

Research on the Construction and Practice of the Theoretical System of “Double Innovation” Talent Training in Engineering Management Major

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Abstract:

New engineering provides a systematic scheme for engineering education reform. The national development strategy needs the support of “double innovation” talents, “innovation” applied talents is the meaning of new engineering talents; in turn, the improvement of students’ professional quality can better stimulate their spirit of entrepreneurship and innovation. In view of the old revolutionary base areas “double gen spirit” into the engineering professional personnel training practice of difficult, this paper will dig Baise local resources, the enterprise contains the spirit of Baise enterprise culture into the engineering management professional case teaching, relying on the new engineering management advanced equipment and network virtual platform, to show students stereo red culture resources, optimize the course cohesion and teaching design, build “double gen” talent training practice platform, give full play to the old revolutionary base areas in colleges and universities in engineering management under the background of new engineering “double” the advantage of talent training.

Keywords:

Engineering Management Major, Personnel Training, Innovation and Entrepreneurship Spirit

1. Introduction

Baise University, as an application-oriented university, teach people with the spirit of Baise. In 2019, the implementation of the “Baise University Baise Spirit cast Red Soul” three Complete “Education System Construction Management Measures”, all the teachers and students will make unremitting efforts to build a high-level application-oriented university with Baise spirit. Baise spirit is gradually deepened in teacher teaching, and as an application-oriented university, innovation and entrepreneurship is extremely important part of talent training. For engineering majors like engineering management, its professional and practical nature is relatively strong.

How to integrate the red gene into the spirit of mass entrepreneurship and innovation to better help the talent training of engineering professionals? There are many places worthy of discussing and refining in the practice process, at present, the following aspects need to be further discussed:

1.1. The curriculum system of red gene inheritance and innovation and entrepreneurship is not closely connected with the engineering management major

The innovation practice module of the engineering Management professional talent training program of Baise College includes 10 credits, including grade certificate, competition, thesis patent, practice report, scientific research innovation, and entrepreneurial practice. When students complete the innovation practice module, they mainly take professional competitions and obtain professional certificates. And talent training plan of innovation entrepreneurship education series need at least 1 credits, elective contains innovative thinking training for 16 hours. Engineering management professional innovation entrepreneurship courses for eight hours, red classic series at least 0.5 credits. Through research students complete red classic and innovation entrepreneurship courses, courses and professional cohesion is not close, practice content in the form of report, difficult to stimulate students innovative entrepreneurial enthusiasm. At the same time, engineering majors lack of case practice in entrepreneurship courses, which reduces the application scope of the courses to a certain extent. The integration of red gene into innovation and entrepreneurship spirit has not fully played its role in the cultivation of “double innovation” talents.

1.2. The integration of red genes in engineering management courses is poor

Engineering management courses in addition to the special red classic course and innovation entrepreneurship education, also need our professional course teachers in school shi “three full education” education more joint professional lesson plans, because the engineering management professional courses, less class. Course teaching knowledge, need to practice content, professional requirements, the red gene into the teaching content compared with other professional is difficult. At present, the correlation of integration is poor, how to more fit the professional needs teachers to think and adjust.

1.3 The “double innovation” talent training and practice platform needs to be further improved

Baise University provides a mass innovation space for college students and young entrepreneurs in Baise city, focusing on cultivating college students’ entrepreneurial awareness and improving their entrepreneurial ability. It provides a very good service platform for the students. However, engineering management students are not enthusiastic enough for innovation and entrepreneurship. In the new engineering context, the development of mass innovation capacity requires the application of technical knowledge in specific settings relevant to professional practice. The practice of mass entrepreneurship and innovation also needs to apply horizontal capabilities. Such as: autonomy, leadership in interdisciplinary teams, or interaction with others. In addition to the current talent training practice platform developing in the mass innovation space, we also need to use the Internet + and other ways. The virtual simulation experiment teaching project platform can be provided through VR virtual

technology, also need to further improve the practice platform, to improve students' entrepreneurial confidence and enthusiasm to better serve the students.

2. Construction of the Theoretical System of “Double Innovation” Talent Training in Engineering Management Major

Engineering management major is highly professional, with heavy academic tasks, and there are many analysis and calculation courses. How to construct the theoretical system from the following two aspects by deepening the cultivation of “double innovation and innovation” talents and closely connecting them with the curriculum.

2.1. Improve the connection between the innovation and entrepreneurship and the red gene curriculum and the professional curriculum system

At present, the engineering management major offers only one 8-hour course of innovation and entrepreneurship of engineering management major, and other professional general courses and elective courses. The red Inheritance course is also a separate elective course, which is independent and scattered, lacking a professional entrepreneurship and innovation knowledge system and training course structure. Based on this aspect, will be improved from three aspects: a. from engineering management professional course reform, improve the teaching design module, the professional courses in the Baise spirit and innovative entrepreneurial ideas, to class 3 minutes combined with engineering management professional case sharing, improve the training structure, solve the innovative entrepreneurship courses and red spirit of dispersion and not cohesion. b. Need to improve the talent training system. By investigating students completing the red Gene and Innovation and Entrepreneurship elective course, the disconnection between innovation and entrepreneurship courses, red gene courses and engineering management professional practice. Engineering management students lack an innovative and entrepreneurial spirit, students are not interested in learning, lack of attention to the curriculum. Therefore, the assessment method should be appropriately changed, and more professional knowledge should be integrated for assessment. The teaching group of engineering management should be set up, and assessed together combined with the content of innovation and entrepreneurship. Students only need to submit two materials as assessment materials of different modules of different courses, and closely connect the professional courses with the red gene. c. Adjust the courses in the talent training program, so that the curriculum system can be more coherent, and the courses related to innovation and entrepreneurship courses can be closely combined in the same semester for joint assessment. At the same time, the teaching plan between subjects should be appropriately adjusted to improve students' enthusiasm for innovation and entrepreneurship courses.

Taking the core course project management of engineering management major as an example, the theoretical system construction mode is conducted. This course mainly cultivates students' project management ability, and is the assessment core of first-level and second-level construction engineers. Therefore, students involve a wide range of contents in learning this course, and different modules can be used to implement the OBE practice outline. Take the form of project financing, for example, With PPP mode, BOT mode, BTO mode, BT mode and so on, the theoretical content of itself is relatively boring, the concept is difficult to understand, set up the modules in the form of financing, assignment to the students. Taking Baise local enterprises as the research object, investigate the initial financing mode and corporate culture of

each enterprise, students. These local companies, rooted in Baise, its corporate culture is integrated and the graphite spirit and other red genes. Students can understand the financing process of the business. At the same time, the enterprise founding deeds collected by the students are summarized, and the case database is established, and included in the final assessment content.

2.2. We will earnestly implement the General Secretary's instructions on "making good use of red resources, carrying forward the red tradition, and passing on the red gene"

Relying on Baise spirit, give full play to the advantages of Baise College, make a good classroom teaching carrier, and strive to promote the inheritance of red gene. In order to strengthen the integration of red gene into the teaching of engineering management major, the task of professional courses is heavy, and the curriculum needs not only the depth of levels, but also the breadth. In teaching, it is necessary to find the most suitable point to inherit the red gene, and to combine more cases with the spirit of Baise uprising, teachers should also receive more red training, participate in the practical activities of red culture, and accumulate enough materials, so that students can subtly carry forward the Baise spirit subtly while learning professional knowledge.

3. Practical Link of the "Double Innovation" Talent Training Theory System of Engineering Management Major

In view of the practice link of students, the school should give full play to the advantages of the school, build the red cultural resources patriotism base as the practice base, and improve the practice platform of "double innovation" talent training. The specific forms are as follows.

The Baise Uprising Memorial Park will be used as a practice base, with teaching methods such as situational, thematic and information technology, organizing teachers and students, carrying out school volunteer services, public welfare activities, memorial hall and other forms, to inherit the red gene.

For the purpose of professional needs, Baise University has an innovation and entrepreneurship practice platform. With the creative industrial parks, both practice bases and actively provide practice opportunities for students. However, due to the particularity of engineering management major, many practices need the support of network platforms. At present, the School of Civil Engineering of Baise University has two Sino-enterprise cooperative laboratories. There is a VR device, but the professional practice needs to satisfy the whole professional students to study and practice. Therefore, it is still necessary to improve the virtual simulation experiment teaching platform, let the students can practice in the computer room, you can also use VR virtual technology in practice. This practice link can stimulate the students' interest in learning. On the virtual platform, the whole process of construction organization technology can also complete the safety education. At the same time, more interdisciplinary knowledge is needed in innovation and entrepreneurship. Students should be encouraged to complete innovation and entrepreneurship projects together with students of different majors, and pay attention to unity and cooperation, and red genes should be integrated into the training of "mass innovation and innovation" talents.

Taking the architectural engineering CAD drawing course as an example, the practice link can also be well integrated into the “double-gen and creative” talents with red genes. OBE theory emphasizes student-centered teaching, so the practice link emphasizes on the basis of multiple intelligence theory. In 1983, Gardner proposed the theory of multiple intelligences in his book *The Structure of Intelligence: Multiple Intelligences Theory*. Chinese scholars have summarized the theory of multiple intelligence and concluded that the theory has the characteristics of diversity, equality, difference, context, development, culture and complementarity [1]. Scholars introduced the theory of multiple intelligence into our education. Initially, this theory was applied to different disciplines in different stages of higher education [2,3], and then scholars also applied this theory to vocational education [4], Zhu Saihong [5] also reflected on the issue of educational equity in university. The application of Multiple Intelligences Theory in different stages of education in China is conducive to the change of traditional educational concepts.

Therefore, under the background of new engineering, the teaching reform requires teachers to no longer teach in the traditional teaching form, but take the CAD practice process as an example to carry out teaching reform. a. In professional basic course teaching, the source of knowledge can be a variety of forms, such as MOOC, network practice platform, sand table, etc. In the form of class review + preview to help students to learn and consolidate the basic knowledge, class knowledge will deepen and expand, and adopt problem teaching mode, encourage students to understand and internalize knowledge expression, encourage students to visualization, humor understanding concept, stimulate students learning enthusiasm, encourage innovative thinking, understand the students learning process, understand the students different learning situation, through classroom communication for the basic knowledge to master the classroom progress. b. In the practice link of professional course teaching, organize the knowledge competition between students, which can also be in the form of group confrontation. In construction engineering CAD drawing course, can be selected graphics group, timing drawing, group, the last students finish time, and open the computer screen mode, playback drawing process, discussion between groups, eventually group confrontation, students discuss painting fast + draw good way drawing, drawing skills to achieve mastery through a comprehensive study, and encourage students to learn new drawing way or editing drawing language. CAD practice course can also let students design a villa, library, school, Baise uprising memorial, etc., to conform to the national standard, design requirements, drawing specification, can improve students' drawing ability, more can promote students to master comprehensive building knowledge, at the same time can improve students' patriotism and independent innovation ability.

4. Conclusions

Because it is difficult to integrate the red gene into the training of engineering majors, this paper integrates the enterprise culture containing the red gene into the teaching of engineering management major. Relying on the advanced equipment and network virtual platform of engineering management major under the new engineering background, it displays the red cultural resources to students, optimizes the course cohesion and teaching design, and integrates the “spirit of mass entrepreneurship and innovation” with the red gene into the course. In addition, to overcome the problems of innovation and entrepreneurship course and engineering course integration as well as course practice, this paper takes engineering project

management course as an example. The OBE concept sets up different modules to achieve the corresponding goals. The case is the learning process, and the “spirit of mass entrepreneurship and innovation” with the red gene is skillfully and accurately integrated into the course. At the same time in architectural engineering CAD course practice, for example, highlight the students as the main body, through the classroom task competition, task let students use CAD software design villa, library, home stay facility, etc., stimulate student interest, promote students to master comprehensive architectural knowledge, and can improve the students' patriotism and independent innovation ability.

Conflicts of Interest

The author declares that there is no conflict of interest regarding the publication of this article.

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