

Research on Intelligent Space Construction Path of University Innovation and Entrepreneurship Base

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Abstract: In order to promote the improvement of innovation and entrepreneurship ability of college students, with continuing education, colleges and universities give full play to the advantages of integration of production and education to build college students' double creation base. By analyzing the function positioning and construction ideas of college students' innovation and entrepreneurship base, the intelligent construction path of college students' double innovation base is pointed out. The construction of college students' innovation and entrepreneurship base explores its intelligent construction path from the four aspects of network information flow, media information flow, space flow and emotional flow, so as to build up the growth space of talent education in line with the current and future.

Keywords: Innovation and Entrepreneurship Education; Incubation Base; Intelligent Space; Construction Path.

1. Introduction

In recent years, the construction of entrepreneurship and innovation bases for college students in China has been rapid, which is closely related to the government's encouragement policy of mass entrepreneurship and innovation. In 2018, The State Council issued the Opinions on Promoting High-quality Development of Innovation and Entrepreneurship to Build an Upgraded version of Mass Entrepreneurship and Innovation, pointing out that promoting mass entrepreneurship and innovation is an important support for further implementing the innovation-driven development strategy and an important way to further promote supply-side structural reform[1]. In 2021, The General Office of the State Council issued a policy document specifically to guide college students' innovation and entrepreneurship, "Guiding Opinions on Further Supporting College Students' Innovation and Entrepreneurship," which pointed out that college students are the new force of mass entrepreneurship and innovation, and it is of great significance to support college students' innovation and entrepreneurship[2]. According to the guideline, local governments have provided a series of promotion policies, including subsidies for employment and entrepreneurship, discounted interest on start-up loans, tax incentives and flexible academic system, which have greatly boosted the confidence of all sectors of society, including universities, in college students' innovation and entrepreneurship.

The number of college graduates in 2023 reached 11.58 million, an increase of 820,000 over 2022. The number of graduates reached a record high, and the employment situation of college students is grim. As of mid-April, 50.4 percent of job-seeking graduates had received job offers, while those with a bachelor's degree made poor progress in finding jobs, according to a survey report on the employability of college students in 2023 released by Zhaopin.com[3]. Therefore, in the face of unprecedented difficulties in employment, the voice of graduates' innovation and entrepreneurship is gradually promoted, and the comprehensive application ability of college students with innovative and entrepreneurial ability as a prominent feature

is more urgent demand.

At present, innovation and entrepreneurship education in colleges and universities is facing both opportunities and challenges. On the one hand, the opportunities brought by the increasing support of the state for college students' innovation and entrepreneurship; On the other hand, the new era has higher requirements for college students' comprehensive ability of innovation and entrepreneurship, which is a challenge to college students' innovation and entrepreneurship education. The atmosphere of entrepreneurship and innovation in colleges and universities is increasingly strong, and the concept of innovation and entrepreneurship is deeply rooted in the hearts of students. However, in the basic situation of continuous improvement of the innovation and entrepreneurship environment in colleges and universities, there are still innovation and entrepreneurship ecology is not perfect, and the hardware and software of the base cannot fully meet the needs. In particular, the characteristics of entrepreneurship and innovation base based on contemporary and future development are not obvious.

Functional positioning of innovation and entrepreneurship base in universities

In order to promote the transformation and upgrading of traditional industries, cultivate and grow emerging industries, and accelerate the construction of a modern industrial system, the Ministry of Education and other relevant departments have issued the "Six Excellence and one top-notch" 2.0 plan, advocating the development of new engineering, new medical, new agricultural, and new liberal arts. The development of these four new disciplines is closely related to innovation education and entrepreneurial practice education. At present, there are two types of innovation and entrepreneurship bases, one is an innovation incubator base dedicated to technological exploration in combination with the characteristics of school majors and disciplines, and the other is an incubator space aimed at cultivating students' business acumen and entrepreneurial awareness.

The first type of innovation base is positioned to focus on specific industries or technological fields, such as information technology, biotechnology, artificial intelligence, robotics and

clean energy. While emphasizing the cultivation of students' innovative thinking ability, these bases grasp the development trend of The Times and promote technological progress in strategic fields. For example, the Visual Cognitive Computing and Intelligent Vehicle Laboratory of Xi'an Jiaotong University has made many innovative achievements in the field of artificial intelligence. The function positioning of the second type of double innovation base is to cultivate students' business mind and entrepreneurial consciousness. The practice projects of this type of entrepreneurship base are usually carried out around campus life and involve various projects of service and commercial nature. For example, the campus micro-mall space serves the learning, printing, dining, entertainment, accommodation and other contents of teachers and students on campus. Intangible cultural heritage product Studio propagates outstanding intangible culture on campus, combines intangible cultural heritage with innovative products, and forms cultural and creative products for sale.

No matter what kind of university incubation base, in addition to providing incubation base space and material infrastructure, it is particularly necessary to provide students with support activities related to innovation and entrepreneurship education, so that those who are interested in starting a business can master necessary skills and knowledge and promote their comprehensive ability. These support activities include workshops, seminars, mentorship for entrepreneurial students, and entrepreneurship competitions for selected projects. Universities can also provide resources, market opportunities and financial support for start-up projects by acting as a liaison with industry partners, companies, investors and collaborators in order for the innovation and entrepreneurship Base to incubate successful projects.

2. Ideas for the Construction of Innovation and Entrepreneurship bases in Universities

With the advent of the "Internet plus" era, profound changes have taken place in society. In the context of the explosion of knowledge and information and the diverse needs of students, the most prominent problem in the space construction of mass innovation and entrepreneurship education in colleges and universities is the need to keep up with the development of The Times, meet the user experience, and develop in the direction of wisdom.

2.1. Digital Technology Contributes to the Teaching and Practice of Entrepreneurship and Innovation Bases

The current society has entered the digital age, which makes the acquisition of knowledge information and resources more free and multi-source state. Digital teaching equipment and technology have become an essential part of college teaching, which improves the physical space environment of traditional classrooms and practice bases. Digital teaching tools are widely used by colleges and universities to provide educational content in classrooms and practice bases. In the form of online lectures or massive open online courses (MOOCs), ordinary colleges and universities can also learn innovative and entrepreneurial knowledge from high-level universities at home and abroad. Students acquire a large amount of knowledge through online databases, e-books, academic articles and educational websites, which can

better give play to their subjective initiative in learning. Relying on digital technology equipment and environment, the content of innovative and entrepreneurial knowledge is integrated into students' learning management system and online collaboration system, and multimedia learning resources and virtual learning environment are formed. The use of digital technology in classrooms and practice bases has improved the learning experience, promoted exchanges and cooperation, and produced more fruitful results in college teaching and practice.

The integration of digital teaching equipment and technology into the innovation and entrepreneurship base of colleges and universities has promoted students' learning status to be manifested as a mixed learning mode of online and offline. Digital technology equipment combined with the base conditions to carry out teaching and practice, making the learning time and place more flexible, which is conducive to students according to their own learning pace and innovation and entrepreneurship needs, to choose the form of learning and practice.

2.2. The Entrepreneurship and Innovation Base Provides Personalized Practice Space

The goal of establishing entrepreneurship and innovation bases in universities is to cultivate innovative talents who meet the needs of the current industry and social development. Therefore, entrepreneurship and innovation bases take student-led practical activities and practical projects as the main content, and form a personalized practice space that is different from the traditional classroom teaching mode. Students' practical activities and projects can be academic frontier, or they can be closely related to social life, such as professional frontier innovation research, social project into the base, and campus life service projects.

In order to meet the different needs of students in innovation and entrepreneurship, the space of the base should be reasonably and flexibly divided and equipped with corresponding material and technical facilities to meet the unique practical needs of entrepreneurs. At the same time, according to the needs of students' practical projects, targeted special guidance on financial and taxation knowledge, business administration knowledge, e-commerce, marketing and other aspects will be provided to students of innovation and entrepreneurship. Through the combination of hardware and software, online education of multimedia resources and offline education of studio practice, the personalized growth of students is promoted[4].

2.3. Intelligent Construction to Enhance the Level of Entrepreneurship and Innovation Education

Through the smart construction of innovation and entrepreneurship bases, universities will further strengthen their ties with enterprises, local governments, and even international institutions. Virtual classrooms, video conferencing and online discussion platforms enable students to interact with experts from different geographical locations and fields to promote higher learning levels; Give play to the incubation role of the base to strengthen the connection with social resources and form school-enterprise partnerships; Promote international exchanges through access to international networks and resources, so as to improve the innovative effectiveness of the base's projects and elevate the level of mass innovation education.

3. Intelligent Construction Path of Innovation and Entrepreneurship Base

During the construction of innovation and entrepreneurship bases in colleges and universities, a scientific and intelligent space environment is formed through the design of network information flow, media flow, people flow and emotional flow [5].

3.1. Construction of Network Information Flow of the Mass Innovation and Entrepreneurship Base

The most basic work in the construction of intelligent space for innovation and entrepreneurship in colleges and universities is to build high-speed Internet, set up electronic teaching AIDS and intelligent teaching facilities, such as electronic blackboards connected to the Internet. The base space has stable network communication and full coverage of Wi-Fi, which promotes seamless communication and links with important education and teaching platforms through a large number of connected devices and sufficient power sockets. Smart meeting rooms and collaboration tools are essential for a modern office. Smart displays, video conferencing systems and collaboration tools will be installed in the meeting rooms of the base, and a scheduling system will be implemented to simplify the booking and management of meeting rooms. These technologies help project members communicate and collaborate across space, whether participants are on site or remotely. At present, mobile applications have become the mainstream channels of communication and service. A mobile application specially serving the university base is developed to serve as a platform for the incubation base and stakeholders to obtain information, contact with mentors and experts, and participate in activities, so as to promote timely and effective communication inside and outside the base.

IOT devices are deployed in the space of the base to provide guarantee for the normal operation and scientific management of the base. The base space is equipped with high-sensitivity sensors or intelligent sensors such as human presence sensors, intelligent lighting systems, and environmental monitoring equipment, so that the lights are on when people come and the lights are off when people leave, smoke alarm transmission, and timely response processing. Through the Internet of Things equipment, the managers of the practice base can obtain real-time data on energy consumption and environmental conditions, as well as personnel concentration density and space utilization rate. Intelligent access control systems are implemented to ensure safe control of people and things entering the base. Current such technologies include biometric authentication, keyless entry, and visitor management systems, as well as closed-circuit television cameras and video surveillance to enhance security and monitor Spaces. By analyzing data, managers understand space utilization patterns, identify bottlenecks, and make scientific and rational judgments to achieve cost-saving, high-quality security, and better use of space.

In short, based on the teaching and practice needs faced by the mass innovation and innovation base, it constantly iterates and strengthens the construction and management of intelligent space, promotes the flow of information related to the Internet and the Internet of Things in the base, and supports the high-quality development of university

innovation and entrepreneurship.

3.2. Construction of Media Information Flow in the Base of Entrepreneurship and Innovation

The innovative education activities and development status carried out by the mass entrepreneurship and innovation bases in colleges and universities cannot be separated from media publicity. Through visual and auditory attraction, relevant information can be displayed in an easily accessible way to form an effective media stream, thus promoting the intelligent construction of the mass entrepreneurship and innovation base. In key areas of the base, large digital signage and large information display screens will be installed at high levels to display real-time news, announcements, activity results and other relevant content on a rolling basis; A small interactive information screen at a low level will be set up at the entrance and hall of the base to provide information about user registration, visit consultation, upcoming activities and incubation projects.

Establish an online media platform and portal website of the university base, so that the information of various mass entrepreneurship and innovation bases can continue to flow in a centralized and accessible way. The base's own media platforms and portals integrate various media channels, including news articles, blogs, videos, podcasts, etc. Relying on online platforms or forums, students, mentors, investors and other stakeholders can connect, share information, and collaborate. The platform regularly shares entrepreneurial knowledge, innovation experience, campus counseling, financial knowledge and other information to attract the attention of teachers and students, drive news dissemination through reading, sharing, commenting and discussion, and make the online media platform and portal become the hub of relevant resources.

Set up a multimedia studio in the innovation and entrepreneurship base, equipped with audio and video recording equipment, editing software and green screens. Students use these facilities to create high-quality media content, such as promotional films, interviews and entrepreneurship tutorials, to enhance news promotion. With the rise of livestreaming in society and the exponential growth of livestreaming users, qualified universities have opened livestreaming rooms in the bases, or opened livestreaming functions on mainstream platforms such as Douyin and wechat. The content of livestreaming activities can be online training courses, seminars and guest lectures, and products incubated in the bases can also be sold in the livestreaming rooms. Through the use of these media, relevant information can reach start-ups, mentors, investors and other stakeholders in a timely manner, creating a good external publicity image and forming an intelligent media information space.

3.3. Mass Entrepreneurship and Innovation Base Space Flow Construction

The spatial layout of the intelligent double innovation and innovation base should be rationally divided according to the function of the site, to help establish a scientific pedestrian flow route, and to promote the orderly gathering and dispersive flow of personnel in the base. The scientific construction of the people flow route needs to be based on the two elements of functional requirements and time requirements, and to divide the space form, size, entrance and exit in the form of fixed or elastic space.

According to the functional requirements of many entrepreneurs for the base, the designated area is divided into joint learning, office, conference, seminar, training, activity and leisure areas. The function setting and utilization of the space, the time factor is also one of the factors to be considered. Groups of different activities are assigned to use the same space, which can be divided according to the time, for example, during the working day as a seminar or training space, while weekends and evenings are designated as leisure activities. Through the overall coordination of time, improve the use of space, peak use, etc., to promote the flow of people is not chaotic and not superimposed, forming a comfortable environment. The flexible space design in the base uses movable partitions, modular furniture or foldable panel walls, overhanging curtains, etc. These components are combined according to temporary needs to form a new configuration environment, so as to adapt to different group sizes and activity requirements.

To facilitate the efficient movement of people, clear signage and way-finding systems are implemented throughout the site. Direct individuals to different areas, facilities and resources to minimize confusion and ensure a smooth and orderly flow of people. Digital signage provides real-time information about space availability, upcoming events, and directional instructions to guide the flow of people to walk properly. Based on big data analysis, the flow of people in the base can be optimized, such as the use of thermal maps, flow sensors or video surveillance and other tools to regularly analyze the flow of people in the base. On the basis of the analysis, congested, bottle-necked or underutilized areas are identified. Adjustment measures implemented, such as rearranging furniture, adding directional signs, or spatial layout realignment. By implementing these strategies, the university's innovation and entrepreneurship base can establish a scientific flow route to ensure the maximum utilization of space and highlight humanity.

3.4. Construction of Emotional Flow in the Base of Mass Innovation and Entrepreneurship

By creating a space conducive to emotional exchange, the university innovation and entrepreneurship base can promote more contact and cooperation, while forming an environment with a sense of community, so that teachers and students can find a sense of belonging and stimulate stronger team strength. Changing the space size and space content can make members have different emotional ideals and corresponding emotional expression ways. By moving furniture, flexibly choosing seats and sitting Spaces, people are encouraged to gather and have formal or informal conversations, which is more conducive to participants sharing ideas and reaching consensus. Private or semi-private Spaces are used for group discussions or breaks, where individuals or groups can have intimate conversations or confidential discussions. These rooms can be equipped with comfortable seating, a whiteboard or digital display, and soundproofing to ensure privacy and promote emotional exchange. Comfortable, emotionally-friendly Spaces, often with warm colors, introduce natural light and incorporate elements such as plants, artwork and inspirational quotes, enhance aesthetic appeal and promote a positive and healthy emotional atmosphere.

Self-catering areas are equipped with shared resources such as communal tables and printing equipment, as well as self-

catering facilities such as coffee stations or kitchenettes. Spaces with elements such as soft lighting, soft background music and indoor water features encourage casual interactions, informal talks and contribute to fatigue relief, emotional connection or emotional healing. A conditional incubator can also form informal salon meeting Spaces in outdoor areas, balconies and top floors, where individuals can relax and engage in conversations and spontaneous interactions, which is very conducive to fostering a sense of community. Support services such as guidance or counseling are provided here, so that individual members can get emotional support and various kinds of ideological inspiration. By incorporating these elements, the base encourages emotional exchange, builds a good incubation base culture, and highlights the humanistic spirit.

4. The Construction of Anhui University of Finance and Economics, Kopeman Double Innovation Wisdom Space

Anhui University of Finance and Economics is a comprehensive university specializing in economics and management law. The university attaches great importance to the cultivation of students' innovation and entrepreneurship ability, and has built a number of practice bases to meet the needs of students' multi-objective development. In 2019, the School of Art of Anhui University of Finance and Economics established the Kopeman Innovation and Entrepreneurship Practice Base in the form of social donations, and formed a smart service environment through the operation of various projects such as exhibitions, conferences, and campus life services.

Kopeman Double Innovation Base adopts multi-layer structure to integrate the entity entrepreneurial projects and resources of the base online and offline. In terms of network information flow, the base is connected to high-speed network, equipped with induction lamps and human induction devices. The giant smart electronic screen has become an indispensable equipment resource for holding online classes, online lectures, and holding video conferences, award ceremonies, live broadcasts, screen casting and other activities. The network structure of the base also actively supports the remote distribution service of creative drinks, creative printing, creative bookstore, creative conference and other physical projects in the base, providing technical support for entrepreneurial practice education[6]. In terms of media information flow, through the operation of weekend movies, held Anhui micro Film Festival, more than 30 colleges and universities inside and outside the province to cooperate in Anhui Province Industrial design competition Kopeman special competition, local culture Tiktok weekend live broadcast and other activities, to enhance the attention of Kopeman base and the incubation projects in the base, to promote the sound operation of commercial activities in the base. In terms of space flow, KOP Man base has movable furniture and furnishings facilities, so that the space layout can be flexibly arranged according to the scale of the conference and different functions. Rolling curtains, grilles, undulating platforms, ground guidance of different colors, etc., have become the key elements to create a space atmosphere and guide the flow of people. In terms of emotional flow, the Kopeman base actively creates a warm and friendly atmosphere for communication. The walls of the

base are covered with wood grain wallpaper produced by Beijing Kopeman Economic and Trade Co., LTD., and the floor is decorated with coffee color floor paint. The loft-style small office area can overlook the activities downstairs in the room, and the coffee salon area, beverage area and literature printing area form a small environment for cultural and creative activities, movie watching and other easy communication. The soft background music can make people stay relaxed and happy in it.

Kopeman Double Innovation Base is an innovative experiment combining production, university and research under the new economic and management background. The purpose is to build the Kopeman Wisdom Incubation Base into a practical teaching base integrating creative design, artistic creation and design competitions, and to closely connect theoretical teaching with practical teaching, market development and enterprise needs, so as to build an intelligent teaching reform display platform. Through the integration of teaching, production, innovation and other resources, Kopeman Innovation and entrepreneurship Base promotes interdisciplinary and cross-field cooperation, while further promoting the transformation of design results, improving students' social practice ability and comprehensive quality of innovation and entrepreneurship, and actively exploring a new economic and management construction model featuring college students' innovation and entrepreneurship and art management. By combining modern material and technological conditions with teaching activities, college innovation and entrepreneurship base meets contemporary psychological needs, realizes the construction of intelligent space, fills the lack of educational knowledge, and promotes the coordinated development of innovative talent training and entrepreneurial services.

5. Conclusion

Under the favorable environment brought by the current national policy support, innovation and entrepreneurship education in colleges and universities can achieve higher and faster development. Colleges and universities actively implement the measures of college students' innovation and entrepreneurship education, and strengthen the construction of wisdom through overall planning of base construction, so as to promote the construction of the ecosystem of mass entrepreneurship and innovation base, and promote college students to have more comprehensive qualities and develop into comprehensive applied talents.

The path of intelligent construction of the base is to carry out concrete construction through four contents: network information flow, media information flow, space flow and emotional flow, so as to form a smart space that can meet the functional needs and expand the use experience. Various information flows are rationally developed and utilized in the

space of innovation and entrepreneurship bases in colleges and universities to create various information flow environments that meet the material conditions and equipment and meet the needs of teaching content. The significant improvement of service capacity of the double innovation base in colleges and universities is conducive to the development needs of the current college base and the needs of future talent training and continuing education.

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