



Discussion on the Teaching Reform of Mining Surveying Course in -Take Xinjiang Engineering Institute as an Example

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Abstract: Based on the current development situation in Xinjiang, the professional curriculum construction and reform are discussed in combination with the current employment situation of college students. Focus on the connotation construction of new engineering subjects in Xinjiang engineering, this article fully exploits the rich moral education elements contained in the course construction, including making full use of multiple resources (especially the simulated mines of Xinjiang Engineering College) and teaching methods, connecting online and offline guided by the Xinjiang Engineering College Curriculum and Politics and the professional market of mine surveying. By taking the integration of industry and education as a platform for educating people, the coordinated development of mine surveying teaching and the moral, physical, mental and physical education of college students will be realized.

Keywords: Curriculum Thinking; Mine Surveying; Development of Moral Education; Teaching Reform

1. Introduction

At present, with the transformation of the international form and the adjustment of the nationally strategic economic structure, the employment of college students in China is facing new problems and challenges. The rapid development of the economy has higher requirements for application-oriented talents, and the transformation of the training model of most application-oriented undergraduates in China lags behind the speed of economic and social development, resulting in the derailment of college training and corporate demand [1-2]. In order for schools and enterprises to be highly integrated, it is necessary to change teaching ideas and improve the quality of teaching. Teaching quality is the core issue of teaching reform, development and improvement. It is the lifeline of colleges and universities which should be teaching-oriented and employment-oriented and the inevitable choice of establishing a school based on quality [3-4]. The surveying and mapping engineering major of our school has the characteristics of mining. In order to improve the practical ability and employment opportunities of our students, the school sets up the course of "mine surveying" as one of our school's special courses. "Mine Surveying" has always been one of the main courses of surveying and mapping engineering. In recent years, with the continuous emergence of new technologies and new methods in the field of mine surveying, the amount and content of teaching information have been increasing, and the courses of mine surveying have also been continuously optimized. The teaching methods are becoming more mature and the teaching objectives are more clear. Mine surveying is the design and mapping of underground tunnels, which is much more complicated than conventional ground surveying in terms of observation conditions and application methods. The traditional mine surveying course adopts the "indoctrination" teaching method. This teaching method is not conducive to students' understanding and mastering of knowledge, and satisfactory teaching results cannot be obtained. In addition, the number of teaching hours of the professional courses of mine surveying is also continuously decreasing. In order to solve this contradiction, only by constructing a new mine survey teaching model, forming a complete mine survey teaching system, optimizing the combination of teaching content and teaching links, and using modern teaching methods to reform traditional teaching methods can we continuously improve the quality and effectiveness of teaching [5].

2. Course construction ideas

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Curriculum construction is very similar in different situations and under different backgrounds. This poses both challenges and opportunities for curriculum construction. It's essential to better meet the challenge and stay in an invincible position can to continue to think and innovate, keep up with the pace of the times, keep up with the professional market, and constantly improve the quality of curriculum construction and the level of talent team construction, in order to achieve the goal of talent training.

At present, it is required to eliminate useless courses and create gold courses. Under the new situation, the course construction ideas are as follows:

(1) Change the concept, take students as the center, stimulate students' interest in learning, enhance students' sense of responsibility, be market-oriented, establish an equal and friendly relationship between teachers and students, strengthen patriotism education, improve students' professional qualities, and abide by professional ethics;

(2) Optimize the teaching content, pay attention to the selection of teaching materials, and use a variety of teaching methods in the teaching process to flexibly and cross-use, to ensure that the students fully master the knowledge they have learned;

(3) Optimize practice teaching, practice content is close to the actual production, optimize the experimental group, step grouping, pay attention to the students' actual participation, consciousness, teamwork awareness, etc., focus on ability training, improve the assessment method;

(4) Strengthen the construction of the faculty, improve the overall quality of teachers, complete more dual-teacher teachers, build a school-enterprise cooperation platform, and achieve the mutual benefit between schools and enterprises as much as possible. For application purposes, integrate new surveying and mapping technologies into the curriculum system.

3. Contents and methods of curriculum reform

3.1 Improve student professionalism

Incorporate the ideological and political elements into daily teaching, and use the outstanding achievements made by the world since the founding of New China as materials to realize the complementarity of the teaching of mine surveying and the moral education of college students; Culture education helps students to improve their overall quality. The aim is not only to impart professional knowledge, but also to cultivate students' ideological quality, make them loving and dedicating people, and cultivate good professional qualities of students.

3.2 Optimize the teaching content to ensure that the students have a comprehensive and in-depth grasp of knowledge

Optimize the teaching content, focus on the same and pay attention to the differences, remove the useless class, create the gold class, and select representative and typical teaching content, so that students can learn through the process. Refine the specific content of each class into knowledge and ability modules, and incorporate them into the project to stimulate students' enthusiasm and initiative. Increase the opportunities for students to practice, highlight the key knowledge of mine surveying, increase the amount of work under the effect of basic theory, and arrange some highly operable teaching content. By arranging homework, tasks, course preview content and self-learning related knowledge on the MOOC network and quality courses online, we can quantify the achievements according to the amount of students' learning.

3.3 Focus on students, pay attention to the selection of teaching materials

Mine surveying focuses on the characteristics of practice. The selection of teaching materials should focus on the cultivation of students' hands-on ability, so that students are familiar with and master the various skills in mine production. Through the teaching of basic concepts, theoretical knowledge and surveying and mapping methods, it helps students to understand the engineering problems in actual mine surveying, improve students' ability to analyze problems, solve problems and innovate independently, and meet the requirements of students to solve complex engineering problems. Classroom teaching focuses on cultivating students' thinking methods, and practical teaching enables students to acquire surveying and mapping skills and meet application needs.

3.4 Process-oriented, optimizing practical teaching and improving assessment mode

In the course teaching, teachers should establish an equal friendship with students. In practical teaching, the instructor should make a comprehensive evaluation based on the students' classroom attendance, the initiative to participate in internships, students' instrument operation capabilities, the design of the penetrating plan, and practical results. Students are required to actively experiment, and after careful collaboration to complete the experiment,

independently summarize the experience of the experiment, independently prepare an experiment report, and implement the learning from each experiment. According to the feedback of each stage, the teaching is summarized, reflected, and optimized, and remedial measures are formulated in time for the problems found. Organically combine teaching and learning, and solidify the knowledge learned to achieve the expected teaching purpose. In order to comprehensively test the students' mastery of theoretical knowledge and the level of instrument operation skills, teachers need to improve the current assessment model and highlight the process assessment as a basis for evaluating students in the future. In the teaching of mine surveying, teachers should make students be good at finding problems and asking questions, and constantly practice, perfect and improve surveying and mapping skills, and be able to analyze and solve problems independently. Only when teachers and students share the same spirit and combine teaching, learning, and examination can the teaching of mine surveying be more effective.

3.5 For the purpose of application, integration of new surveying and mapping technologies

The content of mine surveying involves multiple research fields such as mathematical modeling, deduction, and calculation methods. Combining cutting-edge mine survey research results, the course content is considered and designed, classroom teaching methods are innovative, and multi-dimensional teaching methods (multimedia courseware, flipped classrooms, design experiments, etc.). In the course teaching, combined with computer simulation technology to carry out visual teaching, and gradually develop new forms of course teaching such as MOOC, online and offline collaboration, so that students can experience the real underground surveying and mapping environment, and help students scientifically recognize the background of mine surveying engineering applications. At the same time, new technologies such as tilt drone photogrammetry and 3D laser scanning are used in mine surveys. Through the application of new surveying and mapping technology, classroom teaching has been transformed from lecture learning to teacher-student discussion and learning, which can activate the classroom atmosphere and achieve the expected teaching results, so that teachers can realize that discussing and communicating with students is also a kind of learning. Some creative ideas of students Engaging in scientific research also have a role in promoting, and in the process of mutual communication between teachers and students, "teaching is achieved". Carry out the integration of production and education to educate people, and establish stable cooperation with many coal mining enterprises.

3.6 Strengthen the construction of teachers and improve the overall quality of teachers

The overall quality of teachers can be improved by participating in business training, scientific research work and production practice, updating the knowledge structure, improving scientific research capabilities, accumulating practical experience, improving own quality, and playing an active role in mine surveying teaching and teaching reform.

4. Conclusion

The teaching content is enriched and the course reform is realized through the use of digging ideological and political elements, optimizing teaching content, combining online and offline classes, adopting multiple teaching methods, using the school simulation mine as the main platform, and integrate the production and education. The development of new technologies, new directions, and new fields realizes the comprehensive development of talent cultivation.

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