

# *Research on Training Mode of Environmental Design Majors in Application-oriented Undergraduate Universities under the Background of Entrepreneurship and Innovation Informatization*

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**Abstract:** Innovation and entrepreneurship education takes cultivating talents with basic qualities and pioneering personality as its core goal, covering students and groups at different stages of entrepreneurship. For college students majoring in environmental design, because of the relatively little connection between the curriculum and entrepreneurship and industry, it is particularly important to strengthen the cultivation of their entrepreneurial consciousness, innovative spirit and innovative entrepreneurial ability. Driven by the wave of information technology, the innovation and entrepreneurship education of environmental design major in Chinese universities is ushering in unprecedented development opportunities. In order to promote the in-depth development of the "double innovation" education of this major, the importance, content scope and existing problems of the combination of innovation and entrepreneurship education and professional skills training are studied, and feasible strategies are proposed accordingly to meet the needs of The Times.

## 1. Introduction

In this era of data processing and analysis, in-depth mining of clues, law exploration and accurate prediction of business opportunities have reached an unprecedented level, innovation and entrepreneurship education has provided a broad space and unlimited opportunities for environmental design majors in universities. In the context of the information age, students majoring in environmental design not only need to master solid design skills, but also need to have keen market insight and innovation and entrepreneurship. Through the combination of information technology, big data and innovation and entrepreneurship concepts, more comprehensive and

in-depth innovation and entrepreneurship education can be provided for students majoring in environmental design, helping them master the basic qualities and skills of innovation and entrepreneurship, and stimulating their innovative thinking and entrepreneurial enthusiasm.

## **2. Relevant theory and research significance**

With the continuous development of science and technology and economic globalization, talents in the new era are facing increasingly severe challenges. In today's society, the abilities required by college students are increasingly diverse. In order to cultivate high-end talents who meet the expectations of society, we should pay more attention to improving the comprehensive ability of students. Among them, "mass innovation" ability has become an important criterion for evaluating high-end talents<sup>[1]</sup>.

### **2.1 The meaning of entrepreneurship and innovation education**

The capacity of mass innovation and innovation includes two aspects: innovation ability and entrepreneurial ability. Innovation ability is based on the existing theoretical knowledge, combined with the new objective conditions and different backgrounds, the use of personal wisdom, to produce a new understanding of existing things, and develop new solutions, and then applied to social practice. It is a driving force for sustainable social development and an important force for global cultural and economic progress. In contrast, the concept of entrepreneurial ability arose late, but in recent years has gradually been widely recognized by the society. Entrepreneurial ability is mainly reflected in the use of personal wisdom, combined with social needs, to create new jobs or work content, so as to better serve the society.

The ability of "mass innovation" does not only require students to create new knowledge or open new enterprises, but also focuses on guiding students to actively respond to challenges through independent and in-depth thinking in an optimized teaching mode, and cultivating their practical ability, independent thinking and problem-solving ability. This process is the cornerstone of excellence and helps students excel in their future careers.

### **2.2 The significance of training environmental design talents under the background of mass entrepreneurship and innovation**

In modern society, informatization has swept many fields and become an important force to promote social progress. In this context, the field of education also needs to actively embrace information and keep pace with The Times to meet the challenges and needs of the new era. For our talents, the challenges and difficulties in the new situation are endless.

Informatization has promoted the deep integration of industries. Today, businesses and workplaces are no longer satisfied with a single product or service offering, but are striving to transform into a role of providing integrated services. This trend is increasingly significant in both the traditional primary industry, the secondary industry and the emerging service industry<sup>[2]</sup>. Therefore, environmental design talents not only need to master the professional knowledge and skills, but also need to have cross-field comprehensive ability to adapt to the diversified market demand.

In the era of globalization of information resources and network of data transmission, the importance of work efficiency has become increasingly apparent. In this era of rapid change and fierce competition, low work efficiency is easily replaced by efficient enterprises, and thus eliminated by the era. Therefore, for environmental design talents, improving work efficiency is not

only a skill requirement, but also a key ability for survival and development<sup>[3]</sup>. In this context, the integration of entrepreneurship and innovation education and information technology is particularly important in the training of environmental design talents. Mass innovation education can stimulate students' innovative spirit and entrepreneurial ability, making them stand out in the fierce market competition. The application of information technology can provide a broader learning and practice platform for environmental design talents, help them quickly master new knowledge and new skills, and improve their comprehensive quality. Therefore, strengthening the integration of mass innovation education and information technology is of far-reaching significance for training environmental design talents who meet the needs of the new era<sup>[4]</sup>.

### 3. Current situation of IT capacity training for mass entrepreneurship and innovation

At present, although some colleges and universities have recognized the importance of cultivating "mass innovation" ability and established corresponding teaching systems to enhance students' ability, such as the practical curriculum system for accounting majors and the commonsense classroom teaching mode for fine arts majors, the "mass innovation" ability training system for English majors is still not perfect. The efforts of most universities in this area are still inadequate.

#### 3.1 Research situation

In order to have a more comprehensive understanding of the current situation of "double innovation" ability training for students majoring in environmental design in Chinese universities, field visits were conducted and a lot of first-hand information was collected. Through conversations and questionnaires, we have conducted in-depth exchanges with teachers and students of many universities, and sorted out and analyzed the collected data in detail.

The survey results show that most of the environmental design students do not have a clear concept of "mass innovation" ability, and the environmental design teachers have a relatively limited understanding of this concept. Although some individual teachers have some understanding of this and intend to incorporate it into the teaching system, due to the overall teaching situation, teaching syllabus and hardware conditions, it is not common to effectively integrate the training of "mass innovation" ability into teaching.

In addition, when respondents learned about the concept of mass entrepreneurship and innovation, their responses varied. Among the respondents, only a minority (23%) expressed willingness to further understand and study mass entrepreneurship and innovation capabilities, while the majority preferred to maintain existing education methods or have reservations. Some respondents even believe that design learning is different from science and engineering, and there is no need to emphasize innovation and entrepreneurship. This reflects that Chinese learners and educators need to deepen their understanding of the capacity of mass entrepreneurship and innovation, and further improve their understanding of new challenges and problems faced in the context of informatization.

#### 3.2 Training status

Some colleges and universities have begun to build curriculum systems related to "mass innovation", such as design innovation practice courses and interdisciplinary entrepreneurship courses, in order to improve students' innovation and entrepreneurship ability, which means that more and more colleges and universities have begun to realize the importance of cultivating "mass

innovation" ability and try to integrate it into the teaching of environmental design major<sup>[5]</sup>.

On the whole, the environmental design profession still faces some challenges in the cultivation of the informatization ability of "mass innovation". On the one hand, some universities do not have a deep enough understanding of the ability of mass innovation and innovation, which makes it difficult to effectively integrate relevant content into actual teaching. On the other hand, due to the limitations of teaching resources, teachers and other aspects, some universities are unable to promote the training of "mass innovation" informatization ability.

At the same time, there is a certain disconnect between the teaching of environmental design and the market demand. Although graduates majoring in environmental design have a good prospect in the job market demand, the market generally reflects that students' professional and technical ability needs to be re-cultivated, their cognition of the industry is insufficient, and students' comprehensive ability is lacking. This reflects that in the teaching of environmental design major, universities have not been able to effectively cultivate students' comprehensive ability, especially the informatization ability of "mass innovation", so as to meet the needs of the market<sup>[6]</sup>. Although many colleges and universities have established practical training studios and centers, practical teaching is often limited to vocational skills operation and training, and lacks effective guidance for students' innovation and entrepreneurship ability. As a result, students often lack sufficient problem-solving ability when facing practical design innovation problems.

#### 4. Measures to integrate "double innovation" education and professional skill training for environmental design majors in colleges and universities under the background of informatization

At present, in the process of cultivating students' vocational ability, we need to abandon the traditional education model and formulate training strategies based on in-depth analysis of the current employment trend and comprehensive understanding of the job market (Figure 1). With the continuous advancement of college education and teaching reform, the close combination of innovation and entrepreneurship education and professional skills training has gradually become the top priority of all colleges and universities.

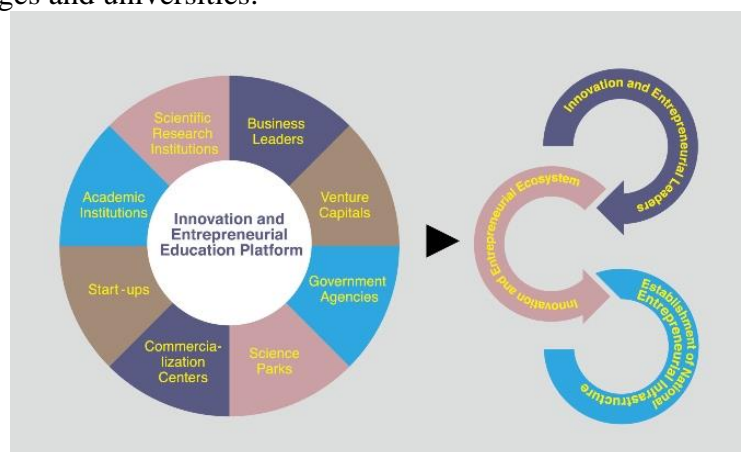


Figure 1. Strategy of entrepreneurship and innovation education

#### 4.1 Make use of information technology to increase publicity for mass entrepreneurship and innovation education

In view of the current lack of understanding of the concept of mass entrepreneurship and innovation among educators and learners, we strongly recommend further publicity efforts.

Specifically, the concept of "mass innovation and innovation" capability should be widely disseminated by means of information technology and by means of word-of-mouth, Internet, paper media and teaching materials<sup>[7]</sup>.

Through information channels such as the official websites of schools or education departments, social media and online education platforms, the publication of illustrated and easy-to-understand propaganda content to demonstrate the connotation and value of "mass entrepreneurship and innovation" can make more people easily understand and accept this concept. At the same time, schools can also use new media such as network broadcast, short video, etc., invite industry experts and scholars to explain and share online, through vivid cases and practical experience, in-depth interpretation of the importance of "mass entrepreneurship and innovation" ability, so that educators and students have a deeper understanding of it, at the same time, it should also encourage word-of-mouth between educators and students. Through their personal feelings and experiences, the value of "mass innovation" ability will be passed to more people, forming a broad consensus and attention.

In terms of media application, the concept of "mass innovation and innovation" can be combined with traditional publicity channels such as print media and teaching materials to publish relevant publicity articles and teaching materials, and integrate the concept of "mass innovation and innovation" into education and teaching, so as to make it part of the education content and guide educators and students to actively learn and master relevant knowledge ( Figure 2).



Figure 2. Guide students to take the initiative to participate

By making full use of information means, combined with a variety of publicity channels, we can effectively expand the influence of the concept of "mass innovation and innovation" ability, improve educators and students' awareness of its importance, and lay a solid foundation for cultivating more talents with innovation and entrepreneurship ability.

#### 4.2 Increase investment in science and technology and optimize hardware conditions

Under the background of information technology, it is an important and urgent task to integrate the "double innovation" education and professional skill training of environmental design majors in colleges and universities. In order to effectively achieve this goal, a series of specific measures can be taken from the perspective of increasing scientific and technological investment and optimizing hardware conditions<sup>[8]</sup>.

Investment in science and technology can not only provide advanced hardware equipment and experimental conditions for students majoring in environmental design. For example, the latest design software, 3D printing equipment, virtual reality technology can be introduced (Figure 3), and

students can be familiar with and master the latest design tools and technologies in practice. The support of these hardware devices will provide students with a more realistic and three-dimensional learning environment, which will help them better combine theoretical knowledge with practical application.



*Figure 3. Advanced equipment*

Colleges and universities can set up innovation laboratories or entrepreneurial practice bases to provide students with a special space for innovation and entrepreneurial practice. In this way, teachers' teaching and students' learning environment can be optimized. In these venues, students can combine their professional skills to carry out innovative design projects or entrepreneurial practices, translating their knowledge into practical results. At the same time, these places can also serve as a platform for teacher-student communication and teamwork, promote knowledge sharing and collision, and stimulate students' innovative thinking and entrepreneurial spirit.

In addition, universities can also use information means to build online learning platforms and resource sharing libraries to provide students with more convenient ways to learn. Through the sharing of online courses, teaching videos, design cases and other resources, students can obtain the necessary learning materials anytime and anywhere, broaden their learning horizons and improve learning efficiency. At the same time, these platforms can also serve as platforms for teachers and students to communicate and display their works, providing students with more opportunities to show themselves and communicate and learn<sup>[9]</sup>.

In addition, universities should also strengthen cooperation with industry enterprises, introduce external resources and experience, and promote the deep integration of "mass innovation" education and professional skills training. Through cooperation with enterprises, students can have access to more practical projects and market demands, understand the latest trends and development trends of the industry, so as to improve their professional skills and innovation and entrepreneurship ability more targeted.

### **4.3 Contact with diverse cultures and set up a mentor system**

To create more opportunities for university students majoring in environmental design to contact with multi-field cultural knowledge and various types of working environment, so as to stimulate their enthusiasm for self-improvement and all-round development, and to achieve the purpose of personalized guidance through the setting of tutor system.

The school can build cooperation with humanities, social sciences, natural sciences and other fields, which can help students get access to professional knowledge in different fields, understand the research methods and ways of thinking of different disciplines, so as to broaden students' knowledge vision and breadth of thinking, help students break the disciplinary barriers, and acquire a wider range of knowledge and ways of thinking. This cross-disciplinary communication can also

stimulate students' innovative thinking and help them think and solve problems from different angles<sup>[10]</sup>.

Through in-depth cooperation with various enterprises, design institutions and cultural institutions, students majoring in environmental design in universities can obtain valuable practical opportunities and personally participate in the design and practice of practical projects. This collaborative model provides students with a real, concrete working environment that gives them direct access to the latest developments and real needs of the industry.

In practical projects, students can not only apply the theoretical knowledge they have learned to solve practical problems, but also learn professional skills and operational methods in the industry. Through cooperation with enterprises, students can understand the specific requirements and processes of different projects, learn how to communicate with customers, how to design and implement programs and other practical skills. This practical experience enables students to closely combine theoretical knowledge with practice and improve their practical operation ability and problem-solving ability<sup>[11]</sup>.

At the same time, through cooperation with design institutions and cultural institutions, students can have access to more design cases and cultural elements, and broaden their design ideas and creativity. These institutions often have rich design experience and deep cultural heritage, which can provide more design inspiration and creative inspiration for students. Students can learn different design concepts and expression techniques in practice, and improve their design level and cultural literacy.

In addition to the above perspective of students' exposure to multiculturalism, it is also necessary to establish a mentoring system that can provide students with personalized guidance and advice to help them plan their learning paths and career development. With professional tutors with rich practical experience and deep academic background, students can get careful guidance and help from tutors to solve puzzles and problems in study and practice. Tutors are also able to provide students with personalized study plans and career development advice based on their characteristics and interests to help them better achieve self-improvement and all-round development.

## 5. Conclusion

In short, in the context of the information age, college environmental design majors need to deeply analyze market dynamics, follow students' entrepreneurial dreams, break through external environment and individual barriers, and realize the close integration of innovation and entrepreneurship education and professional skills training, so as to effectively improve students' innovation and entrepreneurship strength and promote the steady progress of college innovation and entrepreneurship education.

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