

Research on Teaching Reform of New Energy Major Under the Background of College Students' Innovation and Entrepreneurship

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Abstract: With the change in social environment, the new energy industry has been undergoing rapid development, at the same time, the demand for new energy talents is increasing day by day. For higher education, how to train high-quality new energy talents has become a critical issue. Starting from the background of innovation and entrepreneurship, this paper discusses the significance of the new energy major teaching reform, analyzes the problems existing in the new energy major, and puts forward targeted teaching reform strategies to accumulate experiences for the training of new energy talents in colleges and universities.

Keywords: College students; Innovation and entrepreneurship; New energy major

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1. Introduction

Innovation is the first driving force to promote social development and is closely related to the destiny of the country. Among them, the improvement of talents' scientific and technological innovation ability can guarantee the implementation of the national development strategy. For higher education, innovation and entrepreneurship elements can be incorporated into professional teaching activities, and personnel training activities can be optimized, so as to build a complete innovation and entrepreneurship system.

2. Significance of teaching reform of new energy major in the context of innovation and entrepreneurship

First of all, the implementation of the new energy major teaching reform is conducive to the training of comprehensive disciplinary application talents. With the development of science and technology, each specialty in colleges and universities is gradually refined, and enterprises put forward requirements for the compound ability of job seekers in the actual talent recruitment activities. In order to adapt to the current environment, colleges and universities carry out many interdisciplinary majors, of which the new energy major is an

important part. In the teaching activities of the new energy major, students not only gain knowledge on the traditional energy of petroleum, coal, etc., but also learn the unique new energy photovoltaic, wind power, and other system knowledge ^[1]. Therefore, in the teaching activities of new energy major, colleges and universities can strengthen the cooperation with electronic enterprises, carry out innovation in teaching activities, promote the improvement of teaching effectiveness, and cultivate high-quality professional talents.

Secondly, in the reform of the new energy major, colleges and universities pay attention to the improvement of practical training equipment and set up virtual laboratories. As the new energy includes wind energy, light energy, and other resources, the operation in the training activities of related resources is more complicated, it is easy to produce security risks in the operation process and repeated dismantling activities will also lead to waste of resources. Therefore, colleges and universities pay attention to the use of virtual technology, build a complete virtual laboratory, follow the principle of “using the minority to bring along the majority,” learn traditional energy, new energy, and other knowledge, provide operational opportunities for students to better discover problems and improve practical skills ^[2].

Lastly, the implementation of the reform of the new energy major helps to improve students’ energy utilization ability. There are differences between new energy and traditional energy in many aspects, among which there are obvious differences in energy consumption. The use of traditional energy easily produces greenhouse gases and causes environmental pollution. However, the use of new energy resources can greatly reduce environmental pollution and provide a guarantee for the sustainable development of society. Therefore, in the teaching reform of new energy major, colleges and universities focus on improving students’ ability to use energy, and analyze new energy from multiple angles, so as to carry out better practical teaching.

3. Existing problems in the teaching of new energy major in colleges and universities

Colleges and universities are important places to train high-quality talents. With the expansion of the new energy market, the industry has put forward higher requirements for talent literacy. In recent years, the concept of innovation and entrepreneurship has been promoted in colleges and universities, which has promoted the improvement of the quality of higher education and guaranteed the all-round development of students. However, some colleges and universities lack the cognition of the idea of innovation and entrepreneurship, and the actual teaching concept is relatively backward, resulting in teaching problems. For example, the teaching method adopted by the new energy major is relatively simple, which makes it difficult to meet the talent needs of the new energy industry. At the same time, the lack of contact between colleges and enterprises leads to the lack of connection between theory and practice teaching, and students lack practical operation skills, resulting in difficulty in adapting to the complex workplace after employment.

4. Teaching reform strategies of new energy major under the background of college students’ innovation and entrepreneurship

4.1. Optimizing teaching objectives and integrating innovative elements

The teaching objectives are indicated in the teaching activities of the new energy major, indicating the direction of teaching and affecting the teaching process. The integration of the idea of innovation and entrepreneurship is conducive to the transformation of teaching ideas and the construction of a perfect teaching system, among which the most remarkable feature is innovation. In the optimization of professional teaching objectives, teachers need to understand the actual situation of students and promote the improvement of their innovation literacy according to their professional needs. In the new energy teaching activities, the integration of

innovative and entrepreneurial elements is conducive to the improvement of students' professional, practical, and innovative abilities ^[3]. The teaching content of the new energy major is guided by the teaching objectives and the needs of enterprises, and its content is novel and practical. In the current new energy major in colleges and universities, the pertinence of the major is poor as the teaching content involves a lot of traditional energy content. Therefore, colleges and universities can clarify the teaching objectives, pay attention to the innovation of course content, and cultivate students' relevant abilities and ensure the improvement of their comprehensive literacy through the integration of innovation and entrepreneurship elements. In the actual teaching activities of the new energy major, teachers need to sort out the course content and clarify the important and difficult teaching points, so as to adjust the teaching time reasonably ^[4].

4.2. Changing the teaching concept and improving the teaching system

Colleges and universities need to pay attention to the integration of new energy majors and innovation and entrepreneurship education, improve students' entrepreneurial enthusiasm, actively participate in the entrepreneurship of the new energy industry, and greatly reduce the difficulty of entrepreneurship major. In the development of talent training programs in colleges and universities, it is necessary to change the traditional mode of talent training, promote students' professional quality, and cultivate students' awareness of innovation and entrepreneurship, so as to adapt to the development of the current era and promote the improvement of their employment competitiveness. Therefore, in the teaching activities of the new energy major, teachers need to focus on the change of teaching concepts, the teaching of professional knowledge, and the integration of innovation and entrepreneurship elements with the new energy major. Through the development of professional education, students can realize the importance of innovation and gradually form a sense of self-employment. The development of the above activities will help students to improve their comprehensive literacy and gradually become compound talents who meet the needs of the new energy industry.

In addition, the new energy major in colleges and universities can take the country's dual-carbon development and the demand for talents in the new energy industry as guidance, integrate the resources inside and outside the school, build an innovation and entrepreneurship teaching system, pay attention to the implementation of practical training activities, and form a complete teaching process. In the new energy major, through the construction of an innovation and entrepreneurship teaching system, more application-oriented and innovative talents can be cultivated. Teachers can proceed from the actual situation of colleges and universities to innovate new energy courses and carry out better practical teaching. At the same time, they can promote the construction of practical training bases according to the needs of production and society ^[5,6]. At the same time, through the improvement of the practical training system, students can be encouraged to participate in new energy enterprises for internship activities, master more knowledge, and achieve the improvement of professional quality, so as to maintain a dominant position in the job market. In the practical teaching activities carried out by the new energy major, knowledge teaching and case analysis can be integrated, and field visits can be emphasized. Through teaching guidance activities, students can better analyze problems, master theoretical knowledge, and improve practical skills.

4.3. Innovating teaching methods and improving innovation and entrepreneurship ability

In the teaching activities of new energy major in colleges and universities, students' enthusiasm for knowledge exploration can be improved through the innovation of professional teaching methods and innovative and entrepreneurial ideas, so that they can gradually form a good sense of innovation and entrepreneurship. The specific methods of integrating innovative and entrepreneurial ideas into the classroom are as follows. Colleges

and universities can focus on enriching the breadth of students' knowledge and improving their innovation ability. In teaching practice, teachers can make innovations in teaching methods from multiple perspectives [7]. Through interactive teaching, teachers can have a deep understanding of students' situation, and integrate innovative and entrepreneurial elements more skillfully, so as to carry out corresponding teaching of new energy majors. First of all, through the application of network technology, teachers can collect relevant literature on new energy for students' reading convenience. In the explanation of new energy professional knowledge, teachers can divide students into different groups, so that students can master more professional knowledge, enrich their academic vision, and gradually develop a good spirit of innovation. Secondly, teachers can strengthen the use of simulation laboratories to promote the improvement of students' innovation ability. The major of new energy is rich in practice. Only by participating in relevant operations can students better understand the abstract knowledge, verify the theoretical analysis, and deepen the impression of the knowledge they have learned. Lastly, some courses in the teaching activities of the new energy major are more difficult, but the actual class hours are few [8-10]. Therefore, on the premise of carrying out necessary practical teaching, teachers should dig deeper into the teaching content, set up extracurricular roles, guide students to carry out practical verification, provide their learning enthusiasm, and ensure the improvement of their innovative literacy.

In addition, in the teaching activities of new energy majors, teachers can have competitions of innovation and entrepreneurship content, so that students can master professional skills and improve their innovation and innovation literacy. Colleges and universities can start from the background of Internet+ and carry out corresponding innovation and entrepreneurship competitions to guide students to learn new energy knowledge and deepen students' understanding of renewable energy. Through the improvement of relevant courses, a good connection between competition and professional learning can be achieved, the implementation of innovative projects can be promoted, and the quality of teaching can be improved.

4.4. Strengthening teacher training and building a double-qualified team

Colleges and universities can better promote the reform of new energy teaching through the strengthening of teacher training. Colleges and universities can encourage teachers to participate in training activities and provide policy support in teacher training links. Colleges and universities can optimize the mechanism of hiring teachers, invite enterprise engineers as external teachers to carry out communication activities with full-time teachers, and constantly enrich the professional ability of teachers, so as to better carry out teaching activities. Colleges and universities can also encourage teachers to participate in the practice of enterprises on a regular basis, so as to improve the professional quality of teachers and facilitate the construction of double-qualified teachers. In addition, through the construction of a practical teaching team, we can better introduce new energy technology and improve teachers' professional ability, so as to carry out diversified practical teaching activities.

4.5. Building a platform and base for industry-university-research innovation practice

In the context of innovation and entrepreneurship, colleges and universities can build platforms to promote the reform of new energy majors and improve students' innovation and teamwork. Through the construction of the teaching platform, colleges and universities fit in with the development law of the current information age [10]. At the same time, through the construction of a network practice platform and the application of information and simulation technology in the new energy major, students will be provided with a better practical teaching environment. In addition, through the construction of the simulation laboratory, students can be guided to carry out new energy resources training, improve their professional ability, and cultivate their innovative

and entrepreneurial thinking. Colleges and universities can strengthen the cooperation between schools and enterprises to build new energy training bases, so that students can have a broader vision and improve their enthusiasm for knowledge exploration. Based on school-enterprise cooperation and guided by actual production, we build a practical platform to improve the effectiveness of talent training.

4.6. Optimizing the evaluation system and carrying out comprehensive evaluation

In the new energy major teaching activities in colleges and universities, the teaching evaluation system has played an important role. Through the optimization of the evaluation system and the construction of a perfect teaching evaluation mechanism, teachers can objectively evaluate students' knowledge mastery, practical skills, and teamwork. At the same time, it can improve the evaluation of courses, build a good feedback and rectification mechanism, and implement the evaluation and feedback mechanism by strengthening the links between various teaching links, including teaching inspection, teaching support, and student experience, so as to better adopt students' opinions, constantly optimize the teaching of new energy majors, and promote the improvement of teaching quality ^[11]. In the actual teaching evaluation of new energy major, the practical teaching effect inside and outside the class can be evaluated, and the students' practice situation can be controlled, so as to innovate the related projects. At the same time, the practical course construction can be carried out according to the results of the investigation, to ensure the implementation of the evaluation system and to promote the improvement of teaching effectiveness.

In addition, in the current stage of the new energy major assessment, the existing assessment methods cannot meet the demand for talent, which is inconducive to the improvement of students' innovation and entrepreneurship ability. Therefore, colleges and universities need to pay attention to the change in professional assessment methods and have a deep understanding of teaching methods, so as to adjust the teaching plan, assess the students' learning and practice process, and deepen the understanding of students' situation ^[12-15]. Through the understanding of students' knowledge mastery, teachers can improve the proportion of practice assessment and adopt comprehensive evaluation, which not only helps students master relevant knowledge but also improves their enthusiasm for knowledge exploration and cultivates their innovative thinking.

5. Conclusion

To sum up, under the background of college students' innovation and entrepreneurship, the new energy major in colleges and universities has ushered in new opportunities and challenges for development. In order to better cope with the challenges and seize the opportunities, colleges and universities have implemented a series of teaching reform measures. It involves teaching objectives, teaching concepts teacher team construction, etc. The implementation of teaching reform can ensure the improvement of students' comprehensive literacy, build a good professional teaching system, create a good employment situation for students majoring in new energy, promote them to become compound talents, and provide a large number of high-quality talents for the development of new energy industry.

Disclosure statement

The author declares no conflict of interest.

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