

The Motivation, Dilemma and Implementation Path of the Teaching Reform for “The Integration of Professional Education and Entrepreneurship Education” in Colleges and Universities

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Abstract

Compared to traditional professional education or entrepreneurship education, the new mode of “the integration of professional education and entrepreneurship education” (IPEEE) has unique advantages in cultivating innovative and entrepreneurial talents. The implementation of the IPEEE teaching reform, benefiting from the technical support provided by the digital economy, is a necessity for the adjustment of the innovation driven development strategy, and a practical choice to address the employment problem of graduates. Under the above background, this paper have discussed the present difficulties in the teaching reform of IPEEE in colleges and universities. To solve the above difficulties, this paper gives some innovative suggestion for implementing the IPEEE teaching reform successfully.

Keywords

The Integration of Professional Education and Entrepreneurship Education (IPEEE); Innovation Driven; Teaching evaluation.

1. Introduction

The IPEEE is a new talent cultivation mode that integrates innovation and entrepreneurship education with the traditional professional education. Whether it is relative to a single education mode of professional education or innovation and entrepreneurship, or relative to the dual system mode where professional education and innovation and entrepreneurship education coexist, the IPEEE education mode has its unique advantages in cultivating innovative and entrepreneurial talents. In recent years, with the changes in the world economic pattern and the adjustment of China's economic development strategy, cultivating students' innovative and entrepreneurial spirit, and thus cultivating a continuous stream of innovative and entrepreneurial talents who are willing to venture and create, has become an unshirkable responsibility and mission of China's higher education. Therefore, the IPEEE education mode has increasingly attracted attention from the education community. However, existing research has not yet explored why Chinese universities should implement the IPEEE education, and what are the reasons behind it? What are the difficulties in implementing the IPEEE education in colleges and universities, and how to resolve them. The answers to these questions will contribute to the smooth implementation of the IPEEE education reform in China's universities, and also help China cultivate innovative talents as soon as possible, thus is of important value to study.

2. The Motivation of Implementing the Teaching Reform of IPEEE in Colleges and Universities

The implementation of the IPEEE teaching reform in colleges and universities is not only a need for China's macroeconomic development strategy adjustment, but also a practical choice to solve the employment problem of graduates. At the same time, the development of the digital economy has also provided a practical foundation for the IPEEE teaching reform.

2.1. The IPEEE is the Need for the Strategic Adjustment of China's Innovation Driven Economic Development

For a long time, the teaching mode of colleges and universities in China has been organized and implemented based on the classification of disciplines. Professional education relies on disciplines and transmits systematic knowledge formed in the process of human society's understanding and transformation of nature to students through formal school education systems. Professional education is the result of knowledge production and division of labor (Liu, 2022), which has higher efficiency and advantages in the transfer of specialized knowledge and skills. At the beginning of China's reform and opening up, under the factor driven development strategy, economic growth was established on the basis of increasing the number of factor inputs. Therefore, quickly cultivating large-scale workers with specialized knowledge for economic and industrial development became the direct goal pursued by higher education. This determined that professional education was the optimal choice in that situation. As China enters into the stage of high-quality development, economic growth will shift from factor driven to innovation driven. Economic growth not only depends on the input quantity of human capital and other factors, but more importantly, it is necessary to further improve the quality of human capital, especially to enhance the innovative spirit, entrepreneurial awareness, and innovation and entrepreneurship ability of professional talents. Therefore, it is necessary to integrate innovation and entrepreneurship education into the traditional professional education and implement the IPEEE education. In addition, with the continuous deepening of human being's understanding of the world, the development of knowledge is showing a trend of de specialization, and the development of disciplines is also increasingly interdisciplinary and integrated. The integration of interdisciplinary knowledge constantly generates new knowledge, which promotes the accumulation of new knowledge and the replacement of old knowledge. Technological innovation based on new knowledge discovery is becoming increasingly complex. Innovative achievements often require interdisciplinary and cross departmental collaboration, and require repeated experimentation and trial & error, making innovation based on the single professional education more and more difficult. Therefore, being adapt to the shift of economic development strategy from factor driven to innovation driven. it is particularly important to integrate innovation and entrepreneurship education into traditional professional education, and improve the cross border resource integration ability, pressure resistance ability, team cooperation ability and adaptability of professionals while laying a solid professional foundation.

2.2. The Digital Economy Provides Technical Support for the IPEEE

Integrating professional education with innovation and entrepreneurship education involves carrying out practical activities for innovation and entrepreneurship education beyond traditional classroom teaching, which will occupy a large amount of time for classroom teaching. The penetration and widespread application of digital technology in the field of education has provided the possibility for the teaching reform of the IPEEE, which can effectively solve the conflict in class hour allocation between professional education and innovation and entrepreneurship education in the teaching reform of the IPEEE. Due to the fact that traditional professional education is a systematic education of expertise and professional skills, both

online and offline teaching can achieve similar teaching effects. Innovation and entrepreneurship education often requires teaching activities centered around projects, experimental and practical training tasks, or innovation and entrepreneurship practices. It usually requires the organization of interactive classroom teaching activities in the form of learning groups, such as discussion and exploration, or the organization of practical teaching activities such as innovation and entrepreneurship competitions and incubation in the form of teams. Due to the interaction among teachers and students, innovation and entrepreneurship education is more suitable for offline teaching scenarios. Therefore, with the empowerment of digital technology, the theoretical knowledge and content of memory in traditional professional education can be completed in online scenarios before the start of classroom teaching activities, while offline classrooms only carry out professional teaching activities that use professional knowledge to solve practical problems and innovative and entrepreneurial practical education activities. The emergence of online teaching platforms has greatly expanded the teaching space. It has created a new integrated online and offline teaching scene for the IPEEE and effectively extended the first classroom. So digital economy has provided strong technical support for the IPEEE.

2.3. IPEEE is a Realistic Choice to Address the Employment Problem of Graduates

In recent years, due to the profound adjustment of the world economy, the deepening and restructuring of the global value chain, and the adverse effects of global public health events, Chinese college graduates are facing a complex and severe employment situation. In 2021, the number of college graduates nationwide reached 9.09 million, with an increase of 0.35 million year-on-year. In 2022, the number of college graduates exceeded 10 million for the first time, reaching 10.76 million. To solve the problem of difficult employment for college graduates, on the one hand, it is necessary to improve the adaptability of college graduates' professional skills to the market demand. On the other hand, it is necessary to actively guide graduates to change their employment concepts, achieving a shift from job seeking to innovation and entrepreneurship, and improve their initiative in employment. Compared to professional education, innovation and entrepreneurship education generally revolves around real industrial and social issues through the collaboration of enterprise mentors and entrepreneurship mentors and is closely related to the real needs of the market and the real problems of the industry. Therefore, the integration of innovation and entrepreneurship education into professional education can ensure that professional education is market-oriented and is based on the forefront of industrial and disciplinary development, thus improving the adaptability of professional skills learned by students to the market demand of enterprises and reducing the probability of structural unemployment. In addition, the IPEEE, as well as the organization and implementation of some practical teaching activities for cultivating entrepreneurship, can greatly enhance students' innovation spirit, entrepreneurial awareness, and innovation and entrepreneurship ability while changing the traditional boring classroom teaching content. It also can stimulate students' entrepreneurial interest, and promote the transformation of employment and career selection concepts. Through innovation to drive entrepreneurship, and entrepreneurship to guide innovation, the IPEEE will effectively promote high-quality employment for college graduates.

3. The Dilemma of Implementing the Teaching Reform of the IPEEE in Colleges and Universities

3.1. The Initiative and Ability of Teachers to Implement the IPEEE Teaching Reform Need to Be Improved

Since the IPEEE involves many aspects of work, such as the restructuring of course teaching content, the restructuring of teaching methods, the switching of teaching platforms, and the transformation of teaching evaluation and assessment methods, it will have a significant impact on the original classroom teaching mode. The teaching reform of the IPEEE not only greatly increases the workload of professional teachers, but also puts forward higher requirements for their professional abilities. However, due to the current teaching evaluation and job performance-salary distribution system not taking into account the implicit labor and other workload undertaken by teachers for implementing teaching reforms, the enthusiasm and initiative of teachers in implementing the IPEEE teaching reform are not high. At the same time, due to the path dependence of the traditional professional teaching mode and the fact that most teachers of professional education have not received systematic training in innovation and entrepreneurship education, the ability of teachers to implement the IPEEE teaching reform is very low (Su, 2022). In addition, some professional teachers have many wrong ideas about the IPEEE. For example, they often unilaterally believe that innovation and entrepreneurship education is the responsibility of the school's employment guidance department, and students' innovation and entrepreneurship abilities can not be improved through school education. They argue that innovation and entrepreneurship education only needs to be carried out for students with innovative and entrepreneurial ideals, and it is not necessary to implement the IPEEE teaching reform among all students since this will drag down the overall teaching progress for professional curriculum. Due to the above wrong ideas, in general, teachers' enthusiasm for implementing the IPEEE teaching reform is low, and the progress of the IPEEE teaching reform is relatively slow.

3.2. Lack of Some Model Courses for the IPEEE

Courses are the carrier for the implementation of teaching activities, and any teaching reform must ultimately be implemented in the courses. The first step of the IPEEE teaching reform is to create a batch of some promotable and referable model courses for IPEEE. At present, many colleges and universities have set up general education curriculum modules for innovation and entrepreneurship education, such as Innovation and Entrepreneurship Fundamentals, Entrepreneurship Principles, and various innovation and entrepreneurship practice teaching modules at all levels, such as the China International "Internet plus" Undergraduate Innovation and Entrepreneurship Competition, and the National Undergraduate E-commerce "Innovation, Creativity and Entrepreneurship" Challenge. However, overall, universities currently lack model courses for the IPEEE. Innovation and entrepreneurship courses in most universities are clearly out of line with professional courses. Different teachers are responsible for the teaching of these two kinds of courses. Teachers from different majors are responsible for the professional courses while both counselors and teaching management personnel are responsible for the innovation and entrepreneurship courses. On the one hand, due to the lack of motivation for teaching reform among professional course teachers, and on the other hand, due to the lack of corresponding funding and institutional support from schools and education authorities, the construction of the IPEEE curriculum that can simultaneously improve professional accomplishment and innovation and entrepreneurship accomplishment is progressing slowly. The lack of the IPEEE model courses, as well as the separating teaching mode of professional courses and innovation and entrepreneurship courses, has obvious drawbacks. On the one hand, the knowledge learned in professional courses can not be applied

through innovation and entrepreneurship education practices at the same time of learning the professional courses, which is not conducive to the improvement of students' professional accomplishment. On the other hand, due to the lack of professional knowledge support and accumulation of disciplinary foundation, implementing innovation and entrepreneurship education solely will be something like the water without source and the trees without roots. To some extent, this teaching mode of innovation and entrepreneurship education has even become a training program for entrepreneurship, which of course is not conducive to the cultivation of students' innovative spirit and entrepreneurial ability.

3.3. The Teaching Evaluation Method is not Scientific

A scientific teaching evaluation and assessment mechanism is the baton that motivates teaching reform. Presently, colleges and universities have established a relatively systematic teaching evaluation system for professional education and entrepreneurship and innovation education, including multiple evaluation subjects such as teaching managers, peers, and students. They use various standards and indicators for rating teaching activities quantitatively. The results of quantitative grading have also become an important means of teaching management in colleges and universities, determining the evaluation and employment, reward and punishment, and performance-salary distribution of teachers (Zhao, 2023). Overall, there are still many unscientific aspects of the existing teaching evaluation methods. Firstly, the standards for teaching evaluation methods are too unified and lack personalized evaluation methods adapt to the characteristics of the course. The existing evaluation system generally establishes universal and unified evaluation standards from aspects such as teaching attitude, teaching organization and design, teaching methods, teaching content, and teaching effectiveness. However, due to differences in educational positioning, subject characteristics, and teaching objectives among different universities, disciplines, and even courses, the focus of teaching evaluation should vary. As for the IPEEE education, since the organization and implementation of the teaching activities for innovation and entrepreneurship in different majors are based on professional characteristics, it is obvious that the unified evaluation standards of the entire school is inappropriate. Secondly, teaching evaluation and monitoring are mainly concentrated in the first classroom, while there is a lack of teaching evaluation and monitoring for the second classroom for practical teaching. The teaching evaluation of the first classroom focuses on observing the teaching behavior of teachers, while there is a lack of evaluation of students' learning status and gains. For the IPEEE education, due to the integration of entrepreneurship and innovation education in professional courses, many teaching activities are often organized and implemented in the second classroom. Therefore, it is obvious that the existing evaluation methods, which focus on monitoring the teaching behavior of teachers in the first classroom, cannot reflect the overall teaching status. Thirdly, teaching evaluation attaches much more on results rather than processes. For example, the evaluation of the quality of innovation and entrepreneurship education has always been based on the level and degree of awards received by students in various competitions at all levels, or on whether students have established a company and its scale and profit level (Zhao, 2019). The focus of the IPEEE education is to cultivate students' innovative spirit, entrepreneurial awareness, and innovation and entrepreneurship abilities based on their majors. It aims to enhance students' comprehensive quality. Therefore, teaching evaluation based on the results of competition awards, or based on whether successfully operating an enterprise or not, clearly goes against the original intention and goal of the IPEEE teaching reform.

4. The Implementation Path for the Teaching Reform of the IPEEE in Colleges and Universities

4.1. Accelerating Institutional Construction So as to Enhance Teachers' Enthusiasm for Implementing the IPEEE Teaching Reform

Firstly, it is necessary to break away from the old system of teachers' career growth and promotion, which is based solely on academic qualifications and academic papers. Talents cultivation is the primary function of the four functions of colleges and universities, and it is the fundamental task of colleges and universities. Teaching is the basic means for talents cultivation. Therefore, it is necessary to restructure the personnel system, performance-salary distribution system, and teaching management and quality monitoring system of universities. Raise the teaching performance assessment to a level equivalent to or even higher than the assessment based on teachers' educational level or scientific research performance so as to fully stimulate teachers' enthusiasm for the IPEEE teaching reform. Secondly, it is necessary to improve the teaching supervision and evaluation mechanism, and build a teaching supervision team composed of high-level expert teams who are proficient in both the profession and teaching, and have practical experience in innovation and entrepreneurship. It is necessary to fully leverage the role of the teaching supervision team. It is also important to fully leverage the guidance role of the teaching supervision team in teaching young teachers while monitoring teaching through the teaching supervision system, and improve young teachers' ability to implement the IPEEE teaching reform. Thirdly, colleges and universities should improve teachers' workload accounting mechanism. Accounting for teachers' teaching workload is no longer limited to traditional classrooms. Develop detailed accounting rules for teaching workload, and recognize the workload of teachers' teaching reform and exploration, even if they are not yet mature, in order to fully stimulate their enthusiasm for teaching reform and innovation. For courses undergoing the IPEEE teaching reform, it is not only necessary to recognize the classroom teaching workload of teachers, but also important to recognize and motivate their social practice teaching and other work completed in the second classroom so as to fully respect the implicit labor of teachers in carrying out the IPEEE teaching reform.

4.2. Accelerating the Construction of Model Courses for the IPEEE

There are two approach to construct the IPEEE model courses and break down the situation of the separation between professional education and innovation and entrepreneurship education. On the one hand, we can select some professional courses closely connected with social production and life or with strong applicability and practicality. Then we can integrate the goals and elements of innovation and entrepreneurship education into the professional courses. On the other hand, we can integrate the goals and elements of professional education into the general and practical courses of innovation and entrepreneurship education. Through the two-way integration and interaction between professional education and entrepreneurship and innovation education, the professional foundation of entrepreneurship and innovation education is built while enhancing the depth of professional education. By this way, we can achieve the integration of "learning, using, and creating" and promote students to comprehensively enhance their innovation and entrepreneurship abilities along the path of "learning knowledge and methods - using knowledge and methods to solve practical problems - discovering new problems in practice - extracting new knowledge and methods". Specifically, in the teaching of professional courses, we can transfer some basic and relatively easy knowledge and content to the online teaching platforms such as Chaoxing Xuexitong, Wisdom Tree, and Tencent Classroom for students to learn independently. The more abstract knowledge, practical teaching activities, and the application of the knowledge can be finished in offline classrooms. Teachers should innovate teaching methods, create problem scenarios,

carry out group discussions and experimental operations, and other teaching activities, in order to improve the teaching depth and participation of students in professional classrooms, and enhance their ability to analyze and solve problems. At the same time, for each knowledge theme of the professional education, we should explore its innovation and entrepreneurship elements and extend through different kinds of teaching method for innovation and entrepreneurship education, such as innovation & entrepreneurship cases study, entrepreneur interviews, etc. We should also guide students from the focus on the scientific attributes of knowledge to focus on the applied attributes of knowledge and inspire students to use innovative thinking and perspectives to examine their professional fields. Though the above efforts, we will stimulate students' innovative spirit, entrepreneurial awareness, and enthusiasm.

Integrating the goal and elements of professional education into the innovation and entrepreneurship education are to enhance students' professional accomplishment and avoid turning innovation and entrepreneurship education into pure entrepreneurship training in colleges and universities. Specifically, first of all, in the teaching of general innovation & entrepreneurship courses such as Principles of Innovation & Entrepreneurship and Foundation of Entrepreneurship, it is necessary to fully combine students' majors and organize the teaching activities by case studies. We can select some cases that are similar to students' major, such as entrepreneurs' cases, industrial cases and technological innovation cases. Through group discussions, debates, and other teaching methods, teachers and students can jointly analyze the successful experiences and lessons of enterprises, which will deepen students' understanding of the basic laws of innovation & entrepreneurship, and promote the integration of majors and innovation & entrepreneurship. Secondly, in the teaching activities such as innovation & entrepreneurship competitions, innovation & entrepreneurship training, and the practical innovation & entrepreneurship, innovation & entrepreneurship mentors should work together with professional mentors and use various practice platforms of innovation & entrepreneurship to deepen students' understanding and application of knowledge and skills acquired in professional courses. They should promote students to discover new professional and technical problems in practice, and view economic and social reality problems with professional thinking. If integrating innovation & entrepreneurship education into professional education is to improve students' problem-solving ability, then integrating professional education into innovation & entrepreneurship education is to improve students' problem-solving ability. Through the two-way interaction and integration of professional education and innovation & entrepreneurship education, and creating the IPEEE model courses, we will improve students' innovation & entrepreneurship accomplishment based on a solid professional foundation, and truly achieve the improvement of talent cultivation quality.

4.3. Establishing Scientific Teaching Evaluation Methods

The purpose of teaching evaluation is to motivate teachers to devote themselves to teaching and achieve teaching objectives. The ultimate goal of the IPEEE is to improve students' professional and entrepreneurial accomplishment, and improve the quality of talents cultivation. Teaching evaluation methods should be designed based on this as the starting point. The new teaching evaluation method that adapts to the IPEEE teaching reform should have the following characteristics. Firstly, the evaluation subject should include both internal and external members of the school. In other words, we should change the past teaching evaluation method which was only conducted by teaching management departments, peers, and students and take employers' satisfaction for the students as an important reference indicator for teachers' teaching evaluation. The improvement of students' comprehensive accomplishment pursued by the IPEEE teaching reform often needs to be reflected in specific job and entrepreneurial practices. Using employers' satisfaction as an important reference indicator for

teachers' teaching evaluation can stimulate teachers to improve the quality of teaching and talent cultivation through teaching reform and is good for achieve the goal of improving students' comprehensive accomplishment in practice. Secondly, it is necessary to establish a personalized teaching evaluation index system. Due to the differences in the nature of majors and courses, the IPEEE courses in different majors can not be evaluated by using unified standards across the entire college, school, or even the country. Therefore, it is very important to establish a detailed and segmented evaluation index system that is suitable for different subject, major, or course. Thirdly, we should establish a teaching evaluation method that cover both the first and second classrooms, rather than just focusing on offline classroom evaluation. Teaching evaluation should take into account the evaluation of the teaching process, rather than just a result-oriented evaluation based on the number and level of various innovation & entrepreneurship competitions obtained, as well as the number and scale of enterprises founded by students. At the same time, teaching evaluation should focus on students' learning status while observing teachers' teaching behavior, and play a monitoring role in both teaching and learning aspects. Fourthly, it is necessary to establish a mechanism that combines the short-term and long-term evaluation. The existing teaching evaluation is generally conducted on a semester or academic year cycle. The goal of the IPEEE teaching reform is to enhance students' innovation and entrepreneurship literacy and abilities. These goals, especially the non-skill level goals such as innovation spirit and entrepreneurial awareness, can not be reflected within a teaching cycle, Therefore, the short-term evaluation mechanism implemented in academic years or semesters cannot objectively evaluate the effectiveness of teaching reform. The teaching effectiveness can be evaluated based on the actual performance in a period of 5-10 years or even longer after graduation when they go to work or start a business.

5. Conclusion

To sum up , the IPEEE education mode is very important for implementing China's innovation-driven strategy and improving the employment of graduates. However, At present, there are some difficulties in the teaching reform of IPEEE in colleges and universities, such as insufficient motivation for teachers to implement it, a lack of model courses for IPEEE, and unreasonable teaching evaluation methods. In order to solve the above difficulties, institutional innovation should be carried out to encourage teachers to implement the IPEEE teaching reform. The two-way interaction and integration of professional courses with innovation and entrepreneurship courses should be promoted so as to accelerate the construction of the IPEEE demonstration courses. Lastly, It is necessary to establish a teaching evaluation method that combines evaluation subject both inside and outside the campus, covers the first and second classrooms, combines teaching process and teaching results evaluation, monitors teachers' teaching and students' learning status, and combines short-term and long-term evaluations. Though these efforts, we can truly improve students' innovation & entrepreneurship accomplishment.

Acknowledgments

This work was supported by 2022 Anhui University of Finance & Economics Undergraduate Teaching Research Project: Research on the Path to Improve the Quality of Foreign Trade Talent Cultivation from the Perspective of the Integration of Professional Education and Entrepreneurship Education (Grant No. acjyyb2022031).

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