

Research on Improvement of Innovation and Entrepreneurship of University Students Based on Studio Cultivation with Tutorial System

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Abstract

According to the tutorial system being explored by the universities at home and abroad, by mastering the basic implications of the studio cultivation based on tutorial system, integrating the innovation and entrepreneurship of the university students and combining the Southwest Petroleum University (SWPU) experiences, the effect of the innovation and entrepreneurship cultivation of the university students based on tutorial system is analyzed and designed. The achievements of the studio cultivation based on tutorial system is introduced and the practice effect of the cultivation method analyzed from the aspects of current innovation and entrepreneurship of the university students, idea and process of the studio cultivation, the development of the major of industrial design, and the cultivation advantages.

Keywords

Tutorial system of undergraduate education, innovation and entrepreneurship education, talent cultivation mode.

1. Introduction

Since 1912 when the innovation and entrepreneurship education was proposed, it has been well recognized by the world. The innovation training system was well formed in the American colleges in the 1960s and 1970s, where the university focus on the improvement of the innovation and entrepreneurship thought and ability of the students from preschool to master educations. Based on the achievements of various countries, Japan has gradually formed a broad concept of entrepreneurship centered on "entrepreneurship cultivation". Through entrepreneurship theory and practice, students' awareness of entrepreneurship can be established [1]. In 1998, Tsinghua University held the first Tsinghua University Entrepreneurship plan competition, becoming the first university, which introduced the undergraduate entrepreneurship plan competition into Asia [2]. In 2002, entrepreneurship education in colleges and universities was officially launched in China. Nine colleges and universities, including Beijing University of Aeronautics and Astronautics, were identified by the Ministry of Education as pilot institutions to carry out entrepreneurship education [3]. Over the past decade, innovation and entrepreneurship education has gradually attracted the attention of colleges and universities. Under the active guidance of the relevant national departments and local governments, some colleges and universities have carried out beneficial exploration and practice. On August 1th, 2012, the general office of the Ministry of Education issued the notice on printing and distributing Basic Requirements for Entrepreneurship Education in Ordinary Undergraduate Schools (Trial), and officially proposed to carry out entrepreneurship education in universities [4]. In 2015, Premier Li Keqiang's government work report clearly proposed the innovation and entrepreneurship education concept of "public entrepreneurship and innovation" [5], and the innovation and entrepreneurship education of

domestic college students began develop rapidly. Taking the studio as a platform and carrier to operate the actual training mode of scientific research, and innovation and entrepreneurship projects, which is a powerful way to improve the innovation and entrepreneurship ability of college students [6].

2. Current Cultivation of Innovation and Entrepreneurship of University Students

Individual creativity can not directly impart to students, different from others like specific professional technology and operation skills. Individual creativity and entrepreneurial quality need to be cultivated through specific project research, process guidance, policy transmission and entrepreneurial practice simulation learning. The following problems exist in the development of innovation and entrepreneurship education in colleges and universities.

(1) Poor awareness of innovation and entrepreneurship. There are a few entrepreneurial ideas among college students. Some of them don't understand the real meaning of entrepreneurial projects. They think that entrepreneurship just means establishing registered companies, and they don't know the requirement of entrepreneurs' ability, which restricts the emergence of innovation awareness.

(2) Lagged education concept of innovation and entrepreneurship. The idea drives the development of innovation and entrepreneurship education. From the current trend of development, the idea of entrepreneurship and innovation education in colleges and universities generally lags behind. Some colleges and universities have obvious utilitarianism in education, which is more aimed at solving the problem of employment or obtaining excellent results in the competition, and deviates from the original intention of innovation and entrepreneurship education in colleges and universities.

(3) Lack of teachers in college innovation education. At present, the teachers engaged in innovation and entrepreneurship education is mainly composed of innovation and entrepreneurship center stuffs and counselors, so it is difficult to train students professionally and pertinently. The number and quality of teachers are the key factors that affect the development of innovation and entrepreneurship education in colleges and universities [7].

(4) Poor curriculum system of innovation education. The mass entrepreneurship and innovation education in China has just started in 2002. There are a few experiences for reference, resulting in the lack of theoretical guidance in school curriculum and the failure to form a scientific and reasonable curriculum system [8]. The lack of connection between innovation and entrepreneurship education and professional curriculum education usually brings a sense of strangeness and distance to the students, which is not conducive to the application of entrepreneurship knowledge in the process of entrepreneurship.

(5) Constraints from innovation practice education. From the current practice situation, colleges and universities will be limited by many factors, such as funds, facilities, teaching environment and so on, which makes it difficult to implement theory into practice. In fact, only part of students can access to the entrepreneurial practice, which presents the largest limitations. At the same time, some colleges and universities mainly participate in various competitions and innovation and entrepreneurship report conferences. It is difficult to carry out practical entrepreneurship training for most of the students who participate in the practice. The practice of mass entrepreneurship and innovation in colleges and universities has become an empty talk.

The studio is a comprehensive platform integrating teaching, scientific research, innovation and production activities. It is driven by real project tasks. Students participate in the studio work by undertaking project tasks. It is a teaching practice platform for mutual benefit among teachers, students and enterprises. With the continuous promotion of college enrollment

expansion, the teacher-student ratio in some colleges and universities is getting lower and lower, and the relationship between teachers and students is getting weaker and weaker. The undergraduate tutor system works to bond teachers and students, and enhance the professional sense of belongings between them. Combining the role of the tutor system and the studio platform, this paper explores an effective model to enhance the innovation and entrepreneurship training education of college students.

3. Establishment of Innovation and Entrepreneurship Cultivation Model based on Studio with Tutorial System

3.1. Overrule Thinking of Studio Cultivation based on Tutorial System

(1) Make clear the orientation of the innovation and entrepreneurship ability training system of the studio based on the tutorial system. Considering the different level of teachers and the distribution of disciplines, the main task of university teachers is to teach college students professional course knowledge, carry out various scientific research activities, and promote the overall development of college students in the spare time. The tutorials can register, organize or participate the activity voluntarily in this system. After selecting and training the tutors, the excellent studio team with excellent students can be established in the university. The teacher in charge can decide the size and members of the studio according to the factors such as the size of the project, the ability level of the members and their own conditions, cover the cost of the operation of the studio, and maintain normal operation of the studio team. The school provides offices and other supporting facilities, and at the same time bears the responsibility for the operation and supervision of the studio.

(2) Select profession and responsible tutors. The studio cultivation mode based on tutorial system relies on the teachers in the teaching and research offices as the core to build a team. In the selection of teachers, the highly professional, responsible and enthusiastic teachers should be considered first. In the meantime, the award and penalty system of the teachers should be guaranteed in the school and department to stimulate the teachers.

(3) Select the upbeat and well-rounded students with sufficient time. University students take the most important part in the studio. The tutors, as the guider of the students, mainly works on the improvement of the innovation and entrepreneurship thinking and abilities of students through the relevant project training in the studio. Examples set up can influence the others to improve themselves, promote students learn actively, participate into the competitions positively, and take the initiatives to concentrate on the scientific researches, which guarantee the quality of the student cultivation.

3.2. Design of the Studio Cultivation Mode based on Tutorial System

The cultivation mode based on tutorial system is shown in the figure below. By ideas exchanges between the selected teachers and students, and combining the cultivation of the excellent students in a major, valuable suggestions can be put forward for the major class transformations, development foreground made clear, and talent cultivation aims improved. By establishing the normal studio teams with tutors and students, students can be encouraged to study and think actively, which promotes the students in other majors to study and do researches positively. The studio team can be built spontaneously, students can participate into the innovation and entrepreneurship practice, which stimulates the formation of innovative and entrepreneurial thinking.

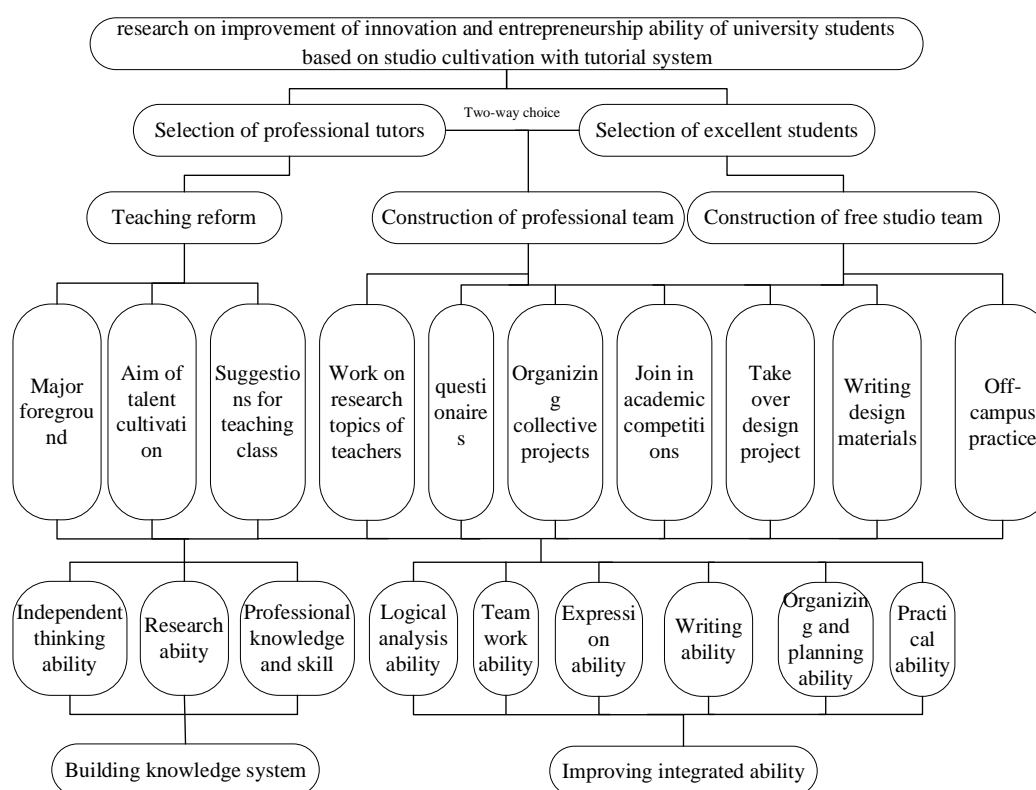


Figure 1. Improvement of cultivation mode of university student innovation and entrepreneurship practice based on studio with tutorial system

3.3. The Analysis of Innovative Ability of Studio Training Mode Based on Tutor System

Teachers and excellent students work together to promote the teaching reform of major courses. Under this training mode, excellent teachers in the professional teaching and research section have a good communication platform, establish a normalized connection between teachers and student representatives, facilitate students to feedback the problems existing in the education and teaching of teachers, examine the development prospect and talent training plan of the specialty from the perspective of students. Students can still propose suggestions to the teachers in the teaching and research section after graduation and during the school years, which promotes the improvement of major courses, reform of talent cultivation and development of the major.

The studio based on tutor system makes innovation and entrepreneurship topics project-oriented. In recent years, most colleges and universities in China have participated in Internet plus innovation and entrepreneurship competitions and innovative training programs to enhance students' innovative and entrepreneurial ability. However, due to the common problem of teacher-student ratio in domestic colleges and universities, many undergraduate students cannot get effective guidance when they participate in activities. The studio training mode based on the tutorial system can establish a student studio team with the tutor as the core. Through participating in innovative training projects with the team as the unit, excellent undergraduate students can be selected to improve their innovation and entrepreneurial ability with seniors guiding juniors.

Set an example for excellent students and cultivate their awareness of innovation and entrepreneurship. Through selecting a group of excellent students to be guided and trained in the extra-curriculum time, the example of excellent students can be set up. After the ability and innovation awareness of these students have reached a certain level, a group of students will

be called up in each grade of the major to create their own studios. In practice, the students' innovation and entrepreneurship awareness will be honed. Combining the collective innovation and entrepreneurship curriculum teaching of the major, the overall innovation and entrepreneurship education of the students in the major can be greatly enhanced.

3.4. Talent Cultivation Achievement of Studio Mode based on Tutor System

The major of industrial design in Southwest Petroleum University is the first major to try out the studio training mode based on the tutor system. Since its implementation, it has possessed 2 mature professional studio teams, and students spontaneously set up 4 free studio design teams. Up to now, about 40% of the students have participated in the extracurricular practice of professional studio teams, and 100% of students have working practice in the studio and rich project design experience during the school years. Below are the well-developed and mature studio:

Xinyu Design studio. Established in 2016, it has 1 professional tutor and 11 excellent students. The research interests are mainly human-machine interface, virtual simulation design, product design, brand planning, service design and user experience research. The team is led by Mr. Zhang, and students were awarded with iF Product Design Award of Germany, where winners take up 1% of the whole competitors.

Keni Design studio, established in 2019, has 1 professional teacher and 25 excellent students. The main research interests are mainly product appearance design, and furniture design etc. The team has been awarded by Design award of national advertising art competition for College Students etc.

Based on the investigation of the students of industrial design major in Southwest Petroleum University, it is learned that the extracurricular learning mode based on the tutor system plays an important role in enriching their extracurricular learning experience, improving their practical ability and increasing their social work experience. The main results of the studio training mode based on the tutorial system are as follows:

Learn knowledge and skills actively according to production needs. According to the interview results, the learning awareness of the students entering the studio team has been greatly improved. These students can self-study many knowledge and design skills according to the actual project needs of the company. These skills are usually acquired in working. The design works of the studio focus more on the practical application effect. From the perspective of the project content of the studio, the project of the studio is more close to the actual production and application. The product design is greatly influenced by the conditions of Party A's company. The design experience of the students more combines their creativity with the requirements of Party A, and accumulates lots of practical experience. Join tutor studio team to participate in subject competition. From the perspective of team management in the studio, the student teams are built with seniors helping juniors and professionals guiding novices. Under the continuous guidance of professional teachers, the enthusiasm of students to participate in all kinds of competitions is high.

4. The Advantages of Establishing A Studio based on Tutor System to Cultivate the Ability of Innovation and Entrepreneurship

4.1. Project Design and Practice Experience

According to the development of industrial design, the knowledge that students only learn in the traditional teaching is far from meeting the rapid development of social needs. The talent market requires that fresh graduates should have more perfect professional skills and practical skills. Therefore, college students need not only to learn the basic skills in the professional classroom, but also to use their spare time to participate in the project practice of professional

teachers, accumulate design experience in the process of completing the project design, so as to improve their comprehensive abilities. Based on the tutorial system, the training mode of improving the innovation and entrepreneurship ability of studio talents is to build a bridge for professional students to communicate with professional teachers, build a platform for professional students to practice, obtain project practice resources under the guidance of professional tutors, and organize students to use their spare time to establish a special training mode to participate based on project research, sharing, discussion, etc., and form an exclusive place for extracurricular practice, thinking and comprehensive ability improvement.

4.2. Improvement of Comprehensive Ability by Participating in Subject Competitions

Project practice is an important way for young students to improve their ability. To form a team based on studio mode is beneficial to participate in the discipline competition, increase the major knowledge, and improve students' innovative and entrepreneurship abilities. Through participating in professional competitions, students can independently decompose practical problems, propose scientific and reasonable solutions, and design excellent works with what they currently have. Participating in the subject competition is to further deepen the learning of professional knowledge, to supplement the knowledge content in the classroom, and to enhance the comprehensive strength of college students from various aspects.

4.3. Improving Knowledge System of Students in the Major

The most important purpose of the talent training mode based on the tutor system is to enable students to further the accumulation of professional knowledge, accumulate professional project experience and establish their own professional knowledge system through gradually participating in scientific research, practice, design projects and other processes in extra-curricular time under the guidance of professional instructors, so as to cultivate qualified talents for society of this new era. First of all, the professional tutors need to select excellent students in the major to carry out systematic promotion training, accumulate enough projects, topics and tasks through their own materials, so that students have sufficient opportunities to participate in practical exercise, and create an excellent professional practice platform. After digesting the professional knowledge in the classroom, students use the resources of the studio and the professional tutor to conduct further in-depth research in combination with their professional knowledge, form their own knowledge system and operation skills in practice, and finally improve their comprehensive strength in an all-round way. Based on the tutorial system, the training mode of training students' innovation and entrepreneurship ability mainly includes four aspects: building the practice platform of students' ability enhancement, cultivating students' habit of independent thinking and active learning, improving their practical ability of design projects, and improving students' comprehensive ability guided by ability improvement, so as to improve students' logical analysis ability, teamwork ability and language expression ability and practical ability to provide talented youngsters for society today.

5. Conclusion

Based on the practice of industrial design in Southwest Petroleum University, according to the studio mode based on tutor system at home and abroad, this paper introduces the overall thinking and process of the studio training mode based on the tutor system, and analyzes the mode to promote the innovation of students majoring in industrial design. Through in-depth research on the development scale and training effect of the studio mode based on tutor system in industrial design, the great advantages of the studio training mode based on tutor system in cultivating the innovation and entrepreneurship ability of college students are verified, which

provides a reference for the practice of innovation and entrepreneurship education in China. In the next step, we will further improve the training mode, develop the training potential, improve the training defects, constantly draw lessons from the past, make greater contributions to the talent training of colleges and universities, and cultivate new innovative and entrepreneurial talents for the development of socialism in the new era.

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