaching material management committee with multiple participation, give full play to its role, monitor the selection and compilation of teaching materials, highlight the leading and exemplary role of high-quality teaching materials, and let high-quality new forms of teaching materials be used in teaching [10]. Third is to promote the reform of multidimensional teaching evaluation. There will be a necessity to adhere to the basic concept of "student centered, output oriented, and continuous improvement", establish an evaluation system that combines diagnostic evaluation, formative evaluation, and summative evaluation, expand the multiple evaluation subjects that students, teachers, parents, and the industry participate in, improve the evaluation weight of pharmaceutical practical courses, and carry out multi-dimensional evaluation.

5. CONCLUSION

To sum up, medical higher vocational colleges shoulder the responsibility of cultivating skilled medical and health talents needed for social development. The "three education" reform should run through the whole process of talent training, and its degree and effect directly affect the quality of professional talent training, which is the top priority of the reform and development of vocational education in the new era. Pharmaceutical vocational colleges should fully understand the significance of the "three education" reform, find the problems in the construction of professional groups, actively carry out the "three education" reform, and contribute to the cultivation of high-quality and comprehensive medical and health personnel, and achieve the grand goal of "healthy China".

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