

The Integration of Electrical and Mechanical Education and Innovation and Entrepreneurship Education



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Abstract: At present, China is in a period of modernization and development, and innovation and entrepreneurship have become the main trend of social development under the new situation of "mass entrepreneurship". At present, many institutions of higher education have taken innovation and entrepreneurship education as an important educational strategy for their own development, wanting to give their students a greater competitive advantage in the increasingly competitive market. Therefore, the integration of innovation and entrepreneurship education and electromechanical education is not only the inevitable trend of educational reform and development of higher education institutions in the new era, but also the inevitable result of the demand of society for modern and innovative talents, and the combination of the two is not only beneficial to enhance students' competitiveness in society but also can effectively implement students' employment quality.

Keywords: electromechanics; innovation and entrepreneurship; educational integration

In China, the implementation of modern education is still short, and there is still a certain gap compared with Western countries, and the concept of innovation and entrepreneurship education is only a few years old, and most of them are opened and practised in vocational schools, so it can be seen that the state does not pay attention to the process of innovation and entrepreneurship education to some extent, therefore, the progress of its opening and implementation is very slow. However, with the increasing demand for talent in society, the education sector is paying more and more attention to innovation and entrepreneurship education, so in recent years, all major institutions of higher education have put innovation and entrepreneurship education in an important position in education, and even set up independent institutions, and the teachers are much more qualified than before. Among various majors, electromechanical majors have greater

advantages in innovation and entrepreneurship because of their own professional characteristics, but how to integrate education and teaching of electromechanical majors with innovation and entrepreneurship education to improve students' professional skills and make them better adapt to the development of society is a problem that needs to be analyzed and solved in higher education institutions at this stage.

1. Existing problems in the process of integration of electromechanical education and innovation and entrepreneurship education

1.1 Weak awareness of innovation and entrepreneurship education in institutions

Since the emergence of innovation and entrepreneurship education is still short and lags behind the western developed countries to a large extent, it still belongs to the period of continuous exploration at this stage, which leads to the low degree of importance attached to it by colleges and

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universities, thus making the awareness of innovation and entrepreneurship education very weak in the actual education and teaching of colleges and universities (Li et al., 2021). Taking electromechanical majors as an example, some institutions do not include innovation and entrepreneurship education in their daily education and teaching, and the lack of understanding of innovation and entrepreneurship directly leads to the lack of sufficient teachers and the content of teaching cannot be optimized and perfected, which is simple and single. In the process of daily education, institutions still focus on the cultivation of professional skills, lacking the publicity and inculcation of the concept of innovation and entrepreneurship, and students' comprehensive quality cultivation is not given due attention. In addition, in the arrangement of daily professional courses, institutions usually treat innovation and entrepreneurship education as a guidance or elective course for students, so the development of innovation and entrepreneurship education lacks a good environment as support.

1.2 Lack of effective platform to practice the integration of innovation and entrepreneurship education with electromechanical majors

The construction of a practice platform for the integration of innovation and entrepreneurship education and electromechanical majors in higher education institutions is the key to the effective implementation of innovation and entrepreneurship education (Yuan, 2020), which is not only significant for the development of practice activities but also helps students improve their own quality, broaden their own development channels and enhance their own innovation and entrepreneurial ability. At present, many institutions of higher education have not really realized the scale construction of the practice platform after the integration of the two, and the practice platform that has been built also has great limitations, and the actual operation effect is difficult to reach expectations so that it is difficult to play the full role of the practical courses of innovation and entrepreneurship education, and the

role of improving the practical ability of students in institutions is also very limited.

1.3 Professional curriculum system and innovation and entrepreneurship education need to be further integrated

In the process of education and teaching in higher education institutions, the construction of a reasonable and scientific professional curriculum system is an important part of the implementation of innovation and entrepreneurship education. Therefore, if mechanical and electrical majors in higher education institutions want to effectively combine innovation and entrepreneurship education and ensure its smooth implementation, the institutions must pay more attention to the curriculum system after the integration of the two, add innovation and entrepreneurship education content to the curriculum of mechanical and electrical majors, and create a complete and scientific curriculum teaching system. However, in the actual education process, some institutions of higher education have not yet effectively implemented the integration of the two education curricula, which directly leads to the disconnection between the learning of professional knowledge and the cultivation of innovation and entrepreneurship literacy, making it difficult to truly combine the two, resulting in the separation of the two, which greatly hinders the development of innovative and entrepreneurial thinking of students.

1.4 Lack of sufficient teachers for innovation and entrepreneurship education

In the process of daily education and teaching in higher education institutions, the faculty strength of dual innovation education courses is very weak compared with the faculty strength of other majors and the support of institutions (Tang et al., 2018). On the one hand, because the implementation of the dual-innovation education course in China is still short, there are not many professional teachers and professional course contents, and the teachers of the dual-innovation education course are generally young teachers, who lack rich education and teaching experience to a certain extent; on the other hand, at

this stage, some of these institutions still have a low level of ideological and psychological recognition of the dual-innovation education course, which causes On the other hand, at this stage, some institutions still have a low level of ideological and psychological recognition of dual-innovation education courses, which makes it difficult to obtain rich practical experience because some dual-innovation education courses lack sufficient teaching funds as support and guarantee. Finally, the dual-innovation education courses originated from abroad, and after they were introduced to China, the instructors taught the advanced knowledge and theories from abroad without combining them with the actual situation in China, so the education and teaching knowledge do not match with the actual situation of students in institutions. In addition, the dual innovation education course also lacks a more complete assessment system, and the unsoundness and imperfection of its system lead to the lack of a perfect evaluation system for the dual innovation education course, which greatly hinders the institutions' perception of the teaching status of the dual innovation education course.

2. Measures to integrate electrical and mechanical professional education and innovation and entrepreneurship education

2.1 Integration of teaching philosophy

If higher education institutions want to implement educational changes and integrate innovation and entrepreneurship education with the professional education of institutions, it is an inevitable choice for them to change their own educational philosophy (Liao et al., 2018). Therefore, higher education institutions must pay more attention to the integration of innovation and entrepreneurship education with electromechanical professional education, make scientific analyses on the way of integration, measures to be taken in the process of integration and the direction of integration, and clarify The trend of education is clear. Therefore, institutions of higher education need to do the following two things: firstly, they need to remove the

disadvantages of traditional education which only focus on professional teaching; secondly, they need to establish the concept of innovation and entrepreneurship education, and study how to make the integration of mechanical and electrical professional education and innovation and entrepreneurship education more reasonable and scientific, and use the integration of theory to promote the reasonable integration of education mode. Therefore, it is necessary for institutions of higher education to make efforts and perseverance in integrating the education concept of electromechanics with that of innovation and entrepreneurship, and to mobilize all personnel to participate in the process, so as to provide strong support for the all-round development of students in institutions.

2.2 Integration of teaching practice

Teaching practice generally covers two aspects, one is theoretical teaching and the other is the cultivation of practical skills. Teaching practice is not only a key part of the curriculum in higher education institutions but also a more effective educational teaching method to help students enhance their innovative and entrepreneurial literacy (Liu, 2018). In addition, teaching practice is also an important way to strengthen the practical skills of students in institutions, which can further promote the all-around development of students in institutions. Therefore, institutions of higher education should be based on institutions' cultivation of students' innovative and entrepreneurial concepts, add students' professional knowledge, innovative consciousness and practical skills in teaching practice, and at the same time need to respect the main position of students in course learning, take the market demand as the guide of practical teaching, stimulate the innovative and entrepreneurial ability of students in institutions to the maximum extent, make them actively participate in the process of teaching practice, increase the students' The students' innovative and entrepreneurial ability and innovative and entrepreneurial concept are strengthened.

2.3 Integration of curriculum system

The degree of mastery of professional knowledge and skills of students in institutions is the support and foundation for the mutual integration of innovation and entrepreneurship education and electromechanical professional education. Therefore, using various channels to enhance the professional skills and knowledgeability of students in institutions is a strong guarantee for the effective realization of innovation and entrepreneurship education and electromechanical professional education (Liu, 2018). Based on this condition, higher education institutions need to further strengthen the research and analysis of the learning characteristics of electromechanical students and the learning characteristics of students in institutions, adapt to the development of the times, and design a scientific and targeted curriculum system based on the market demand for talents, which should not only cover the content of the curriculum of electromechanical majors but also include the content of knowledge related to innovation and entrepreneurship education, as well as other relevant complementary courses.

2.4 Integration of training programs

In the new era, the talent cultivation mode of electromechanical majors is being broadened. Based on the existing professional knowledge, professional ability and professional cultivation, institutions of higher education should further enhance the importance of cultivating students' own innovation consciousness, so as to improve students' theoretical knowledge, practical ability and innovation ability, and cultivate high-quality complex professional talents for modern society. At the same time, this integration mode updates the concept of talents in the society to a certain extent and helps to realize the teaching goal of innovation and entrepreneurship.

2.5 Integration of teachers' team

In the process of mutual integration of electromechanical professional education and innovation and entrepreneurship education, having a strong faculty is an important support for its process to keep moving forward and directly affects the education and teaching level of institutions (Kuang et al., 2018), so higher education institutions need to

focus on the following points: first, institutions should enhance the training of teachers and try to choose teachers with innovative thinking consciousness and excellent professional ability as teachers of electromechanical professional related. Therefore, institutions need to focus on the following points: firstly, institutions should enhance the training of teachers, try to select teachers with innovative thinking and professional ability to be teachers of innovation and entrepreneurship education, and use various ways to strengthen the knowledge reserve of teachers to enhance their professional skills knowledge of electromechanics and related innovation and entrepreneurship ability; secondly, institutions should regularly invite relevant experts or recruit successful people in innovation and entrepreneurship to the college for experience exchange, teach their successful experience, enhance the persuasive power, and motivate students to have more passion for entrepreneurship; thirdly, institutions need to clarify Third, higher education institutions need to clarify the development direction of teachers' team, and at the same time, they also need to continuously optimize and upgrade the team structure of teachers, so that the level of innovation and entrepreneurship education of electromechanical majors can be improved smoothly.

2.6 Build a platform to promote innovation and entrepreneurship education

For the construction of the practice platform after the mutual integration of electromechanical professional education and innovation and entrepreneurship education, institutions can take the R&D centre of electromechanics, the intelligent manufacturing education platform and the service platform of robotics as support, establish innovation and entrepreneurship organizations, build creator spaces, construct innovation and entrepreneurship education platforms, and integrate the cultivation process of entrepreneurial consciousness and innovative concepts of students in institutions into the education and teaching process of electromechanical majors (Wan, 2017). Improve the educational environment of innovation and

entrepreneurship, mobilize the enthusiasm of students in institutions, stimulate students' entrepreneurial enthusiasm, establish the practice base of innovation and entrepreneurship within the college, and lay the foundation for students to carry out practical activities of innovation and entrepreneurship.

3. Conclusion

In the new era, innovation and entrepreneurship education have become the main trend and trend of education change, and it is the inevitable way to effectively build an innovative country, and it is the support and guarantee to maintain the sustainable development of the national economy. Therefore, institutions of higher education must continue to explore and solve the problems encountered in the process of integration of the two, in line with the direction of the development of the times, to cultivate high-quality innovative professionals for society.

Conflict of Interest

The authors declare that they have no conflicts of interest to this work.

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