GUIDELINES FOR IMPROVING THE TEACHING STAFF CONSTRUCTION OF INNOVATION AND ENTREPRENEURSHIP EDUCATION IN APPLICATION-ORIENTED UNIVERSITIES IN ZHEJIANG

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Thesis Title Strategies to improve the teaching staff construction of innovation and entrepreneurship education in application-oriented universities in Zhejiang

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ABSTRACT

The objectives of this research were: 1) to study the current situation of the teaching staff construction of innovation and entrepreneurship education in application-oriented universities in Zhejiang. 2) to provide guidelines for improving the teaching staff construction of innovation and entrepreneurship education in application-oriented universities in Zhejiang. 3) to evaluate the suitability and feasibility of guidelines for improving the teaching staff construction of innovation and entrepreneurship education in application-oriented universities in Zhejiang. The sample group of this research was 315 teachers and administrators from 7 application-oriented universities in Zhejiang. The interview group was 12 teachers and administrators from above universities. The experts for evaluating the suitability and feasibility of strategies was 15 experts from application-oriented universities in Zhejiang. Research instruments included: 1) questionnaire, 2) interview forms, 3) evaluation form. Data analysis used percentage, mean and standard deviation.

The results were found that: 1) the teaching staff construction level of innovation and entrepreneurship education in application-oriented universities in Zhejiang in five dimensions is at a relatively high level. But it also reflected some problems, and the level of the teaching staff construction among these dimensions needed to be balanced. Composition of the teaching staff was the highest, while

teacher training was the lowest; 2) the guidelines for improving the teaching staff construction of innovation and entrepreneurship education were divided into five dimensions, which include 20 measures. There are 4 measures for optimizing the composition of the teaching staff, 4 measures for enhancing professional qualities of the teaching staff, 4 measures to improve management and assessment, 4 measures for promoting teacher training, and 4 measures for boosting supporting mechanism; and 3) the suitability and feasibility of the guidelines for improving the teaching staff construction of innovation and entrepreneurship education in five dimensions were at the high level.

Keywords: Innovation and Entrepreneurship Education, The Teaching Staff Construction, Application-Oriented Universities, Guidelines for Improving

ชื่อเรื่อง **แนวทางการพัฒนาบุคลากรด้านการสอนในหลักสูตรนวัตกรรมและการเป็นผู้ประกอบการของมหาวิทยาลัยที่เน้นการประยุกต์ใช้ในมณฑลเจ้อเจียง**
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บทคัดย่อ

วัตถุประสงค์ของการวิจัยนี้คือ 1) เพื่อศึกษาสภาพปัจจุบันของบุคลากรด้านการสอนในหลักสูตรนวัตกรรมและการเป็นผู้ประกอบการของมหาวิทยาลัยที่เน้นการประยุกต์ใช้ในมณฑลเจ้อเจียง 2) เพื่อเสนอแนวทางการพัฒนาบุคลากรด้านการสอนในหลักสูตรนวัตกรรมและการเป็นผู้ประกอบการของมหาวิทยาลัยที่เน้นการประยุกต์ใช้ในมณฑลเจ้อเจียง และ 3) เพื่อประเมินความเหมาะสมและความเป็นไปได้ของแนวทางการพัฒนาบุคลากรด้านการสอนในหลักสูตรนวัตกรรมและการเป็นผู้ประกอบการของมหาวิทยาลัยที่เน้นการประยุกต์ใช้ในมณฑลเจ้อเจียง กลุ่มตัวอย่างในการวิจัยครั้งนี้ ได้แก่ ผู้บริหารและอาจารย์ จากมหาวิทยาลัยที่เน้นการประยุกต์ใช้ในมณฑลเจ้อเจียง จำนวน 7 แห่งใน รวมทั้งสิ้น 315 คน ผู้ให้ข้อมูลสัมภาษณ์ ผู้บริหารและอาจารย์ จำนวน 12 คน กลุ่มผู้ประเมินความเหมาะสมและความเป็นไปได้ของแนวทาง ได้แก่ ผู้ทรงคุณวุฒิ จำนวน 15 คน เครื่องมือที่ใช้ในการวิจัยครั้งนี้ ได้แก่ 1) แบบสอบถาม 2) แบบสัมภาษณ์แบบมีโครงสร้าง และ 3) แบบประเมิน สถิติที่ใช้ในการวิเคราะห์ข้อมูล ได้แก่ ค่าร้อยละค่าเฉลี่ย ส่วนเบี่ยงเบนมาตรฐาน และการวิเคราะห์เนื้อหา

ผลการวิจัย พบว่า สภาพปัจจุบันของบุคลากรด้านการสอนในหลักสูตรนวัตกรรมและการเป็นผู้ประกอบการของมหาวิทยาลัยที่เน้นการประยุกต์ใช้ในมณฑลเจ้อเจียง โดยภาพรวมทั้ง 5 ด้าน มีค่าเฉลี่ยอยู่ในระดับสูง 2) แนวทางการพัฒนาบุคลากรด้านการสอนในหลักสูตรนวัตกรรมและการเป็นผู้ประกอบการ ประกอบด้วย 5 ด้าน รวมทั้งสิ้น 20 มาตรการ ได้แก่ พัฒนาองค์ประกอบคณาจารย์ จำนวน 4 มาตรการ เสริมสร้างคุณภาพทางวิชาชีพของคณาจารย์ จำนวน 4 มาตรการ

พัฒนาการบริหารจัดการและการประเมินผล จำนวน 4 มาตรการ ส่งเสริมการฝึกอบรมคณาจารย์ จำนวน 4 มาตรการ และเสริมสร้างกลไกสนับสนุน จำนวน 4 มาตรการ 3) ผลการประเมินความเหมาะสมและความเป็นไปได้ของแนวทางการพัฒนาบุคลากรด้านการสอนในหลักสูตรนวัตกรรมและการเป็นผู้ประกอบการของมหาวิทยาลัยที่เน้นการประยุกต์ใช้ในมณฑลเจ้อเจียง มีค่าเฉลี่ยอยู่ในระดับสูง

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When I reached the end and was about to finish writing, I felt a sense of emotion in my heart, although it did not necessarily mean a perfect end, it could also be just another beginning of my learning career. Good times are always fleeting, and in the blink of an eye, 4 years of academic life have come to an end. 4 years ago, I was glad to be enrolled by Bansomdejchaopraya Rajabhat University in Thailand. Though it was a pity that I didn't have a chance to go to the university during the first two years of doctoral period. I was deeply impressed by Thai and Chinese teachers giving us lectures online. Fortunately this year I stepped on Thailand for the first time and met my Thai supervisor Assoc.Prof.Dr.Jittawisut Wimuttipanya and other teachers at Bansomdejchaopraya Rajabhat University.

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He Lichuan

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Chapter 1
Introduction

Rationale

Since the beginning of the 21st century, in this era characterized by globalization and knowledge economy, a country's core competitiveness is more reflected in its innovation and entrepreneurship capabilities. In a two-year survey, the Organization for Economic Cooperation and Development (OECD) analyzed the differences in economic development among some countries and their underlying root causes, hoping to identify the key factors that promote long-term economic development. It was found that the four key elements that promote national economic development are information and communication, human capital, innovation, and entrepreneurship.

In this context, countries around the world have formulated strategic plans and issued relevant documents to support the development of their own entrepreneurial economies. In 2011, the US government proposed the "Entrepreneurial America" program, aimed at coordinating resources such as funding, technology, and mentors to support entrepreneurship nationwide. The UK is committed to establishing specialized entrepreneurial institutions to handle entrepreneurial affairs, such as the UK Science Entrepreneurship Centre and the National College Student Entrepreneurship Council. The "German High Tech Strategy 2025" closely integrates technology with demand, encouraging the development of technology entrepreneurship that meets demand in various aspects of social production and life. In May 2013, the French government issued the National Innovation Plan, emphasizing the deepening of school enterprise cooperation and the creation of an entrepreneurial culture. In 2016, Singapore released the "Research, Innovation and Entrepreneurship 2020 Plan", which increased funding and overall layout in four strategic areas to promote the construction of an innovative and entrepreneurial economy. China also attaches great importance to the role of entrepreneurial economy in enhancing national competitiveness, and regards entrepreneurship as an important component of promoting the country's innovation driven development strategy, striving to promote the formation of a "mass entrepreneurship" atmosphere.

At the same time, China's higher education has developed rapidly, with enrollment rates increasing from 10.5% in 1999 to 51.6% in 2019. In just 20 years, the enrollment rate has exceeded half, entering the stage of popularizing higher education. The so-called popularization stage of higher education originated from the three-stage theory of higher education development first proposed by the famous American educational sociologist Professor Martin Trow in 1973. Martin Trow used the gross enrollment rate of higher education as a quantitative indicator to measure the degree of expansion of a country's higher education scale and divide its historical development stages, dividing the process of higher education development into three stages: "elite, popularization, and universalness". He believes that "the nature of elite higher education in some countries will not change until its scale expands to provide learning opportunities for about 15% of eligible youth. When it reaches 15%, the nature of the higher education system begins to change and shift towards popularization. If this transition is successful, mass higher education can develop until its capacity reaches 50% of the eligible population without changing its nature. When it exceeds 50%, higher education begins to rapidly move towards universalness." The number of graduates has also rapidly expanded from 950,000 in 2000 to over 10 million in 2022, an increase of 10 times in just 20 years. The surge in graduates will inevitably have a great impact on the job market, and the competition for employment will become increasingly fierce. Based on the need to cope with international competition and alleviate employment pressure, the country has begun to vigorously promote innovation and entrepreneurship education in higher education institutions. Carrying out entrepreneurship education in ordinary higher education institutions is an urgent need for the country to implement the innovation driven development strategy, promote economic quality, efficiency and upgrading, and is also an important measure to promote comprehensive reform of higher education and promote higher quality entrepreneurship and employment for college graduates.

In February 2002, the Ministry of Education and other departments jointly issued the "Opinions on Further Deepening the Reform of the Employment System for Graduates of Ordinary Higher Education Institutions", advocating for college students to choose their own jobs and start businesses, and providing support for simplifying administrative approval procedures such as industry and commerce and taxation. In April of the same

year, the Higher Education Department of the Ministry of Education released the "Minutes of the Symposium on Entrepreneurship Education Pilot Work", which determined that nine universities including Tsinghua University would carry out the "Entrepreneurship Education Pilot", thus kicking off the practice of innovation and entrepreneurship education in universities. This marks the shift of innovation and entrepreneurship education from spontaneous practice in individual colleges to localized administrative guidance behavior.

In 2004, the General Office of the Ministry of Labor and Social Security and the General Office of the Ministry of Education issued a notice on piloting the "Start Your Business" (SYB) training course in some higher education institutions, selecting 37 universities with a foundation in entrepreneurship education to pilot the "Start Your Business" (SYB) training course for college students. Professionalization thus became the development direction of entrepreneurship education courses.

In 2005, the Central Committee of the Communist Youth League, the All China Youth Federation, and the International Labour Organization launched the KAB (Know About Business) Entrepreneurship Education (China) project, which explored a distinctive path of entrepreneurship education through teacher training, curriculum development, textbook writing, and the establishment of entrepreneurship clubs.

In 2006, the Ministry of Education officially released the "Guidelines for Innovation and Entrepreneurship Education in Higher Education Institutions", which clarified the goals and basic requirements of innovation and entrepreneurship education in universities. Many universities have established innovation and entrepreneurship education centers to provide training and guidance services for innovation and entrepreneurship.

In 2007, the General Office of the Ministry of Education issued the "Teaching Requirements for College Students' Career Development and Employment Guidance Courses", which included entrepreneurship education in the curriculum teaching plan and student career development and employment guidance section of universities, and made normative explanations on the teaching objectives, content, and methods under it.

In April 2010, the Ministry of Education issued a notice on the establishment of the Higher Education Entrepreneurship Education Guidance Committee for 2010-2015, which provided policy guidance on the theoretical and practical research, curriculum

construction, textbook construction, teaching content reform, teacher training, practical activities, and other aspects of entrepreneurship education. In May of the same year, in order to guide and support college students to start their own businesses and ensure that a large number of students with conditions and willingness can find employment through entrepreneurship, the Ministry of Human Resources and Social Security issued the "Notice on Implementing the Entrepreneurship Leadership Plan for College Students", deploying core tasks such as entrepreneurship training and training, policy support, guidance services, and incubation support. At the policy level, it proposed the establishment of a phased, multi-dimensional, and tiered college student entrepreneurship service system. Following closely behind, the Ministry of Education issued the "Opinions on Vigorously Promoting Innovation and Entrepreneurship Education in Higher Education Institutions and Self employment of College Students", pointing out that college students are one of the most promising groups for innovation and entrepreneurship, and requiring all levels and types of universities across the country to uniformly carry out innovation and entrepreneurship education. Among them, the attribute positioning of innovation and entrepreneurship education as a new teaching concept and model, as well as the implementation requirements for all students and integration into the entire process of talent cultivation, have been stipulated. This opinion also provides normative explanations on talent cultivation objectives, curriculum teaching system, teacher team, practical activities, quality monitoring, practical bases and platforms, policy support and services, organizational guarantees, etc. This policy is the most comprehensive institutional design since the birth of innovation and entrepreneurship education in Chinese universities, marking that the small-scale, localized, and workshop style development of innovation and entrepreneurship education is no longer continuing. Innovation and entrepreneurship education is beginning to move towards popularization and systematization under the orderly and strong driving force of the policy, and promoting and popularizing innovation and entrepreneurship education has become a national will.

In 2012, in order to effectively enhance students' innovation and entrepreneurship abilities, transform the ideological concepts and talent cultivation models of higher education, the Ministry of Education issued the "Notice on the Implementation of the National College Students' Innovation and Entrepreneurship

Training Program for Undergraduate Teaching Projects" in February. At the institutional level, it was stipulated that the National College Students' Innovation and Entrepreneurship Training Program (referred to as the "National Innovation Program") would be implemented in a project-based manner and supported by special funds, based on the three modules of innovation training, entrepreneurship training, and entrepreneurship practice. In March of the same year, the Ministry of Education issued the "Several Opinions on Comprehensively Improving the Quality of Higher Education", which further made special provisions on strengthening innovation and entrepreneurship education, proposing to integrate innovation and entrepreneurship education into the entire process of talent cultivation, develop innovation and entrepreneurship courses, build internship bases, carry out innovation and entrepreneurship teacher training, and build a part-time teacher team. In August, the General Office of the Ministry of Education issued the "Basic Requirements for Entrepreneurship Education and Teaching in Ordinary Undergraduate Schools (Trial)", which systematically and comprehensively determined the teaching objectives of innovation and entrepreneurship knowledge, theory, methods, awareness, spirit, and sense of responsibility. The teaching principles are oriented towards the whole, classified teaching, combined with majors, and strengthened practice. The teaching methods combine classroom teaching, extracurricular activities, and social practice. The teaching content integrates knowledge, ability, and spirit, as well as the teaching organization that promotes curriculum development, resource guarantee, teacher team construction, and teaching effectiveness evaluation.

In 2014, Premier Li Keqiang put forward the slogan of "mass entrepreneurship and innovation". Originating from entrepreneurship education abroad, China emphasizes the cultivation of innovative thinking, believing that "innovation is the soul of social progress, entrepreneurship is an important way to promote economic and social development, improve people's livelihoods, and innovation and entrepreneurship are interconnected and coexist", thus proposing the concept of "innovation and entrepreneurship education".

In May 2015, the General Office of the State Council issued the "Implementation Opinions on Deepening the Reform of Innovation and Entrepreneurship Education in Higher Education Institutions", further elevating innovation and entrepreneurship education

to the strategic height of national development, clarifying the key reform directions such as talent training quality standards, training mechanisms, curriculum systems, teaching methods, and assessment methods, guiding universities to comprehensively deepen reforms to solve key problems and prominent issues in innovation and entrepreneurship education practice, such as insufficient attention, failure to effectively integrate professional education, weak teacher participation awareness and ability, detachment from practice, incomplete system, weak pertinence and effectiveness, and develop towards diversification, individualization, and specialization. Subsequently, the State Council issued the Opinions on Several Policies and Measures to Vigorously Promote Mass Entrepreneurship and Innovation and the Guiding Opinions on Accelerating the Construction of a Mass Entrepreneurship and Innovation Support Platform, pointing out that it is necessary to improve the entrepreneurial talent training and flow mechanism, strengthen the knowledge popularization and education of innovation and entrepreneurship, improve the entrepreneurship curriculum and the construction of mentors, establish an innovation and entrepreneurship performance evaluation mechanism, accelerate the development of "Internet plus" innovation and entrepreneurship, and build an inclusive, institutionalized and comprehensive policy system based on the innovation and entrepreneurship chain, which links the capital chain, industry chain, employment chain and platform space.

From 2016 to 2017, the Ministry of Education launched the selection and recognition of demonstration universities for deepening innovation and entrepreneurship education reform. The list of 200 demonstration universities was announced in two batches to promote typical models and experiences through demonstration driven effects, promote the deepening of innovation and entrepreneurship education reform, and comprehensively enhance students' innovation and entrepreneurship abilities.

In 2018, the State Council issued the "Opinions on Promoting the High Quality Development of Innovation and Entrepreneurship and Building an Upgraded Version of 'Double Innovation'", which clearly required universities to promote the entrepreneurship mentorship system, incorporate innovation and entrepreneurship education into the compulsory course system, deepen the integration of industry and education, and provide internships and practical training. This policy promotes innovation and entrepreneurship

education as a reform action for the whole society and the entire chain, committed to achieving high-quality development through comprehensive measures such as upgrading the innovation and entrepreneurship environment, upgrading development momentum, upgrading the ability of entrepreneurship to drive employment, upgrading technological innovation support capabilities, and upgrading platform services. It has pushed innovation and entrepreneurship education to a new stage of quality construction and revolution.

On September 22, 2021, the General Office of the State Council issued the "Guiding Opinions on Further Supporting College Students' Innovation and Entrepreneurship", proposing to deepen the promotion of "mass entrepreneurship and innovation", and making clear arrangements to fully implement the Party's education policy, implement the fundamental task of cultivating morality and talents, based on the new development stage, implementing the new development concept, constructing a new development pattern, adhering to innovation leading entrepreneurship and entrepreneurship driving employment, supporting college students to enhance their innovation and entrepreneurship abilities, supporting college graduates' entrepreneurship and employment, improving the quality of human resources, promoting the all-round development of college students, and achieving more comprehensive and high-quality employment for college students.

Innovation and entrepreneurship education has gradually become a universal education for all higher education institutions, aimed at all students. It has gradually established an innovation and entrepreneurship education system that integrates classroom teaching, self-directed learning, practical application, guidance and assistance, and cultural guidance. It has preliminarily constructed a diversified education system that involves the collaboration of government, universities, and enterprises.

Since its inception, innovation and entrepreneurship education in Chinese universities has received continuous attention and importance from the Party, the state, and the whole society, and has achieved gratifying results in its development so far. However, there are also some places and universities that do not attach enough importance to innovation and entrepreneurship education, and the concept of innovation and entrepreneurship education lags behind. It is not closely integrated with professional education and is disconnected from practice; Teachers lack awareness and ability to carry

out innovation and entrepreneurship education, with a single teaching method and weak targeted effectiveness; Shortage of practical platforms, inadequate guidance and assistance, and urgent need to improve the innovation and entrepreneurship education system. The "2017 Survey Report on Innovation and Entrepreneurship among Chinese College Students" released by the Global Think Tank (CCG) shows that there are problems in the development of innovation and entrepreneurship education in universities, such as "lack or inability to meet the needs of entrepreneurship courses, strong theoretical and practical guidance in courses, lack of professional entrepreneurship teachers or entrepreneurship teachers lacking practical experience, teaching methods not suitable for entrepreneurship education, and insufficient entrepreneurship mentors". The proportion of problems involving the teaching staff exceeds 35%. This survey result clearly conveys that the existing entrepreneurship education teaching staff, regardless of quantity or quality, are facing the practical dilemma of not being able to meet the actual needs of entrepreneurship education.

Chen Lijun and other scholars (2011, p.75) believed that the construction of innovation and entrepreneurship education teachers in colleges and universities is vague, and they lack a sound management mechanism for the selection, training, evaluation and incentive of teachers in innovation and entrepreneurship education.

Jiang Deqin (2011, p.34) pointed out that the structure of innovation and entrepreneurship education in Chinese universities is unreasonable: Most of the entrepreneurship education teachers come from ideological and political majors, with the majority of young teachers, lack of doctoral students, and the professional titles of teachers are generally low. In addition, he also believes that there is a lack of effective communication mechanism between full-time and part-time teachers of innovation and entrepreneurship.

Liu Xiao and Huang Yongming (2013, p.28) pointed out that in the teachers of innovation and entrepreneurship education in colleges and universities, teachers generally lack entrepreneurial experience, the number of full-time teachers is insufficient, and the lack of multi-disciplinary talents and high-level scientific research talents.

Wu Zhen (2017, p.57) took Hefei Normal University as an example to illustrate the current situation of the construction of innovation and entrepreneurship teachers in

local application-oriented undergraduate colleges, and pointed out the construction of innovation and entrepreneurship teachers The overall level is not enough, the teacher evaluation system needs to be improved, "the lack of effective construction mechanism for the integration and training of off-campus teacher resources", and the training of innovation and entrepreneurship teachers needs to be strengthened.

Ni Yali, zhang wu (2017, p.71) proposed from the new era under the background of innovative entrepreneurship education teachers challenges and change that the current universities in our country has four problems: one is the innovation entrepreneurship education teachers structure, the second is the lack of innovation entrepreneurship education teachers guarantee mechanism, three is the teacher itself understanding of innovative entrepreneurship education deviation, four is innovative entrepreneurship teachers external working environment.

Jiang Shijun (2017, p.69) explored the main problems existing in the construction of faculty in universities from the various problems in Chinese universities: the backward concept of faculty construction, the lack of management system of faculty construction; the third, the lack of scientific and effective assessment and incentive mechanism for the construction of faculty.

Chen Xuejun et al. (2017, p.29) investigated 300 entrepreneurship teachers in 64 universities and made statistical analysis of the survey data, and found that there were deficiencies in teachers' professional background, academic research ability and entrepreneurial practice in the construction process of innovation and entrepreneurship teachers in colleges and universities.

Wang Zhiqiang et al. (2020, p.42) validated the relationship between teacher competence composition, innovation and entrepreneurship operation mechanism, and innovation and entrepreneurship education quality based on an empirical study of 1231 universities. He believed that universities must establish a support system to strengthen the sense of identity and professional development of innovation and entrepreneurship teachers.

Yao Shengzhuo (2020, p.69) pointed out that entrepreneurship education teachers team construction is the key to the sustainable development of application entrepreneurship education, but at present many universities entrepreneurship education

development is slow, mainly because the construction of teachers idea is relatively backward, serious shortage of entrepreneurship teachers, structure imbalance, professional problems.

Under the national strategy of promoting innovative development, actively carrying out entrepreneurship education in applied undergraduate colleges is an important measure to promote their innovative development, and it is also an important mission entrusted by the times to applied undergraduate colleges. Compared with traditional general education disciplines, the characteristics of entrepreneurship education require a closer alignment with the development needs of the economy, society, science and technology, a greater emphasis on cultivating practical abilities, and a combination of industry, academia, and research. This is in line with the development philosophy of applied undergraduate colleges. Therefore, whether considering the overall development of the country or the universities themselves, it is imperative for applied undergraduate colleges to carry out entrepreneurship education.

Teachers, as the organizers and managers of entrepreneurship education teaching activities and guides of entrepreneurial practice activities, are the key factors for the successful implementation of entrepreneurship education in applied undergraduate colleges. Entrepreneurship education in applied undergraduate colleges is a complex system engineering that relies on professional education, ideological and political education, and related theoretical foundations. To implement this multiple complex project well, a high-quality team of entrepreneurship education teachers is the fundamental guarantee for effectively carrying out entrepreneurship education. Strengthening the construction of the teaching staff at the same time is conducive to enhancing the theoretical knowledge and practical ability of entrepreneurship teachers, better guiding students, and cultivating more outstanding entrepreneurial talents.

Research Questions

1. What is the current situation of the teaching staff construction of innovation and entrepreneurship education in application-oriented universities in Zhejiang?

2. How to formulate guidelines for improving the teaching staff construction of innovation and entrepreneurship education in application-oriented universities in Zhejiang?

3. Are guidelines for improving the teaching staff construction of innovation and entrepreneurship education in application-oriented universities in Zhejiang suitable and feasible?

Research Objectives

1. To study the current situation of the teaching staff construction of innovation and entrepreneurship education in application-oriented universities in Zhejiang.

2. To provide guidelines for improving the teaching staff construction of innovation and entrepreneurship education in application-oriented universities in Zhejiang.

3. To evaluate guidelines for improving the teaching staff construction of innovation and entrepreneurship education in application-oriented universities in Zhejiang.

Scope of Research

Population and the Sample Group

Population

The population of this research was 1127 innovation and entrepreneurship education teachers and administrators from 7 application-oriented universities in Zhejiang, China, including Zhejiang University of Science and Technology, Zhejiang University of Water Resources and Hydropower, Huzhou Normal University, Jiaxing University, Ningbo University of Engineering, Taizhou University and Lishui University.

The Sample Group

Sample size selection of the questionnaire survey: according to the formula of estimated sample size provided by the Research Department of the National Institute of Education in the article "small sample Technology" (Krejcie & Morgan, 1970), 315 out of 1127 people were sampled by stratified sampling.

The interviewees

The interviewees in this research were 12 teachers and administrators in seven application-oriented universities in Zhejiang. The qualifications of interviewees are as follows: 1) at least 5 years of work experience in universities, 2) received the certificate in the field of innovative, 3) graduated with master's degree or above.

Expert group

The experts for evaluating the suitability and feasibility of guidelines for improving the teaching staff construction of innovation and entrepreneurship education were 15 experts from application-oriented universities in Zhejiang. The qualifications of the experts are as follows: 1) at least 10 years of work experience in application-oriented universities, 2) received the certificate in the field of innovation and entrepreneurship education, 3) graduated with doctor's degree or had at least an associate professor or above professional title.

The Variable

According to the analysis of related theories and research, characteristics of the teaching staff construction of innovation and entrepreneurship education are as follows:

1. composition of the teaching staff
2. professional qualities of the teaching staff
3. management and assessment
4. teacher training
5. supporting mechanism

Time frame

September 2023 – November 2023

Advantages

1. This study focuses on the issue of "teaching staff construction of innovation and entrepreneurship education in application-oriented universities in Zhejiang Province", fully sorts out the relevant literature at home and abroad, and constructs the analytical dimension and analytical framework. Based on the teacher questionnaire and the interview data, it is of certain significance to explore the current situation of innovation and entrepreneurship education teachers in application-oriented universities, the difficulties and the reasons for the further theoretical research on entrepreneurship education.

2. The measures proposed in this study are used to guide the teaching staff construction of innovation and entrepreneurship education in application-oriented universities in Zhejiang, improve the overall level of teachers engaging in innovation and entrepreneurship education, and build a high-quality teaching staff of innovation and entrepreneurship education.

3. It is helpful for universities to carry out scientific human resource management in the process of building innovation and entrepreneurship education teaching staff, and take targeted, feasible and operable measures, so as to improve the efficiency of the construction of teaching staff. It provides practical and popularized strategies to optimize the teacher structure, improve the organization and management mode, and improve the level of teachers.

Definition of Terms

Application-oriented universities refers to all colleges and universities that focus on undergraduate education, face regional economic and social development, rely on disciplines, have applied and professional education as the foundation, and are guided by social talent demand to cultivate high-level applied talents.

Innovation entrepreneurship education refers to an educational model that aims to cultivate talents with innovative spirit and entrepreneurial ability, with the core of cultivating students' innovative consciousness, innovative thinking, innovative ability, and entrepreneurial literacy, supported by the cultivation of students' comprehensive quality, professional skills, social responsibility, and international vision,

guaranteed by the establishment of a sound curriculum system, practical platform, mentor team, evaluation mechanism, incentive policies, etc., and guided by serving social needs, solving social problems, and promoting social development.

Teaching staff construction of innovation and entrepreneurship education refers to the teacher team established by universities in order to promote innovation and entrepreneurship education comprehensively and with high-quality, which can meet the needs of innovation and entrepreneurship education and has professional competence and corresponding management systems. It aims to promote the comprehensive development of student' innovation and entrepreneurship literacy, including full-time and part-time teachers. Full-time teachers refer to personnel specialized in entrepreneurship education and management, as well as teachers who teach entrepreneurship courses. Part-time teachers refer to teachers under the university's administrative department or other colleges, and also include guidance teachers hired from outside the university. It consists of five aspects: composition of the teaching staff, professional qualities of the teaching staff, management and assessment, teacher training and supporting mechanism.

Composition of the teaching staff refers to the proportional relationship and combination mode of the various components of the entire teaching staff, including the composition of disciplines, educational background, professional title and age, gender etc.

Professional qualities of the teaching staff refers to the basic abilities that innovation and entrepreneurship teachers should possess when engaging in innovation and entrepreneurship education and related activities. Specifically, the qualities that entrepreneurship teachers should possess include entrepreneurial ability, teaching ability, and self-development ability. Entrepreneurial ability, including the entrepreneurial spirit of teachers, theoretical knowledge of entrepreneurship, and practical abilities in entrepreneurship. Teaching ability refers to the ability of teachers to adopt appropriate teaching attitudes and methods when engaging in entrepreneurship education work. Self development ability is the conscious learning and research of entrepreneurship education by teachers, and the ability to

continuously improve their own level of entrepreneurship education through reflection and summary of experience.

Management and assessment refers to the management mechanism universities conduct to evaluate and assess innovation and entrepreneurship teachers in accordance with the assessment content, principles, and procedures stipulated in the teacher assessment regulations, aiming to evaluate the performance of teachers and improve the teaching quality.

Teacher training refers to a systematic learning process in which educational institutions, universities, education departments, or professional organizations provide training and improvement in professional knowledge, teaching skills, and educational concepts for teachers, aiming to continuously enhance their educational and teaching abilities and promote the improvement of educational and teaching quality.

Supporting mechanism refers to various supporting measures provided by the state, local governments, and universities to teachers for the normal development of teaching, including supporting content (policy support, financial guarantee, incentive system support, platform support, and entrepreneurial culture support), supporting form (how to support), supporting effect, etc.

Research Framework

According to the analysis of related theories and research, characteristics of teaching staff construction of innovation and entrepreneurship education are as follows:

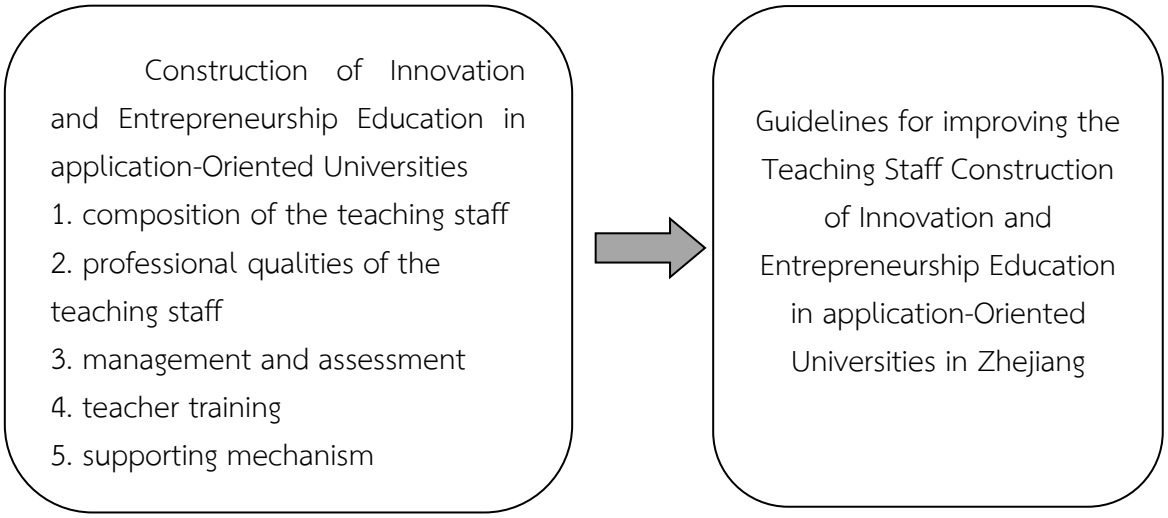

Figure 1.1 Research Framework

Chapter 2

Literature Review

This study will analyze the relevant research results at home and abroad from the following aspects:

1. Concept and theory of educational administration
2. Concept and theory of Innovation and Entrepreneurship Education
3. Concept and theory of Teaching Staff Construction
4. Context of application-Oriented Universities in Zhejiang
5. Related research

The details are as follows:

Concept and Theory of Educational Administration

Definition of educational administration

Educational administration, as a research field, originated in the United States in the early 20th century, according to the commonly accepted terminology both domestically and internationally. As an independent discipline, constructed with certain wording, it emerged after World War II.

Fu Yuzhong (1990, p.37) proposed that educational administration studies the macro management of specific process management and the entire educational activity, with the aim of finding general laws in educational administration and using them as the basis for guiding educational administrative work.

Huang Zhaolong (1992, p.13) proposed educational administration is the scientific study of "specific issues at different levels in educational administrative activities", namely "administrative management of education at all levels and management of universities at all levels".

An Wenzhu (1995, p.29) proposed that educational administration is a science that studies the phenomena and essence of educational administrative activities, and reveals the universal principles and laws of educational administrative activities.

Liu Wenxiu (1996, p.1) proposed that educational administration is the study of "the management work of various levels and types of educational administrative organs and universities" and "the science of scientific theories and action laws".

Sun Miantao (1999, p.17) proposed that educational administration is a science that studies educational administrative phenomena and reveals educational administrative laws. Among them, "educational administrative phenomena are composed of four categories: educational administrative activities, educational administration systems, educational administration mechanisms, and educational administration concepts".

Huang Zhicheng et al (1999, p.6) proposed that educational administration is a science that mainly applies the basic ideas, theories, and principles of management and education, focuses on educational practice activities, studies management issues in the education system, and reveals the general laws of educational administration.

Chen Xiaobin (1999, p.2) proposed that educational administration is a science that studies the process and laws of educational administration. According to the characteristics of educational administration objects, we can divide it into two categories: broad educational administration and narrow educational administration. The so-called broad educational administration takes the management of the entire national education system as its research object. It is a modern science guided by central or local educational laws and regulations, follows the objective laws of education, plans, organizes, guides, coordinates, and controls the entire educational administrative system and various levels and types of university organizations, so that limited educational resources can be reasonably allocated to achieve optimized management goals. The so-called narrow definition of educational administration is a modern science that takes a certain type of university organization as its research object, constructs a harmonious relationship between universities and community environments, establishes and improves university organizations and their operating mechanisms, optimizes university resources, mobilizes the enthusiasm and creativity of all university personnel, and aims to comprehensively improve the quality of education and cultivate qualified talents.

Wu Zhihong (2000, p.18) defined educational administration as a science that studies the administrative phenomena, processes, and laws of various levels and types of educational organizations and institutions.

Xiao Zongliu (2000, p.3) proposed that educational administration, also known as educational management, includes the management of education by national educational administrative agencies and the internal management of universities. With the differentiation of disciplines, educational administration has actually been divided into educational administration (excluding university administration) and university management.

Tang Daguang (2014, p.210) proposed that educational administration is a scientific discipline that focuses on studying educational administrative issues, discovering patterns, forming theories, and guiding practical activities in educational administration.

Yang Tianping (2023, p.5) proposed that educational administration is a science that studies educational administrative phenomena (or activities), reveals the essence (or laws) of educational administration, and guides educational administration practices.

In conclusion, educational administration refers to a comprehensive science that takes all educational management activities in human society (including cognitive activities, value activities, practical activities, and the unity of the three) as its research object. It aims to explain and interpret various educational management phenomena at all levels and at all times, both at home and abroad, and reveal the overall rules of educational management activities. Based on this, it constructs basic value norms for educational management to provide rational guidance and services for educational management practice.

Importance of Educational Administration

Chen Xiaobin (1999, p.5) proposed that educational administration provides methods for understanding and resolving the contradictions between the hierarchical system and specialization within universities, which helps optimize the internal management structure and improve management efficiency In addition, educational administration studies individual development needs, goals, beliefs, and motivations

to provide personalized educational strategies for universities and promote students' comprehensive development.

Wu Zhihong etal (2010, p.42) proposed that the significance of educational administration has five aspects. Firstly, it can improve management efficiency. Learning educational administration can enhance the management ability and efficiency of managers, promote the operation and development of educational institutions. The second is to promote educational reform: by studying and analyzing the problems and causes that arise in educational administration, theoretical guidance and practical support can be provided for educational reform. The third is to cultivate management talents: Educational administration provides necessary knowledge and skills for educational management personnel, cultivates a large number of excellent management talents, and provides guarantees for the sustainable development of educational administration. The fourth is to promote national development: excellent education administrative personnel can help the nation achieve modernization and industrialization of education, enhance the country's comprehensive strength and international competitiveness.

Tian Mao (2007, p.120) proposed that the main task of educational administration research is to provide new explanations for educational administrative practices that go beyond everyday customs and traditional theories. The scientific explanation of educational administrative issues in educational administration is aimed at promoting the growth of educational administrative knowledge, but it is not just about knowledge growth. It is more about better carrying out educational administrative practices, inspiring the thinking of practitioners, encouraging them to constantly reflect on themselves, and enabling them to constantly understand the true essence of educational administration.

Chu Hongqi (2009, p.24) proposed that the research significance of educational administration lies in providing theoretical support and practical guidance for improving the quality of education and promoting educational development. It can help us understand the essence and laws of educational administration, and improve the scientific and effective nature of educational management. Meanwhile, educational administration can also provide decision-making basis for policy makers,

practical guidance for educators, and better educational services for parents and students.

Yuan Yong (2010, p.7) proposed that the research significance and value of educational administration mainly lie in: firstly, by studying the operational mechanism of universities as an open social system, it reveals that the development of university systems is not only influenced by external environments, but also requires resources to be obtained from external environments. This study helps to understand how universities adapt to changes in the external environment and how to effectively utilize external resources to promote university development. Secondly, by studying the operational mechanism of universities as an open social system, it is revealed that the development of the university system is not only influenced by the external environment, but also requires resources to be obtained from the external environment. This study helps to understand how universities adapt to changes in the external environment and how to effectively utilize external resources to promote university development.

Sun Miantao (2017, p.34) proposed that educational administration provides effective management tools for universities and promotes their transformation and development by studying communication strategies and leadership development. With the emergence of new forms of education such as big data and personalized education, research in educational administration also needs to adapt to these changes, study new educational administrative models, such as the application of big data technology in the field of education, and how to use big data to improve the quality and efficiency of educational administration.

Cheng Kai (2017, p.34) proposed the importance of educational administration has the following three functions from the perspective of student work: , firstly, it can help students establish a correct outlook on life; Secondly, it can cultivate students' various abilities to enter society; Thirdly, it can test students' theoretical and practical mastery.

Framework and Tasks of Educational Administration

Huang Wei (2004, p.119) proposed that the discipline system of educational administration can be divided into five parts: educational management foundation, educational organizational management, educational resource management, educational management process, and educational management environment.

Li Xu (2012, p.16) proposed that the discipline of educational management needs to become an open ecosystem and continuously enrich its sub disciplines. On the one hand, we should pay attention to the balance between disciplinary differentiation and synthesis, in order to avoid the fragmentation of conceptual systems and theoretical research caused by excessive disciplinary differentiation. On the other hand, it is necessary to continue to strengthen the discipline construction of each sub discipline, so that each sub discipline can become an organized exploration field. Under the logical structure of the discipline system of educational management as a discipline group, they can play their different theoretical construction functions and jointly solve disciplinary problems.

Fu Feixiang (2014, p.59) proposed that there are three characteristics of educational management in the new century. Firstly, it is different from the past, focusing on the status and emotional experience of the recipients, and the research results are more prominent in highlighting the interests of the recipients. Secondly, in the current era where academic and social development are gradually integrating, it is urgent and necessary to strengthen cooperation in educational management theory research, especially in major topics and key areas, which are more prominent. Collaboration also brings about diversified benefits in research. Thirdly, the practicality of educational management research has been strengthened, and localized research has been given more attention

Li Xu and Hou Huaiyin (2022, p.59) proposed that the construction of the discipline system of educational administration should start from the following four aspects: first, pay attention to the self reflection of the discipline and carry out meta research on educational administration; The second is to explore its own theoretical logic and gradually form a disciplinary system with Chinese local characteristics; Thirdly, promote the construction of sub disciplines in educational administration and

reorganize the disciplinary system of educational administration; Fourth, multidimensional and multi-party participation in the construction of the discipline system of educational administration.

Su Junyang (2023, p.5) proposed that the task facing the construction of education administration discipline under the background of high quality is to continuously improve the quality of talent cultivation, scientific research, social services, and international exchanges in the field of education administration. In the process of promoting the construction and development of educational administration disciplines in the future, on the one hand, it is necessary to follow the inherent logical requirements of disciplinary development; On the other hand, it is necessary to overcome institutional barriers in disciplinary settings, professional planning, and other aspects. In addition, it is necessary to enhance the level of recognition within the discipline of educational administration and other disciplines towards this subject.

Yang Tianping and Xu Yu (2023, p.15) proposed that the construction of a scientific discipline system for educational administration should organically combine formal logic and dialectical logic, comprehensively apply logical thinking and methods that unify classical logic and value logic, identify the logical starting point and logical basis of the discipline, connect the concepts and categories of logical intermediaries of the discipline, and form the logical chain and system of the discipline.

Concept and Theory of Innovation and Entrepreneurship Education

Definition of Innovation and Entrepreneurship Education

Innovation and entrepreneurship education is a concept born in China, which reflects the special needs of China's higher education from the elite stage to the popularization stage. Innovation and entrepreneurship education is a new concept officially used by the Ministry of Education in 2010. Since the concepts of innovation education and entrepreneurship education are widely used at home and abroad.

Colin Ball (1989, p.50) proposed that Entrepreneurship education, in a broad sense refers to cultivate pioneering individuals, it is equally important for paid people, because institutions of choose and employ persons or individuals in addition to require hired success in career, is more and more attention to hired initiative, adventure,

entrepreneurship and independent work ability and technical, social, management skills ". UNESCO calls entrepreneurship education the "third passport" of education, giving it equal importance as academic education and vocational education.

Fashua (2006, p.35) defined entrepreneurship education as an educational activity designed to help individuals improve their willingness and ability to find investment opportunities in the society, and to strengthen the vigilance of opportunity identification.

Klapper & Tegtmeier (2010, p.552) defined entrepreneurship education from the aspects of skills and ability cultivation, and believes that entrepreneurship education is a means of a group to use behavior, skills and innovation ability to achieve personal achievements.

Alberti (2004, p.17) believed that entrepreneurship education is a process of organized and formal transmission of entrepreneurial ability, including the ideas, skills and self-awareness that individuals need in entrepreneurship.

Zhang Tao (2007) defined entrepreneurship education as an education system that cultivates the comprehensive quality of the educated people and enables them to have a certain entrepreneurial ability. This comprehensive quality includes entrepreneurial consciousness, entrepreneurial thinking and entrepreneurial skills.

Duan Congyu (2016, p.43) defined "entrepreneurship education" respectively from three levels: broad sense, narrow sense and narrower sense. Entrepreneurship education, which enhance the entrepreneurial knowledge and skills, influence the entrepreneurial thinking and improve the entrepreneurial opportunities.

Yan Liqin (1999, p.3) defined innovation education as "innovation education is to cultivate people's innovative spirit and innovation ability as the basic value orientation of education, its core is on the basis of the nine earnestly, in the process of full implementation of quality education, in order to meet the challenge of the era of knowledge economy, focus on study and solve the basic education how to cultivate primary and middle university students innovation consciousness, innovation spirit and innovation ability", " innovation education the fundamental goal is the comprehensive reform of education, emphasize integrity, comprehensive and systematic."

Zhang Lichang (1999, p.22) thought "the so-called innovation education, refers to such a kind of education, using the positive influence of genetics and environment, play to the leading role of education, fully mobilize students 'understanding and practice of subjective initiative, pay attention to the subject of students' innovation consciousness, innovation spirit, innovation skills awaken and development, form innovative personality, to adapt to the future social needs and meet the students subject full development of education."

Zeng Shuiying (2009, p.7) understood innovative education as the educational concept, educational thought, educational form and educational mode needed by the knowledge economy and information age, aiming at cultivating students' innovative consciousness, innovative spirit, innovative ability and innovative skills, and with modern university as the main realization mechanism.

Huang Zhengquan (2010, p.16) called educators "information people", thus defining innovative education as the education of cultivating information people. The contents of education include new humanistic education, new mental education, new knowledge education, new education structure, new education system, new education evaluation, etc.

Cao Shengli and Lei Jiaxiao (2009, p.6) believed that innovation and entrepreneurship education is a kind of creative educational practice and an educational reform to solve the employment problem of college students.

Liu Baocun (2010, p12) believed that the spirit and ability related to entrepreneurship can be obtained through education, and innovative and entrepreneurial talents can be cultivated through education.

Zhang Bing and Bai Hua (2014, p.48) proposed that innovation and entrepreneurship education is the embodiment of the unity of knowledge and practice in China, and is the education combining learning with doing, teaching with learning, and doing with ability transformation.

The Ministry of Education (2010) formally used the concept of "innovation and entrepreneurship education" in the "Opinions on Promoting Innovation and Entrepreneurship Education in Institutions of Higher Learning", and clearly defined it as

"a teaching concept and mode produced to meet the needs of economic society and national development strategy",

Shi Guoliang (2010, p45) thought that "innovation entrepreneurship education as a new education idea, is not simple superposition innovation education and entrepreneurship education, but on the concept and content to realize the innovation or entrepreneurship education beyond", its core connotation "is cultivating students' innovative spirit, entrepreneurial consciousness and entrepreneurial ability, guide institutions of higher learning constantly update education idea, reform talent training mode, education content and teaching methods, talent training, scientific research, social service, implementation from the knowledge to pay more attention to ability and quality training, improve the quality of talent training".

Wang Zhanren (2015, p.34) pointed out that the term "innovation and entrepreneurship education" comes first in the order of "innovation", which emphasizes that entrepreneurship is based on innovation and sublimates the connotation and level of entrepreneurship, thus essentially coordinating the direction of entrepreneurship. "Entrepreneurship" after the connotation of the application attributes of innovation, is pointing to entrepreneurship innovation. He also pointed out that innovation and entrepreneurship education in colleges and universities should be promoted by groups, stages and levels, considering both the majority and a minority.

Cheng Baohua (2015, p.9) pointed out that innovation entrepreneurship education is the entrepreneurship education, innovation education and professional education, through the development of new teaching mode, pay attention to the quality of students 'practice, make students recognize self and life, form a good self-consciousness, promote students' innovative spirit and dedication to work, and constantly excavate the students 'potential, achieve the students' innovative entrepreneurial behavior. Through innovation and entrepreneurship education, it will provide high-level human resources for social and economic development to cope with the challenges of knowledge economy and global integration, improve the quality and diversified orientation of higher education, and promote the maximum development of students.

Li Yayuan (2016, p.85) thought that the basic connotation of innovation and entrepreneurship education is: to cultivate students' innovative and entrepreneurial consciousness, innovative and entrepreneurial thinking, innovative and entrepreneurial spirit and innovative and entrepreneurial ability of the new education concept and mode of innovative and entrepreneurial quality as the core, is designed to comprehensively reform the traditional education teaching, and cultivate innovative entrepreneurial talent education.

Xiao Hua (2018, p.71) summarized innovation and entrepreneurship education as a quality education. It is believed that innovation and entrepreneurship education should " take the quality of cultivating students 'innovation and entrepreneurship thinking as the purpose, the innovation and entrepreneurship education courses and practical activities as the carrier, and the improvement of students' comprehensive quality as the goal

Zhu Jiade (2024, p.98) believed that the Opinions do not grasp the personality characteristics of innovation and entrepreneurship education and touch the essence of innovation and entrepreneurship education, because professional education is also an educational concept and model that adapt to economic and social development and national development strategy. He from talent and education two academic dimensions, think the essence of innovative entrepreneurship education is a different from professional education but on the basis of professional education, using interdisciplinary means, methods and ways to cultivate certain interdisciplinary accomplishment, ability to solve complex problems of science and technology and social problems of talent education activities.

In conclusion, innovation and entrepreneurship education refers to an educational model that aims to cultivate talents with innovative spirit and entrepreneurial ability, with the core of cultivating students' innovative consciousness, innovative thinking, innovative ability, and entrepreneurial literacy, supported by the cultivation of students' comprehensive quality, professional skills, social responsibility, and international vision, and guaranteed by the establishment of a sound curriculum system, practice platform, mentor team, evaluation mechanism, incentive policies, etc.,

and guided by serving social needs, solving social problems, and promoting social development.

Importance of Innovation and Entrepreneurship Education

Kolin Ball (2005, p.11) pointed out in his research on human career development in today's society that the current development of society has put forward more requirements for humanity. On the one hand, it is necessary to have strong professional and academic abilities, and on the other hand, a sense of career ambition and exploration ability are more important. They can also be seen as the innovative and entrepreneurial abilities of talents. He stated that in social practice, people tend to value the former ability, while paying relatively less attention to innovation and entrepreneurship ability. People who lack innovation and entrepreneurship abilities will be eliminated by society with the development of the times. Excellent entrepreneurs should possess professional and academic abilities, as well as flexible organizational planning, management, and coordination skills.

Berbegal-Mirabent (2005, p.343) conducted in-depth research on entrepreneurship education in universities from multiple dimensions, and proposed that utilizing entrepreneurship education can enhance the comprehensiveness of university performance evaluation. At the same time, it is pointed out that the transfer of knowledge and technology is the guarantee of entrepreneurship education in the process of entrepreneurship education. The mutual transfer of knowledge and technology between different universities not only promotes their own development, but also benefits the technological advancement of the country and society. On the contrary, the advancement of technology and the level of entrepreneurship education directly affect the mutual transfer of knowledge and technology.

Edward de Bono (2010, p.45) proposed that in today's society, entrepreneurial talents should possess strong entrepreneurial thinking, and entrepreneurial thinking itself is to better adapt to current and future socio-economic development. At the same time, one should also have a corresponding knowledge reserve to provide more knowledge security for entrepreneurship, thereby promoting the development of society and humanity.

Li Qiongyuan (2017, p.6) believed that innovation and entrepreneurship education in local undergraduate universities is conducive to the transformation to application-oriented universities. Through the development of innovation and entrepreneurship education, promote the reform of major construction and curriculum construction, explore the path of application-oriented talents with the integration of industry and education, university-enterprise cooperation, and employment and entrepreneurship, promote the improvement of the practical teaching system of application technology universities, which is conducive to the realization of the goal of application-oriented talents training.

Shi Jianwei (2018, p.168) believed that innovation and entrepreneurship education is the need of national strategic development under the new normal of economy, and arises under the background of information age and innovative society. The construction of an innovative country requires high-quality talents with innovative spirit and entrepreneurial consciousness, which requires colleges and universities to continue to promote the effective development of quality education, improve the quality of education and teaching and the training quality of college students, strengthen college students' innovative spirit and entrepreneurial consciousness in the process of innovation and entrepreneurship education, and finally sublimate to the entrepreneurial behavior.

Shi Hualei (2020, p.227) believed that innovation and entrepreneurship education has a more significant role in promoting the overall development of students' ability and quality, and is an effective way to solve the contradiction of employment structure in colleges and universities. Innovation entrepreneurship education in the development of the ability to college students to provide more accurate guidance and help, of various types of entrepreneurial activities to conduct a comprehensive and detailed analysis summary, to the classic case, make college students more accurate deeply realize the difficulties and focus, let the students' entrepreneurial success rate is higher. And innovation and entrepreneurship education to cultivate excellent innovation and entrepreneurship talents, which is the inherent requirement of building an innovative country and society.

Li Chenxue, Yu Zhensheng (2021, p.89) changed the concept of innovation and entrepreneurship education, Strengthening education in innovation and entrepreneurship, It is an important measure to improve the comprehensive ability of college students and promote the comprehensive development of college students, It is conducive to help college students who are still in the confused stage to update their employment ideas, Encourage them to strive for their own ideals and goals in life, Enhance the learning motivation of college students; Changing the concept of innovation and entrepreneurship education in colleges and universities, Building an innovation and entrepreneurship education system for college students, It will also help college students master their entrepreneurial methods, Guide them to combine the textbook knowledge, enhance the practical ability, And cultivate the psychology and will to overcome difficulties and take risks.

Wang Tangwen (2023, p.160) believed that the advanced experience of innovation and entrepreneurship education in European and American countries should be learned. First, students should be trained to develop their creative potential, explore hot issues, pursue cutting-edge technologies, and provide new development plans and strategies to the society, and cultivate students' leadership. High-quality innovation and entrepreneurship education can expose students to diversified thinking methods and advanced production tools, so that students can have enough skills to lead a team. Finally, China's innovation and entrepreneurship education from "rapid growth" to "high-quality development".

Characteristic of Innovation and Entrepreneurship Education

Xie Xiulan (2017, p..115) believed that innovation and entrepreneurship education in foreign universities has the following characteristics: First, innovation and entrepreneurship education occupies a dominant position. Foreign colleges and universities understand innovation and entrepreneurship education from the perspective of education innovation, system innovation and talent training innovation, and regard it as the mission of college talent training. In addition to the corresponding curriculum system, innovation and entrepreneurship education is also permeated into every link of talent training and closely combined with professional education. Second, the guarantee mechanism for innovation and entrepreneurship education is relatively

perfect. The innovation and entrepreneurship education guarantee system comes from the multi-party coordination of the government, universities, venture capital institutions, science and technology parks, entrepreneurship training institutions, entrepreneurship qualification assessment institutions, entrepreneurs alumni association, entrepreneurs association and other social organizations. Third, the coordinated implementation of innovation and entrepreneurship education. The synergy of the implementation of innovation and entrepreneurship education is manifested in two aspects: multiple teachers and systematic curriculum. On the one hand, foreign universities not only select excellent professors and researchers as innovation and entrepreneurship teachers, but also pay attention to selecting excellent talents from enterprises to serve as innovation and entrepreneurship mentors or visiting professors, so as to jointly build high-quality innovation and entrepreneurship teachers by means of full-time and part-time work and cooperation between inside and outside the university. On the other hand, it jointly integrates various forms of courses, including basic theory courses of innovation and entrepreneurship, courses of innovation and entrepreneurship combined with majors, and courses of innovation and entrepreneurship practice, to systematically carry out innovation and entrepreneurship education. Fourth, we will open up the education platform for innovation and entrepreneurship. Innovation and entrepreneurship centers, innovation and entrepreneurship bases and other innovation and entrepreneurship parks should adopt the principles of openness and market-oriented principles to jointly promote the commercialization and industrialization of innovation and entrepreneurship results.

Guo Mengjie (2022, p.151) believed that the common characteristics of the innovation and entrepreneurship education system in developed countries are mainly reflected in five aspects: policy encouragement, market regulation, diversified participation, relaxed environment and lifelong education. First, we have formulated policies to encourage innovation and entrepreneurship, which has strengthened the willingness of the general public to receive education on innovation and entrepreneurship. Second, give full play to the role of the market mechanism, the market mechanism can give full play to the role of resource allocation, at the same

time, the market factors effectively integrate into the innovation and entrepreneurship education, effectively improve the success rate of innovation and entrepreneurship of teachers and students of colleges and universities. Third, institutions of higher learning cooperate with multiple subjects, adhere to the government leading, with institutions of higher learning as the main body, and realize the joint participation of various aspects and multiple institutions. Fourth, actively create a relaxed social environment, and encourage potential entrepreneurs to participate in innovation and entrepreneurship activities through "social praise" and economic and technical support. Fifth, we will promote lifelong education on innovation and entrepreneurship, and encourage innovators and entrepreneurs to pursue lifelong learning.

Fan Hui (2019, p.13) believed that innovation and entrepreneurship education should be carried out at different levels. The first level is mainly to stimulate students 'awareness of innovation and entrepreneurship, this level of education for all students, through the thinking training of innovation and creativity, the second level of innovation and entrepreneurship education mainly cultivate students' knowledge and skills needed for entrepreneurship. Different majors, choose different industries for entrepreneurship, need different professional knowledge and skills, and with the university entrepreneurship incubator, entrepreneurship competition and other activities to create a good innovation and entrepreneurship atmosphere; the third level of targeted entrepreneurship project guidance. Invite social personnel with entrepreneurial experience or teachers with entrepreneurial experience to form a mentor team to provide expert guidance for the small entrepreneurial team of real projects selected in the second level or willing students at the second level; the fourth level is follow-up support for entrepreneurship. Each level of innovation and entrepreneurship education content needs to be matched with different levels of teachers. The first level requires teachers to have innovative and entrepreneurial thinking and awareness. This level is general education, which requires the largest number of teachers. The second level requires the participation of professional teachers and the addition of professional and industry guidance. It is difficult for teachers at the third and fourth levels to undertake alone, and they need to rely on social forces, for example, alumni with entrepreneurial experience, social

entrepreneurs, outstanding people of industry associations, etc. These personnel are also a very important part of the teaching staff.

Zhou Yan et al (2019, p.24) believed that innovation and entrepreneurship education must be closely combined with the national construction, social needs and the reality of university characteristics, highlighting the characteristics of The Times and the main line of Chinese characteristics, which is an important feature of the "double first-class" construction in the new era, and has a positive impact on the construction of first-class universities and first-class disciplines. The innovation and entrepreneurship education ecosystem is to build the "three integration" ecological development trend of integrating ideological and political education into innovation and entrepreneurship education, innovation and entrepreneurship education into professional education, and innovation and entrepreneurship education into quality education.

Zha Yunfei (2021, p.42) believed that China's higher education in the new era has given new characteristics to innovation and entrepreneurship education, which is mainly reflected in the adherence to reform and innovation. Innovation in the concept of running universities, organization and management, system construction, and teaching mode, so as to promote the development of higher education. Second, we need to deepen the integration of industry and education. We will promote the construction of disciplines and majors adapted to industrial transformation and upgrading, gradually improve the participation of industrial enterprises in running universities, improve the diversified university-running system, realize the deep integration of industry and education, and comprehensively implement the mechanism of university-enterprise collaborative education. Third, to enhance the sense of service. Innovation and entrepreneurship education is a kind of higher education that is most closely combined with regional economy, industry and industry. It is the unshirkable responsibility of innovation and entrepreneurship education to highlight the advantages of innovation and entrepreneurship education and serve higher education reform, social development needs and national strategic needs.

Wang Hongcai (2021, p.42) believed that innovation and entrepreneurship education is a local concept born in China, which contains a basic theoretical assumption, namely, that every college student has the potential of innovation and

entrepreneurship. Innovation and entrepreneurship education has brought an ideological revolution to the Chinese academic circle, introducing the western teaching idea of equal discussion of "I love my teacher, I love the truth more" into the classroom and campus, and to equal teachers and students.

Concept and Theory of Teaching Staff Construction

Definition of Teaching Staff Construction

Ma Ting (2016, p.8) believed that the connotation of faculty construction mainly refers to the optimization of the number and structure of the faculty of teachers and the quality to meet the development characteristics of the university through various measures.

Wu Song (2017, p.43) thought that innovative entrepreneurial teachers team construction is to cultivate a batch of complete professional knowledge structure and professional ability and entrepreneurial knowledge and entrepreneurial ability and professional technology, through innovation, development and application information ability, using entrepreneurial learning and entrepreneurial normal skills to explore college students potential entrepreneurial intention of teachers.

Juan-juan liu (2017, p.10) thought that application undergraduate colleges "faculty construction" refers to build a reasonable structure, good quality full-time teachers, improve teachers 'employment, training, evaluation, title promotion and treatment management, and constantly improve teachers' professional quality and moral quality, strengthen the stability of the teaching staff.

Zhang Xueliang (2018, p.10) believed that the teaching staff refers to all the teachers engaged in the theory teaching and practice teaching of innovation and entrepreneurship education, which can be divided into two parts: "full-time teachers" and "part-time teachers" for innovation and entrepreneurship. "Full-time teachers" refers to the teachers who organize their personnel relations in higher vocational colleges (which can be represented by the file preservation unit) and specially undertake (or only undertake) the teaching tasks of innovation and entrepreneurship education. In other words, the full-time teachers of innovation and entrepreneurship only undertake the innovation and entrepreneurship education and teaching work, but

have no other work. Compared with full-time (full-time) teachers, other teachers engaged in innovation and entrepreneurship are called "part-time teachers" for innovation and entrepreneurship, which can be divided into two parts: "part-time teachers in university" and "part-time after-university teachers in university". "Part-time teachers" refer to teachers who organize personnel relations in higher vocational colleges and are engaged in innovation and entrepreneurship education and teaching in the university, but also hold other positions or other jobs. "Off-campus part-time teachers" refer to those who can engage in innovation and entrepreneurship education and teaching within a certain period of time, but whose organizational and personnel relations are not in higher vocational colleges.

Tan Yao (2021, p.9) believed that the construction of teachers refers to the establishment of a team of "double teachers and double abilities" teachers with sufficient quantity, reasonable structure, high comprehensive quality and strong practical ability through the introduction, cultivation, assessment and incentive measures, so as to meet the construction and development needs of application-oriented undergraduate universities.

Li Yuhan (2022, p10) believed that the connotation of the teaching staff is mainly a teacher group composed of independent individual teachers. Generally, it is composed of the professional structure, educational background structure, age structure, professional title structure, and salary and welfare situation of individual teachers. The purpose of teaching staff construction is to optimize the quantity, structure and quality of teachers through various ways, so as to adapt to the development characteristics of the university.

Xia Siyu (2022, p.10) thought that innovation entrepreneurship faculty construction refers to the comprehensive high quality to promote entrepreneurship education, can meet the needs of entrepreneurship education, with professional quality and corresponding management system of teachers, aims to promote the all-round development of students' entrepreneurial accomplishment, including full-time teachers and part-time teachers. Full-time teachers refer to those who specialize in the management of entrepreneurship education and teachers who teach entrepreneurship courses. Part-time teachers refer to teachers subordinate to the

administrative departments of universities or other colleges, and also include instructors hired from personnel from outside the university。

In conclusion, the teaching staff construction of innovation and entrepreneurship education refers to the teacher team established by universities to comprehensively and high-quality promote entrepreneurship education, which can meet the needs of entrepreneurship education, has professional competence and corresponding management systems, and aims to promote the comprehensive development of students' entrepreneurial literacy, including full-time and part-time teachers. Full time teachers refer to personnel specialized in entrepreneurship education management and teachers who teach entrepreneurship courses, while part-time teachers refer to teachers affiliated with university administrative departments or other colleges, as well as guidance teachers hired from external personnel.

Importance of Teaching Staff Construction

Gu Liuwan (2017, p.47) thought that the complexity of innovative entrepreneurial activities to teachers' knowledge, skills, experience, comprehensive quality put forward higher requirements, which makes the universities in innovation entrepreneurship education at the same time, also appeared the innovation entrepreneurship education teachers is weak, less related work researchers, caused the innovation entrepreneurship education is difficult to carry out the situation. At present, the weakness of innovation and entrepreneurship education in colleges and universities is that the training of innovative talents cannot meet the demand, and the quality of entrepreneurship teachers has become the most important factor restricting the development of entrepreneurship in colleges and universities in China. How to find the correct positioning, strengthen the connotation, highlight the characteristics, build a "double energy" innovation and entrepreneurship teachers that pay equal attention to learning and technology, combine both professional and part-time, and develop steadily, to ensure the development of college students' innovation and entrepreneurship education, has become the key to improve the quality of higher education talent training and promote the teaching reform.

Zhang Haiyan (2017, p.47) thought innovation entrepreneurship education is a aims to cultivate students' innovative entrepreneurial spirit, consciousness, ability of system engineering, is the teachers use scientific training plan, the new education idea, complete sets of theoretical system, appropriate education form to guide students to success towards the process of innovative entrepreneurship, teachers is the core of the whole education process, therefore, to complete the innovation entrepreneurship education goal, form a professional innovation entrepreneurship education teachers is the key.

Li Tongbin (2017, p.112) believed that one of the important reasons hindering the development of innovation and entrepreneurship education in China is that many teachers lack relevant professional knowledge and experience. Because the quality of teachers is directly related to the quality of innovation and entrepreneurship education, it is particularly important to improve the professional quality and practical ability of teachers. Innovation and entrepreneurship need comprehensive quality and practical ability. The corresponding innovation and entrepreneurship education should be a comprehensive and practical discipline, which requires teachers to have comprehensive knowledge and professional ability in all aspects.

Zeng Yuyun (2018, p.241) believed that innovation and entrepreneurship education is a systematic project that combines professional education and basic theory education, with rich content and strong operability. In the next few years, the shortage of high-quality innovation and entrepreneurship teachers will become the main bottleneck hindering the development of innovation and entrepreneurship education in Chinese universities. Therefore, in order to achieve a higher, faster and stronger development of innovation and entrepreneurship education, colleges and universities must rely on a powerful team of teachers to make it one of the core competitiveness of colleges and universities.

Yao Shengzhuo (2020, p.70) believed that at present, our country application university innovation entrepreneurship education teaching team construction, but there are still some problems, and application university innovation entrepreneurship education teachers to set up the new idea, to develop new aptitude, to master flexible and effective new methods, to have the practice leading the new literacy requirements

is far away. It is the key to promote the development of innovation and entrepreneurship education in application-oriented universities to build a full-time and part-time faculty with both theoretical and practical experience, so as to promote the construction of an innovative country and improve the quality of higher education in China.

Liu Dekang (2020, p.51) believed that strengthening the construction of innovation and entrepreneurship education has three meanings: first, it meets the needs of innovation and entrepreneurship talent training; second, the needs of high-quality development of universities; and third, the needs of innovation and entrepreneurship competition. By creating innovative entrepreneurial excellent teachers team, improve the innovative entrepreneurship training mechanism, optimize the evaluation system, improve innovative entrepreneurial teachers structure and ability, refine teachers management, strengthen the team construction, improve innovative entrepreneurial teachers overall level and ability, improve the quality of innovative entrepreneurial personnel training, further promote application reform and development of innovative entrepreneurship education in colleges and universities.

Dong Sheng, Zhuang Xuecun (2020, p.113) believed that it is of great significance to strengthen the construction of college students 'innovation and entrepreneurship education: first, it is conducive to promote teachers' own growth and improve teaching level; second, it is conducive to strengthen college students' education and promote all-round development; third, it is conducive to relieve employment pressure and maintain social stability.

Tan Yao (2021, p.2) pointed out from the point of view of human capital that the knowledge, skills, qualifications and experience reflected in people are the specific manifestations of human capital. application undergraduate colleges can form an employment relationship with innovation and entrepreneurship teachers, which can explore the human capital of teachers. The knowledge of the application faculty can provide intellectual support for the construction of the university; the faculty provides many possibilities for the development; the qualifications and experience are the capital of the university. Without application-oriented teachers, application-oriented universities cannot normally perform the functions of cultivating application-oriented

talents, carrying out scientific research and providing social services. It can be said that the application-oriented teachers are the blood of application-oriented undergraduate colleges, providing vitality and vitality for the normal operation of application-oriented undergraduate colleges.

Shi Yongjiao and Ji Xichun (2022, p.112) believed that the construction of teachers for innovation and entrepreneurship education in local universities has three practical meanings. First, it meets the needs of the country for cultivating innovative and entrepreneurial talents. Excellent teachers are the foundation of innovation and entrepreneurship education, and the core guarantee for the smooth implementation of innovation and entrepreneurship education with both quality and quantity guaranteed. Excellent innovation and entrepreneurship teachers can guide students to engage in different ways of innovation and entrepreneurship according to their own professional advantages, provide necessary theoretical and practical support for students' innovation and entrepreneurship, and improve the success rate of local college students. Second, it meets the needs of innovation and entrepreneurship education reform in local universities. Innovation and entrepreneurship teachers, as the primary resource and the primary executor of the development of innovation and entrepreneurship education, are the lifeline and basic guarantee for the local universities to implement the innovation and entrepreneurship education reform. It is necessary to effectively integrate innovation and entrepreneurship education into the current professional education and basic cultural education, strengthen the effective connection between professional education and innovation and entrepreneurship practice, build an integrated system of theory and practice, improve the influence of superior disciplines in local colleges and universities, and promote local college graduates to achieve high-quality entrepreneurship and employment. Third, it meets the needs of improving students' innovation and entrepreneurship ability. College students 'innovative entrepreneurial competition for college students' innovative entrepreneurial ability put forward higher requirements, therefore, local colleges and universities must strengthen the construction of innovative entrepreneurship education teachers, meet the requirements of college students 'demand for innovative

entrepreneurial ability and practical knowledge, enhance the college students' innovative entrepreneurial ability and ability to adapt after graduation.

Zhao Xueping (2023, p.31) believed that the necessity of strengthening the construction of innovation and entrepreneurship teachers is reflected in three aspects: First, the construction of teaching staff is the guarantee of the quality of innovative talent training. Second, strengthening innovation and entrepreneurship teachers are the main force to promote innovation and entrepreneurship education research. Third, innovation and entrepreneurship teachers, as an important human resource in the university, provide the talent guarantee for the construction of an innovative country.

Characteristic of Teaching Staff Construction

Li Hui (2011, p.13) pointed out that the Australian Ministry of Education stipulates that the construction of innovation and entrepreneurship teaching staff includes the training, the management, the assessment of the teaching staff, and the transformation of scientific research achievements of the teaching staff. It has formed a unique system in the training of innovation and entrepreneurship teachers, including four stages of on-the-job training, induction training, on-the-job training and enterprise training. At the same time, the content of teacher training is to realize the hierarchical training system. According to the different levels of the qualification certificates to be obtained and the different training courses, after the completion of each level 1 training, the corresponding certificates will be issued. This has formed a more comprehensive innovation and entrepreneurship teacher training curriculum system.

Wu Handong and Yu Yang (2015, p.9) believed that the effective way to improve the university innovation and entrepreneurship teachers is to pay attention to the source channel of teachers, the proportion of quantity structure, the teachers' own ability and quality, and the teacher management system.

Li Guoqiang (2017, p.52) believed from the experience of foreign innovation and entrepreneurship education that the factors affecting the construction of innovation and entrepreneurship teachers include capital investment, management system, innovation and entrepreneurship environment and the ability of innovation and entrepreneurship teachers, among which the ability of innovation and

entrepreneurship teachers is related to educational background, entrepreneurship experience and teaching experience.

Li Meng (2018, p.17), based on the four dimensions of previous studies, added the dimension of "teachers' job satisfaction" from the perspective of teachers, which believes that it can reflect the construction of the teaching staff. The five dimensions are: the number of teachers, the professional quality of teachers, the exchange and training of teachers organized by colleges and universities, the construction of the management mechanism of teachers, and the job satisfaction of teachers.

Qiu Xiufang et al. (2018, p.101) analyzed the current situation of innovation and entrepreneurship teacher team construction in Chinese universities, and based on practical problems, proposed the following paths for the construction of innovation and entrepreneurship education teacher team: firstly, to improve the quantity and quality of the teacher team; secondly, to strengthen the training and assessment of innovation and entrepreneurship education teachers; thirdly, to do a good job in the professional title evaluation and regular assessment of innovation and entrepreneurship education teachers.

Zhang Xueliang (2018, p.16) summarized, organized, and classified indicators expressing the construction of innovation and entrepreneurship education teacher teams in vocational colleges based on the collection of relevant research results in recent years, and formulated the "Survey on the Current Status of Innovation and Entrepreneurship Education Teacher Team Construction in Vocational Colleges". The factors affecting the construction of innovation and entrepreneurship teacher teams are divided into four parts: teacher team composition, teacher professional development, teacher education and teaching needs, and teacher evaluation and assessment

Xu Xiaozhou (2019, p.85) drew lessons from the experience of foreign studies, combined with the actual research results of three universities in Zhejiang province, through the form of questionnaire and interview, from the perspective of the contradiction between supply and demand of entrepreneurship education teachers proposed the construction of four dimensions: entrepreneurship education teachers

management, entrepreneurship education teachers, the cultivation of entrepreneurship education teachers, entrepreneurship education teachers.

Liang Jingyi (2020, p.85) divided the construction of teaching staff into five dimensions: teacher structure, teacher management, teacher training, teacher guarantee and teacher evaluation. Among them, the teacher structure includes the age structure, educational background structure, professional and technical position structure, and source structure of innovation and entrepreneurship education teachers. The guarantee mechanism refers to the safeguard measures provided to teachers by the state, local governments and colleges and universities for the normal development of teaching. Teacher management refers to the establishment of a special teacher management department, which is responsible for the daily management and work guidance of teachers. Teacher cultivation means that the university will regularly organize teachers to conduct teaching training and organize teachers to participate in various educational and teaching exchange activities to improve teachers' teaching level and professional ability. The guarantee mechanism refers to the safeguard measures provided to teachers by the state, local governments and colleges and universities for the normal development of teaching.

Li Yuhan (2022, p.15) referred to the questionnaire compiled by the Innovation and Entrepreneurship Education Working Committee of Jiangsu University Teaching Management Research Association, and divided the teacher team construction of innovation and entrepreneurship education into five dimensions: discipline construction, professional evaluation, teacher management, professional development and self-cognition.

Qiao Tingting (2022, p.25) drew on the research results of existing scholars in China, referred to the opinions of relevant experts and teachers, and modified the research dimensions of domestic scholars to construct five dimensions for the construction of innovation and entrepreneurship education teaching staff in vocational colleges: the composition dimension of entrepreneurship education teaching staff, the professional quality dimension of entrepreneurship education teaching staff, the training dimension of entrepreneurship education teaching staff, the evaluation

dimension of entrepreneurship education teaching staff, and the guarantee dimension of entrepreneurship education teaching staff.

Song Lai, Xia Siyu (2022, p.41) divided the construction of entrepreneurship education teachers into three dimensions based on the theory of teacher specialization: teacher literacy, management mechanism and support system. Entrepreneurship teacher literacy refers to the entrepreneurial ability, teaching ability and self-development ability, It is the internal core power for regulating the elements of the development of teachers, including selection, training and incentive. It is the key link of the government, enterprises and entrepreneurship foundations, and is an important external force to promote the development of entrepreneurship education faculty.

Cui Yuan et al. (2023, p.90) found through the investigation of some national entrepreneurship and innovation demonstration universities that the construction of innovation and entrepreneurship education teachers has the following characteristics: the combination of full-time and part-time teachers has improved the quality of teachers; the source of teachers is stable, and the selection conditions are similar; the training awareness and training topics; various incentive measures, and the government promotion and the participation of social subjects.

Table 2.1 The results of the synthesis of teaching staff construction characteristics

Researcher / Character	Li Hui (2011)	Wu Handong (2015)	Li Guoqiang (2017)	Li Meng (2018)	Qiu Xiufang (2018)	Zhang Xueliang	Xu Xiaozhou (2019)	Liang Jingyi (2020)	Li Yuhan (2022)	Qiao Tingting	Song Lai (2022)	Cui Yuan (2023)	Total
composition of the teaching staff		√		√	√	√	√	√		√		√	8
professional qualities of the teaching staff		√	√	√		√		√	√	√	√	√	9
management and assessment	√	√	√	√	√	√	√	√	√	√	√	√	12
teacher training	√	√		√	√	√	√	√	√	√		√	10
supporting mechanism			√				√	√		√	√	√	6

According to table 2.1, the researchers analyzed and synthesized documents, concepts, theories, and researches related to teaching staff construction, which consisted of Li Hui (2011), Wu Handong (2015), Li Guoqiang (2017), Li Meng (2018), Qiu Xiufang (2018), Zhang Xueliang (2018), Xu Xiaozhou (2019), Liang Jingyi (2020), Li Yuhan (2022), Qiao Tingting (2022), Song Lai (2022), Cui Yuan (2023). The researcher used the criteria to consider the corresponding characteristics to use it as a framework for research in this study. By selecting characteristics with a frequency of

6 or more. Which can be synthesized in 5 characteristics as follows: 1) composition of the teaching staff; 2) professional qualities of the teaching staff; 3) management and assessment; 4) teacher training; 5) supporting mechanism.

Composition of the teaching staff

Qin Xiaohong (2007, p.96) believed that the structure of the teaching staff in institutions of higher learning refers to the relatively stable state formed by the correlation mode and interaction of the teaching staff in institutions of higher learning.

Teng Xiangdong et al (2009, p.88) believed that "teacher team structure" refers to the staffing and composition of personnel with different characteristics in the groups where universities undertake teaching work.

Wang Zixin (2009, p88) believed that the structure of teachers refers to the proportion and coordination relationship of the personnel composition elements in the full-time teachers. The main elements are six aspects, including the age structure, educational structure, professional title structure, gender structure, student-teacher ratio structure and the number of full-time and part-time teachers.

Qiao Tingting (2022, p.26) believed that which teachers are made of, where entrepreneurial teachers come from, what is the degree and major of entrepreneurial teachers, and how the entrepreneurial experience of entrepreneurial teachers. Specifically including the main body of entrepreneurship teachers, the source of entrepreneurship teachers, the background (education and experience) and other contents.

Wang Shukun et al. (2023, p.26) believed that the general requirements for the construction of teachers in colleges and universities are also the basic guarantee of teaching quality, which includes academic background structure, professional title structure, age structure, academic relationship structure, discipline and specialty structure.

In conclusion, composition of the teaching staff refers to the proportional relationship and combination of various components of the entire teaching staff, including the professional composition, educational background, professional title composition, age composition, gender composition, etc. of teachers.

Professional qualities of the teaching staff

Meng Wanjin (2004, p.57) believed that teachers' professional quality refers to the comprehensive characteristics of knowledge, skills, moral character, concept, behavior and personality formed and growing in the process of developing from professional to professional development and ensure the excellent completion of education and teaching tasks.

Jing Bailong (2012, p.57) thought that teachers' professional quality refers to when a teacher is engaged in the profession should be the basic quality and requirements, the teachers of professional teachers and general literacy and quality is on the basis of individual general quality formed and developed, is also a teacher qualified for the basic education teaching of professional quality.

Mei-lan Chen, Shen Keyin (2014, p.37) thought that teachers 'professional quality refers to the teachers in the education teaching activities, determine its teaching effect, the students' physical and mental development has direct and significant influence on the sum of the psychological quality, it includes as a teacher should have knowledge, ability, education concept and education affection, etc.

Yang Yuanye (2017, p.4) believed that teachers' professional quality refers to the unique professional quality formed and developed by teachers in long-term teaching practice and teacher training, including three dimensions of professional concept, professional knowledge and professional ability.

Xia Siyu (2021, p.23) believed that entrepreneurial teachers' literacy refers to the basic ability that teachers should have in entrepreneurship education and related activities. Specifically speaking, the qualities that entrepreneurial teachers should have include entrepreneurial ability, teaching ability and self-development ability.

Qiao Tingting (2022, p.26) referred to the theoretical knowledge and practical knowledge of entrepreneurship, the teaching methods used, and whether they can judge the wind direction and trend of entrepreneurship from a professional perspective. Specifically, it includes teaching knowledge (including entrepreneurial theory knowledge and entrepreneurial practice knowledge), teaching methods and teaching ability.

In conclusion, professional qualities of the teaching staff refers to the basic abilities that innovation and entrepreneurship teachers should possess when engaging in innovation and entrepreneurship education and related activities. Specifically, the qualities that entrepreneurship teachers should possess include entrepreneurial ability, teaching ability, and self-development ability. Entrepreneurial ability, including teachers' entrepreneurial spirit, entrepreneurial theoretical knowledge, and entrepreneurial practical abilities. Teaching ability refers to the ability of teachers to adopt appropriate teaching attitudes and methods when engaging in entrepreneurship education work. Self development ability refers to the conscious learning and research of entrepreneurship education by teachers, the ability to reflect and summarize experiences, and continuously improve their own level of entrepreneurship education

Management and assessment

Chen Yue (2016, p.15) believed that the management of teaching staff in colleges and universities refers to an activity in which colleges and universities plan, command, combine, adjust, train and motivate teachers in the process of the management of teachers.

Tian Yao (2018, p.14) believed that the management of university teachers refers to the management of the human resources department, based on the university development goal and demand, the use of professional human resource management theory and method, reasonable to the university teachers configuration, development, coordinate the interpersonal relationship between the teachers, the teachers from the employment, assessment, deployment, training, and retirement process, a comprehensive scientific management and regulation, so as to achieve the purpose of efficient use of the university teachers.

Xu Wei et al. (2021, p.105) believed that teacher management is a process in which universities establish rules and regulations and reward and punishment measures to ensure that teachers establish correct educational concepts, clarify responsibilities, rights and obligations, mobilize teachers' enthusiasm, and constantly improve the level of teachers.

Qiao Tingting (2022, p.26) believed that the management and evaluation of innovation and entrepreneurship teachers' team refers to how the achievements of entrepreneurship teachers are evaluated and recognized. Specifically, it includes the evaluation subject (who participates in the evaluation), evaluation content (scientific research results, entrepreneurial practice, basic performance), evaluation form (result evaluation and process evaluation), evaluation effect and other contents.

In conclusion, management and assessment refers to the examination and evaluation of innovative and entrepreneurial teachers by universities in accordance with the assessment content, principles, and procedures of the teacher assessment regulations, with the aim of evaluating the performance of teachers and improving the management mechanism of teaching quality.

Teacher training

The Ministry of Education 'Regulations on Teacher Training (1996, p1) defined teacher training as continuing education for teachers to better perform their job duties.

Li Hui (2011, p.11) proposed that teacher training refers to the process of professional learning and training for educators in the areas of educational subject knowledge, educational teaching theory, and educational management. Its main purpose is to improve the educational quality and teaching level of teachers, enabling them to better complete educational and teaching tasks and promote the comprehensive development of students.

Zhou Ping (2014, p.9) believed that teacher training refers to the promotion of professional, academic and personal development by providing complete and continuous learning experience and activities. Generally speaking, teacher training is to conform to the trend of social development and meet the requirements of education and curriculum reform, and organize in-service teachers to carry out various levels and forms of learning activities in a planned way, so as to promote the sustainable development and improvement of in-service teachers in professional, academic and personality.

Wu Handong (2015, p.9) proposed that teacher training not only includes compensation and updating knowledge, but also includes various aspects such as helping teachers improve their educational level, understand new achievements in educational research, enrich professional cultural knowledge, and enhance teaching skills. The teacher training system is a prerequisite and condition for improving the quality of education and teaching, and is of great significance for enhancing teachers' professional competence and educational ability.

Zhang Chengxu (2021, p.9) thought teacher training refers to on-the-the-job work in education teachers accept in improving professional theory and ability of on-the-job training, also includes the practice teaching ability of education activities, but also includes has on-the-job work, but on the ability and level, does not have job required teachers to accept all kinds of training work.

Qiao Tingting (2022, p.26) referred to what is the goal of entrepreneurship education for entrepreneurship teachers, and how to train entrepreneurship teachers, etc. Specifically, it includes the training objectives of entrepreneurship teachers, the training content of entrepreneurship teachers, the training forms (on-campus and off-campus training), the training effect and other contents.

In conclusion, teacher training refers to a systematic learning process in which educational institutions, universities, education departments, or professional organizations provide teachers with professional knowledge, teaching skills, and educational concepts, aiming to continuously improve teachers' educational and teaching abilities and promote the improvement of educational and teaching quality. The teacher training system is an important guarantee for improving the quality of education and teaching.

Supporting mechanism

Li Guoqiang (2017, p.54) proposed that supporting mechanism including material security mechanism, working environment mechanism, incentive investment mechanism, job promotion mechanism, policy support mechanism, etc.

Xu Xiaozhou (2019, p.77) proposed that supporting mechanism is a comprehensive system aimed at providing comprehensive support and development opportunities for teachers to ensure the quality of education and their professional growth.

Liang Jingyi (2020, p.33) believed that it refers to various safeguard measures provided to teachers from the state, local governments and universities for the normal development of teaching.

Qiao Tingting (2022, p.26) believed that it refers to the external guarantee subjects for the development of entrepreneurial teachers in higher vocational colleges, what to maintain and support, and in what form of guarantee. The specific contents include the guarantee subject (government, university, enterprise), guarantee content (policy guarantee, fund guarantee, incentive system guarantee, platform guarantee and entrepreneurial culture guarantee), guarantee form (how to guarantee), guarantee effect, etc.

Cui Yuan (2023, p.92) believed that it is a multidimensional and comprehensive system aimed at providing comprehensive support and guarantee for teachers through a series of policies, mechanisms, and measures, thereby improving the quality of education and the professional development of teachers.

In conclusion, supporting mechanism refers to various guarantee measures provided by the state, local governments, and universities to teachers for the normal development of teaching, including guarantee content (policy guarantee, funding guarantee, incentive system guarantee, platform guarantee, and entrepreneurial culture guarantee), guarantee form (how to guarantee), guarantee effect, etc.

Context of Application-Oriented Universities in Zhejiang

At present, China's higher education type mainly includes research university, teaching research university, application undergraduate university and professional (vocational) university four types, research universities mainly cultivate scientific research talents, teaching research university training teaching and scientific research talents, higher vocational college mainly training skilled (technical) talents. Different from the previous three, the application-oriented undergraduate courses

mainly cultivate application-oriented innovative talents. application undergraduate talent training concept is, cultivate good at management, production, service and management of a line of high technology application talents, it to adapt to the regional economic and social development as the goal, emphasizes the students 'practical ability, knowledge structure and comprehensive quality, build curriculum system and teaching content training scheme, attaches great importance to the cultivation of college students' technology application and management ability. The concept of "application-oriented undergraduate" was first seen in the 1960s, when European and other countries began to vigorously develop application-oriented undergraduate education. Such universities directly serve industrial and agricultural production and focus on cultivating specialized talents to solve practical production problems. The term "application-oriented undergraduate" first appeared in the late 1990s. Gong Zhenwei (1998, p.41) first proposed "application-oriented undergraduate" in "Application-oriented undergraduate should Pay attention to Creative training". It can be seen that the "application-oriented undergraduate education" in China is not very long, and the research period is mainly concentrated since 2002. How to define the connotation of "application undergraduate course"? Scholars have different opinions. He Chenghui, Su Qun (2002, p.2) thought, "application undergraduate education is 'specialist education, is a kind of' cultivate practical operation level of technical talents education level, application undergraduate course is different from ordinary undergraduate course, nor three years of higher vocational capacity, it compared with ordinary undergraduate course, more emphasis on application and skill, it compared with specialized subject level, emphasize certain basic education, emphasize certain subsequent development." Sun Guangyong (2002, p.67) proposed that "application-oriented universities" are divided into broad sense and narrow sense. In the broad sense, application universities refer to all institutions of higher learning that take application disciplines, application theory and application technology as the main research objects and cultivate application talents at all levels. In a narrow sense, application-oriented universities refer to the university groups that serve the local economic and social development and meet the talent and employment aspirations of young students, with "application-oriented" positioning, mainly

composed of local undergraduate colleges, new undergraduate colleges, private undergraduate colleges and independent secondary colleges. Wang Mingyi (2014, p.9) believes that some of the local undergraduate universities are new undergraduate universities, which are taken to carry out application research and cultivate application-oriented talents as their own responsibility, and their development direction is established as "application-oriented undergraduate courses". The concept of "application-oriented undergraduate college" can be divided into broad and narrow sense. In the broad sense, "application-oriented undergraduate college" refers to a university with undergraduate education, oriented to regional economy and society, based on disciplines, based on application-oriented professional education, and oriented by social talents to cultivate high-level application talents. In the narrow sense, "application-oriented undergraduate colleges" refer to the newly built undergraduate colleges and the newly upgraded undergraduate institutions after 1999. From the practice of higher education in China for more than 10 years, the so-called "application-oriented undergraduate colleges" refer to those universities with undergraduate education, oriented to regional economy and society, based on disciplines, based on application-oriented professional education, and oriented to cultivating high-level application talents. This kind of colleges and universities are generally newly built undergraduate universities with short running time, etc. "application-oriented" is their active exploration of their own university-running orientation.

At the end of 1980s, Chinese colleges and universities enrolled students separately from junior college and undergraduate courses. A number of junior colleges took the lead in proposing the training of application talents and made active exploration from their own perspective. Some undergraduate universities also raised the development of application science, application liberal arts and application disciplines. With the emergence and rapid development of a number of newly built undergraduate colleges and universities, the stratification phenomenon of college enrollment in China is becoming more and more prominent. The dislocation development and the guidance of national policies make these batch of newly built undergraduate colleges and universities choose the orientation of application talent

training. In 1999, as the national orientation for the 21st century education revitalization action plan clearly put forward "by 2010 higher education enrollment rate close to 15%" strategic target, and enacted in 2003, the law of the People's Republic of China to encourage, support and guide the social capital for higher education policy measures, not only fully open the development of the popularization of higher education in China, also for application undergraduate education development provides a good opportunity. At the turn of the century, Nanjing Institute of Technology took the lead in putting forward the slogan of running an application-oriented undergraduate university. In July 2002, the Department of Higher Education of the Ministry of Education held a seminar on the training mode of application-oriented undergraduate talents in Nanjing Institute of Technology. The minutes of the 29 undergraduate universities attending the conference were called "application-oriented undergraduate universities", which was the first time that the title of "application-oriented undergraduate universities" was officially used in the government minutes.In 2011, Jinling Institute of Science and Technology took the lead in proposing to transform from a new undergraduate university to a new application-oriented undergraduate university, and soon developed into an "emerging application-oriented undergraduate university" and an "emerging application-oriented university". The exploration of theory and practice is still developing and progressing, and the Party and the government are also actively guiding the training of application-oriented talents, application-oriented undergraduate education and the construction and development of application-oriented undergraduate colleges. Since 2014, the state has issued a series of policies to vigorously develop modern vocational education, promoting China's application-oriented undergraduate education into a period of transformation and development. On May 2,2014, the State Council "the decision about speed up the development of modern vocational education" for the first time from the national policy level clearly put forward "guide ordinary undergraduate course colleges and universities to application colleges transformation" requirements, and in 2015 three ministries jointly issued "on the guidance of ordinary undergraduate course colleges and universities to apply opinions", to guide some local undergraduate course colleges and universities to application transformation made a comprehensive

deployment. In March 2015, the 12th session of the National People's Congress three times by the government work report put forward "guide part of local undergraduate universities to application", the party through the fifth plenary session of the eighteenth on the thirteenth five-year plan for national economic and social development advice "clear" encourage qualified ordinary undergraduate universities to application transformation ", the country in a planned way to guide and develop application undergraduate education, also marks the application undergraduate course development in our country into a new historical period.In terms of quantity, according to the statistics of the Education Quality Assessment Center of the Ministry of Education, as of May 31,2022, there are a total of 1,270 ordinary undergraduate colleges and universities in China, of which 674 are identified as application-oriented undergraduate universities, accounting for 53.07% of China's ordinary undergraduate colleges and universities, more than half of the total. In terms of educational type, based on the existing public and private universities, the application technology colleges and teaching service colleges and the talent training modes and types are richer. In terms of reform, the construction of application undergraduate colleges has developed from the orientation and methods of talent training to the deep integration of production and education and pays more attention to the innovation of application undergraduate talent training mode.

The development of application-oriented undergraduate education in China has five characteristics: First, it adheres to the target orientation of application-oriented talent training. Since 2014, in the country has been clear about the guide and support the development of application undergraduate education policy situation, the original and new transformation of application undergraduate colleges and universities, are in the educational practice continuously deepen comprehensive reform, optimization of application talents training system, promote application talents training ability, under the background of first-class undergraduate education construction, cohesion high level application undergraduate education construction. Second, to build a comprehensive application-oriented professional system. Docking with local pillar industries and construct main professional structure; connect with local characteristic industries to form a characteristic professional system; connect the development of

emerging industries and promote the construction of new majors; connect with major national strategies and stimulate the vitality of professional development. Third, the implementation of the deep integration of production and education training mode. The specific approach is to jointly design talent training programs, jointly build a professional curriculum system, jointly develop professional curriculum materials, jointly carry out education and teaching, and jointly build a "double-qualified" teacher team. Fourth, the development mode of coordinated development. On the one hand, it guides some local universities to transform to application through policy documents, encourages and supports more local universities to carry out exploration and practice of application talents training; on the other hand, by increasing policy preference and support, it promotes the integration of industry and education, discipline construction, curriculum teaching reform, and innovation of talent training mode, so as to facilitate the construction of high-level application undergraduates. Fifth, the reform measures integrated into the modern vocational education system. First of all, the application-oriented talent training system in China is improved, and then the system of internal communication and connection with vocational education and other education is constructed, and finally the supporting system for the operation of vocational education is formed.

In order to promote more undergraduate universities to strengthen application-oriented construction, Zhejiang Provincial People's Government and Provincial Department of Education have issued a series of policy documents to unify thinking, reach consensus, and provide policy guidance for the overall development of local application-oriented undergraduate universities. As shown in the following table, in the early stage of transformation and development in 2015, Zhejiang Province issued relatively many policies, which focused on accelerating the application-oriented transformation of undergraduate universities in the province, carrying out pilot projects and implementing programs, and giving full play to the demonstration and leading effect. Since 2016, relevant policies focus on the classified evaluation of ordinary undergraduate universities and strive to optimize the structure of higher education in the province. Meanwhile, a number of application undergraduate universities lead the forefront through the 13th Five-Year Education

Plan in China. Since 2017, Zhejiang province has issued a series of policies, such as improving the quality of teachers, integration of the foundation, pilot integration of industry and education, accelerating demonstration construction, supporting industry-education integration project, and promoting the high-quality development of vocational education, to make comprehensive efforts to build a high-quality vocational education system.

Zhejiang Provincial Department of Education took the lead in carrying out the application undergraduate university construction pilot project of "application-oriented connotation construction". In January 2016,43 application universities in Zhejiang Province participated in the application. After evaluation, 10 universities such as Hangzhou Normal University and Ningbo Institute of Engineering included the first batch of application universities construction; in January 2019,10 universities including Zhejiang University of Media and Communication were shortlisted in the second batch of application universities construction pilot demonstration list. Implement the dynamic evaluation of the five-year construction period, and establish a withdrawal mechanism to ensure that the pilot institutions play a demonstration effect. In 20 application undergraduate course construction pilot demonstration led, 57 undergraduate institutions in Zhejiang province, there are 43 undergraduate course colleges and universities on the application development path, accounting for about 75% of the provincial undergraduate colleges and universities, each application undergraduate course universities application professional accounted for more than 70% of the total, in application professional students accounted for more than 80% of the students, part of the university become the model of the construction of the application colleges and universities.

Promoting the transformation of local ordinary undergraduate universities to application-oriented universities has formed a broad consensus among various localities, industries, enterprises and universities in Zhejiang Province, and the construction effect of the coordinated development of application-oriented undergraduate universities is mainly reflected in the "three improvements". First, we will enhance the suitability of application-oriented education, and significantly improve our ability to serve the society. Colleges and universities should take the initiative to

adapt to the new normal of economic and social development, deeply integrate with regional economic and social development through structural adjustment, building platforms, creating carriers, and building mechanisms, and play a strategic supporting role in the implementation of national strategies and regional economic development. During the "13th Five-Year Plan" period, application-oriented undergraduate universities in Zhejiang province fully integrated into the local economic and social development according to their own foundation, and built platforms with local governments, enterprises and industry associations to continuously enhance the suitability of application-oriented education and significantly improve their ability to serve the society. Second, we will improve the application talent training system and upgrade the level of training in an all-round way. In December 2020, the education departments of all provinces (autonomous regions and municipalities directly under the Central government) approved and published the recommended list of new doctoral and master's degree authorization centers in 2020, and submitted it to The State Council for approval. According to the data collected by the websites of education departments of provinces (autonomous regions and municipalities), the number of universities recommended by Zhejiang Education Department in 2020 is 9, much higher than that of other provinces (autonomous regions and municipalities). Although the final result needs to be approved by the Degree Office of The State Council, it can be seen that the overall development of application-oriented universities in Zhejiang Province has an obvious effect. In just three years, 9 application-oriented universities have met the basic requirements of new master's authorization units in 2020. From the perspective of the distribution of colleges and universities, Hangzhou 3, Ningbo 3, Jiaxing 1, Taizhou 1, Lishui 1, can blossom everywhere. Third, deepen the integration of industry and education, cooperation between universities and enterprises, and steadily improve the quality of collaborative education. During the "13th Five-Year Plan" period, application-oriented undergraduate universities in Zhejiang province have further deepened the integration of industry and education and university-enterprise cooperation, initially formed a mechanism of university-enterprise cooperative education, and steadily improved the quality of talent training.

Related Research

The research of Xu Xiaozhou and Li Yongzhi (2010, p.27) has proved that the professional quality and teaching level of innovation and entrepreneurship teachers are the key to the smooth development of innovation and entrepreneurship education. They believe that the ideal innovation and entrepreneurship teachers include entrepreneurship theory teachers, entrepreneurship practice instructors, entrepreneurship mentors, entrepreneurship consultants, successful entrepreneurs, entrepreneurs and other types.

Zhu Xiaoyun et al. (2012, p.83) proposed that the academic community divides the innovative education teachers in higher vocational colleges into two forms. One is the teachers who are mainly responsible for teaching innovation and entrepreneurship projects, who usually have rich working experience and management experience; second, the teachers who implement general education are mainly taught by the teaching staff or staff of ideology and politics, employment service, youth League committee, etc. Therefore, there is a great lack of innovation and entrepreneurship teachers with professional background and subject foundation in higher vocational colleges in China. At present, China is in the early stage of exploration and creation of innovation and entrepreneurship education. Innovation and entrepreneurship teachers in higher vocational colleges have not systematically learned systematic theories of innovation and entrepreneurship, and it is difficult for them to have entrepreneurial experience and innovative thinking that meet the needs of entrepreneurial practice.

Yao Jinfeng (2013, p.76) pointed out that from the perspective of teacher growth, the training system for entrepreneurial teachers has not yet been formed. A large number of entrepreneurial teacher training institutions should be set up to accelerate the process of professionalization of entrepreneurial teachers. Through professional training, on the one hand, a large number of urgently needed entrepreneurship teachers can be trained, and on the other hand, new entrepreneurship teachers can also be trained. Entrepreneurship teachers must take part in systematic learning and select qualified teachers through selective examinations. Only the certificate through the vocational qualification certification

examination, on the post, so as to continuously improve the quality of entrepreneurial teachers, to achieve specialization.

Alexande JP (2015, p.4) pointed out that Australia has formed a unique system in teacher training, including four stages: on-the-job training, induction training, on-the-job training and enterprise training. At the same time, the content of teacher training is to realize the hierarchical training system. According to the different levels of the qualification certificates to be obtained and the different courses of the training, the corresponding certificates will be issued. This has formed a more comprehensive teacher training curriculum system.

Liu Caixia et al. (2015, p.47) pointed out that the current assessment and incentive mechanism of innovation and entrepreneurship education is not perfect, and even the lack of incentive mechanism, which has a great negative impact on the enthusiasm of teachers to participate in innovation and entrepreneurship education and teaching. They suggested that the higher authorities should make full use of the respective advantages of the government, society and enterprises, and jointly establish a university-enterprise interaction mechanism to improve the professional skills and quality of the teachers.

Liu Zhongyan (2016, p89) based on the elaborating the management theory, thought innovation entrepreneurship education teachers to reasonably positioning their role, universities to set up new education idea, establish multidisciplinary background of teachers, at the same time through the target management and process control of cohesion interactive innovation faculty management mechanism, build high quality teacher information exchange platform and quality training platform.

Wang ping (2016, p.56) combined in the construction of the present situation of research with the famous community college entrepreneurship teachers team excellent management measures, based on our education conditions, points out that innovative entrepreneurial faculty construction in higher vocational colleges from: construction mainly part-time teachers of teachers, set up the universality and high standard two kinds of teacher access qualification system, broaden the path of

innovative entrepreneurship teachers training, improve the scientific system of teachers security and incentive policy and so on four aspects, improve.

Pang Yifei (2016, p.113) analyzed the gap between independent colleges in Guangxi and application technology universities in terms of teacher team construction from the perspective of the requirements for teachers in application technology universities. The author found that in the process of transformation, independent colleges generally have difficulties in changing their teaching philosophy, lack of practical experience and high mobility of new young teachers, and weak core competitiveness. The author attempts to create a teaching staff that is in line with the positioning of application technology universities by transforming the concept of teacher introduction, improving the teacher guarantee mechanism, cultivating "dual qualified teachers", and arranging teachers to work in enterprises for training.

Sun Ting (2017, p.107) suggested that higher vocational teachers should be organized to conduct practice and train for innovation and entrepreneurship, and the evaluation and reward mechanism for innovation and entrepreneurship of higher vocational teachers should be reasonably formulated. Give full play to the advantages of industries and enterprises, build a balance of full-time and part-time innovation and entrepreneurship teachers, and maintain the close connection between teachers' innovation and entrepreneurship activities and regional economic development.

Wu Song (2017, p.32) made comparative study of the United States, Germany, Britain and Australia and other universities outstanding innovative entrepreneurial teachers construction, mainly from the teachers composition, management, training, security and evaluation of five dimensions, analysis of foreign excellent experience, from the government, enterprises and social organizations, colleges and universities and teachers own five dimensions put forward countermeasures and suggestions.

Tang Qiongzi (2018, p.31) analyzed the construction of innovation and entrepreneurship teachers from two aspects of internal and external energy enhancement. First, start with the construction of curriculum system, the construction of teaching staff, and enhance the internal driving force of "teachers + curriculum"

through the construction of innovation and entrepreneurship culture. For the construction of teachers, she suggested changing the current situation of part-time and single teachers in innovation and entrepreneurship education, and establishing a teacher team combining full-time and part-time teachers; second, by promoting the scientific evaluation system of innovation and entrepreneurship education in universities, to increase external energy. She proposed to take innovation and entrepreneurship education and teaching performance as important indicators to measure teachers' teaching ability, extend the teacher evaluation cycle, make the evaluation more objective, and encourage work to gain something, more work and more gain.

Yuan Fang (2018, p.85) proposed that the key to strengthening the innovation and entrepreneurship teaching staff lies in adopting a combination of "internal introduction" and "external assistance", encouraging teachers with certain theoretical and practical foundations to devote themselves to innovation and entrepreneurship education, and hiring teachers with rich entrepreneurial practical experience outside the university to join the university innovation and entrepreneurship education teaching staff.

Jiang Deqin (2018, p.34) pointed out that a key factor in the development of innovation and entrepreneurship education is the construction of teaching staff. They are the main body of the construction of curriculum system, the organization of teaching activities, project practice guidance and educational theory research. He studies and analyzes the development status of innovation and entrepreneurship teachers in China at the present stage. He believes that the main problems of teacher construction are the lack of quality, low overall level, unreasonable structure, the lack of off-campus part-time jobs, and the lack of disciplines, professional leaders and academic backbone specialized in innovation and entrepreneurship education. He then proposed to establish the establishment of full-time teachers and other construction channels and overall planning.

Yue Yonghong et al. (2019, p.73) pointed out that compared with foreign countries, the entry threshold of higher vocational teachers in China is lower, and they often only make requirements for academic qualifications, rather than making

specific requirements on teachers' professional qualification certificates and practical experience. He believes that he should learn from the German "dual system" teacher access mechanism, and build a comprehensive and strict higher vocational teacher access system from the aspects of teacher qualification certificate, professional qualification certificate, practical experience, to reflect the requirements of teachers' ability standard.

Zhang Dan (2019, p.31) studied the performance of innovation and entrepreneurship education in 47 undergraduate universities in Hubei Province, and found that the development of innovation and entrepreneurship education in universities in Hubei province has some problems, such as the low construction level of entrepreneurship and innovation collaborative platform, and the obvious unbalanced development of inter-university differences. The paper proposes that the innovation and entrepreneurship education should be regarded as an ecosystem, focusing on four aspects to provide countermeasures and suggestions for improving the healthy development of innovation and entrepreneurship education in Hubei. First, the government should improve the policy supply of innovation and innovation education and strengthen the inspection and supervision; the second is to rationalize the innovation education mechanism and consolidate the entity status of the education; the third is the innovation education mode to promote the development of innovation education; the integration of achievements and inter-university collaborative platform to promote the implementation of innovation and innovation education.

Xu Xiaozhou (2019, p.60) constructed the research dimensions of entrepreneurship education teaching staff in China on the basis of fully absorbing the experience of building excellent entrepreneurship education teaching staff, and analyzed the specific content of each dimension: firstly, in the dimension of entrepreneurship education teacher composition, it is required that the number and scale of entrepreneurship education teachers should be significantly increased, and the proportion of professional teachers and part-time teachers should be balanced; In the dimension of entrepreneurship education teacher management, establish an independent management organization to manage entrepreneurship teachers and

give them a sense of belonging; In the dimension of cultivating entrepreneurship education teachers, it is necessary to establish training objectives and content; In terms of guaranteeing entrepreneurial teachers, sufficient special funds, specialized teacher incentive systems, and the construction of entrepreneurial teacher exchange platforms need to be provided. In terms of the strategy for the construction of entrepreneurship education teaching staff, scholar Xu Xiaozhou believes that the construction of entrepreneurship education teaching staff should fully leverage the joint efforts of the government, universities, enterprises, and other stakeholders from different perspectives, in order to substantially promote the quality of entrepreneurship education teaching staff.

Zhang Haiyan et al. (2020, p.79) proposed that there are practical problems of lack of mass entrepreneurship and innovation teachers in higher vocational colleges. Then, based on the methodology of lean entrepreneurship, the lean development model of mass innovation teachers is constructed from six levels of goal, structure, type, ability, path and foundation. It is proposed to use peer education, precise training, scientific research guidance, project driven, project-based guarantee and other paths to improve the teaching and research ability, entrepreneurial operation ability and self-development ability.

Niu Yanfei (2020, p.73) points out that the current higher vocational innovation entrepreneurship faculty construction shows the shortage of teachers and professional is not strong, thus caused the innovative entrepreneurial faculty structure imbalance, professional level and practice ability, and make the innovative entrepreneurship education teachers in higher vocational colleges and regional economic development is not close enough.

Wang Zhiqiang et al. (2020, p.43) verified the relationships among teachers, including the ability composition of teachers, the operation mechanism of innovation and entrepreneurship, and the quality of innovation and entrepreneurship education, and believed that universities must build a support system to strengthen the identity and professional development of teachers in mass entrepreneurship and innovation.

Song Lai, Xia Siyu (2022, p.40) conducted a questionnaire survey and text analysis to analyze the situation of entrepreneurship education faculty in 100 demonstration universities for entrepreneurship and entrepreneurship. They found that the current construction of entrepreneurship education faculty has achieved significant results, but there are also problems such as insufficient number of teachers, unreasonable structure, inadequate selection, training and incentive measures, and insufficient support from social entities such as government and enterprises. Based on this, countermeasures are proposed from five aspects: attaching importance to the leading position of entrepreneurship teachers, improving the construction of entrepreneurship disciplines, enhancing the enthusiasm of entrepreneurship teachers, improving management mechanisms, and building a "five in one collaboration" construction pattern.

Zhao Xueping (2023, p.32) believed that due to the limited "social status" and "social recognition" of teachers' identity and happiness of teachers, it is urgent for external forces to promote their individual professional development and the improvement of group professional level. However, at the present stage, the organizational support for innovation and entrepreneurship teachers is very weak, which is reflected in three aspects: first, the simple support for innovation and entrepreneurship work; the second is the lack of emotional support for innovation and entrepreneurship work; third, the lack of material support for innovation and entrepreneurship work. Therefore, she proposed that three dimensions of emotional support, work support and interest support can be adopted to support the construction of "mass entrepreneurship and innovation" teachers in colleges and universities.

Chapter 3

Research Methodology

This study adopts questionnaire survey and interview method, aiming to study about 1) to study the current situation of the teaching staff construction of innovation and entrepreneurship education in application-oriented universities in Zhejiang. 2) to provide guidelines for improving the teaching staff construction of innovation and entrepreneurship education in application-oriented universities in Zhejiang. 3) to evaluate guidelines for improving the teaching staff construction of innovation and entrepreneurship education in application-oriented universities in Zhejiang. In order to address the issues described in Chapter 1 and to achieve the above research objectives, the researcher adopted the following research procedures.

1. The population / the sample Group (study group and sample)
2. Research methods and steps
3. Research Instruments
4. Data Collection
5. Data Analysis
6. Data interpretation

Phase 1: To study the current situation of the teaching staff construction of innovation and entrepreneurship education in application-oriented universities in Zhejiang.

The population / Sample Group

The Population

The population of this research was 1327 teachers of innovation and entrepreneurship education and administrators from 7 application-oriented universities in Zhejiang, China, including Zhejiang University of Science and Technology, Zhejiang University of Water Resources and Hydropower, Huzhou Normal University, Jiaxing University, Ningbo University of Engineering, Taizhou University and Lishui University.

The Sample Group

According to Krejcie and Morgan's sampling table (1970), the sample group of this phase was 315 teachers and administrators from 7 application-oriented universities in Zhejiang. By using stratified random sampling and simple random sampling.

Table 3.1 Lists of university and sample size

Application-Oriented Universities in Zhejiang	Population	Sample group
Zhejiang University of Science and Technology	205	45
Zhejiang University of Water Resources and Hydropower	164	42
Huzhou Normal University	203	43
Jiaxing University	226	52
Ningbo University of Engineering	153	39
Taizhou University	232	57
Lishui University	144	37
Total	**1327**	**315**

Research Instruments

Questionnaire

The instrument to collect the data for objective one, to study the current situation of the teaching staff construction of innovation and entrepreneurship education in application-oriented universities in Zhejiang was a questionnaire. The questionnaire was designed based on teaching staff construction from five aspects: 1) composition of the teaching staff, 2) professional qualities of the teaching staff, 3) management and assessment, 4) teacher training, 5) supporting mechanism. The questionnaire was divided into two parts:

Part 1: Survey about personal information of respondents, classified by gender and educational background.

Part 2: Survey the current situation of the teaching staff construction of innovation and entrepreneurship education in application-oriented universities in Zhejiang. The criteria for data interpretation based on a five-point Likert's scale, as follows:

5 refers to the level of teaching staff construction of innovation and entrepreneurship education at the highest level

4 refers to the level of teaching staff construction of innovation and entrepreneurship education at a high level

3 refers to the level of teaching staff construction of innovation and entrepreneurship education at a medium level

2 refers to the level of teaching staff construction of innovation and entrepreneurship education at a low level

1 refers to the level of teaching staff construction of innovation and entrepreneurship education at the lowest level

The data interpretation for average value is based on Rensis Likert (1932). The data interpretation is as follows:

4.50 – 5.00 refers to the highest level

3.50 – 4.49 refers to high level

2.50 – 3.49 refers to medium level

1.50 – 2.49 refers to low level

1.00 – 1.49 refers to the lowest level

Constructing a questionnaire process

The construction process of the questionnaire is as follows:

Step 1: Reviewing and analyzing documents, concepts, theories, and research related to teaching staff construction of innovation and entrepreneurship education.

Step 2: Construct the questionnaire about the current situation of the teaching staff construction of innovation and entrepreneurship education in application-oriented universities in Zhejiang. Then the researcher sent the

questionnaire outline of questionnaire to the thesis advisors to review and revise the contents according to the suggestions.

Step 3: The index of objective congruence (IOC) of the questionnaire was examined by five experts.

Step 4: Revise the questionnaire based on the experts' suggestions.

Step 5: The questionnaires were distributed to 30 administrators in application-oriented universities in Zhejiang for try-out. The reliability of the questionnaire was obtained by Cronbach's Alpha Coefficient.

Step 6: The questionnaire was application to 315 teachers and administrators in application-oriented universities in Zhejiang.

Data Collection

The data collection for objective 1: to study the current situation of the teaching staff construction of innovation and entrepreneurship education in application-oriented universities in Zhejiang, as following procedure:

Step 1: The researcher requested requirement letter form the graduate university, Bansomdejchaopraya Rajabhat University for requiring to collect the data from 315 teachers and administrators in application-oriented universities in Zhejiang.

Step 2: The researcher distributed a total of 315 questionnaires to 315 teachers and administrators.

Data Analysis

The data analysis in this research, the researcher analyze the data by package program, as follows:

Step 1: The personal information of the respondents was analyzed by frequency and percentage, classified by gender and education background.

Step 2: The current situation of the teaching staff construction of innovation and entrepreneurship education in application-oriented universities in Zhejiang in five following aspects: 1) composition of the teaching staff, 2) professional qualities of the teaching staff, 3) management and assessment, 4) teacher training, 5) supporting mechanism was analyzed by Mean and standard deviation.

Phase 2: To provide guidelines for improving the teaching staff construction of innovation and entrepreneurship education in application-oriented universities in Zhejiang.

Key information

The interviewees

Selection of interviewees and sample size: In these 7 application-oriented universities, stratified sampling method was adopted to select teachers and administrators responsible for innovation and entrepreneurship education management for interviews with a total of 12 people.

Research Instruments

Structured Interview

The instrument to collect the data for objective two is to formulate the model for developing the teaching staff construction of innovation and entrepreneurship education in application-oriented universities in Zhejiang. The structured interview was designed based on the current situation of the teaching staff construction of innovation and entrepreneurship education in application-oriented universities in Zhejiang in five following aspects: 1) composition of the teaching staff, 2) professional qualities of the teaching staff, 3) management and assessment, 4) teacher training, 5) supporting mechanism.

The structured interview is divided into two parts:

Part 1: the personal information of interviewees, classified by interviewee, interviewer, education background, work experience, interview time, and interview date.

Part 2: the questions about suggestions for developing the current situation of the teaching staff construction of innovation and entrepreneurship education based on five aspects: 1) composition of the teaching staff, 2) professional qualities of the teaching staff, 3) management and assessment, 4) teacher training, 5) supporting mechanism, for teachers and administrators in application-oriented universities in Zhejiang.

Constructing a structured interview process

The construction process of the structured interview is as follows:

Step 1: Reviewing and analyzing documents, concepts, theories, and research related to innovative leadership of university administrators.

Step 2: Construct the structured interview about suggestions for developing the current situation of the teaching staff construction of innovation and entrepreneurship education based on five aspects: 1) composition of the teaching staff, 2) professional qualities of the teaching staff, 3) management and assessment, 4) teacher training, 5) supporting mechanism. Then send the outline of the structured interview to the thesis advisors to review and revise the contents according to the suggestions.

Data Collection

The data collection for objective 2: to formulate the guidelines for improving the teaching staff construction of innovation and entrepreneurship education in application-oriented universities in Zhejiang, as follows:

Step 1: The researcher requested a requirement letter from the graduate university, Bansomdejchaopraya Rajabhat University requiring to interview teachers and administrators in application-oriented universities in Zhejiang.

Step 2: The researcher interviews the teachers and administrators one by one through an online platform or face-to-face depending on the interviewee's convenience.

Data Analysis

The structured interview about guidelines for improving the teaching staff construction of innovation and entrepreneurship education in application-oriented universities in Zhejiang was analyzed by content analysis.

Phase 3: To evaluate the suitability and feasibility of guidelines for improving the teaching staff construction of innovation and entrepreneurship education in application-oriented universities in Zhejiang.

Key information

Expert group

The experts for evaluating the suitability and feasibility of strategies was 15 experts from application-oriented universities in Zhejiang. The qualifications of the experts are as follows: 1) at least 10 years of teaching experience in innovation and entrepreneurship education in application-oriented universities, 2) be a associate professor or above, 3) with a doctor's degree or above.

Research Instruments

Evaluation form

The instrument to collect the data for objective three, to evaluate the model for developing the teaching staff construction of innovation and entrepreneurship education in application-oriented universities in Zhejiang. The evaluation form designed is based on model for developing the teaching staff construction of innovation and entrepreneurship education in application-oriented universities from the following five aspects: 1) composition of the teaching staff, 2) professional qualities of the teaching staff, 3) management and assessment, 4) teacher training, 5) supporting mechanism. The evaluation form provide into two parts:

Part 1: the personal information of interviewees, classified by work position, work experience, educational background, and academic title.

Part 2: The evaluation form about the model for developing the teaching staff construction of innovation and entrepreneurship education in application-oriented universities in Zhejiang. The criteria for data interpretation is based on a five-point Likert’s scale, as follows:

5 refers to the suitability and feasibility of the model at the highest level

4 refers to the suitability and feasibility of the model at a high level

3 refers to the suitability and feasibility of the model at a medium level

2 refers to the suitability and feasibility of the model at a low level

1 refers to the suitability and feasibility of the model at the lowest level

The data interpretation for average value is based on Rensis Likert (1932). The data interpretation is as follows:

4.50 – 5.00 refers to the highest level

3.50 – 4.49 refers to high level

2.50 – 3.49 refers to medium level

1.50 – 2.49 refers to low level

1.00 – 1.49 refers to the lowest level

Constructing an evaluation form process

The construction process of the evaluation form is as follows:

Step 1: Construct the evaluation form about guidelines for the teaching staff construction of innovation and entrepreneurship education in application-oriented universities in Zhejiang.

Step 2: The evaluation form was application to 15 experts on innovation and entrepreneurship education from application-oriented universities in Zhejiang.

Data Collection

The data collection for objective 3: to evaluate the model for developing the teaching staff construction of innovation and entrepreneurship education in application-oriented universities in Zhejiang, as following procedure:

Step 1: The researcher requested a requirement letter from the graduate university, Bansomdejchaopraya Rajabhat University for requiring to invite the expert to evaluate the guidelines.

Step 2: The researcher distributed a total of 15 evaluation form to 15 experts on innovation and entrepreneurship education.

Data Analysis

The data analysis in this research, the researcher analyzes the data by package program as follows: The evaluation of the suitability and feasibility of the model for improving the teaching staff construction of innovation and entrepreneurship education in application-oriented universities in Zhejiang is analyzed by Mean and standard deviation.

Chapter 4

Data Analysis Results

This research was to study the current situation and guidelines for the teaching staff construction level of innovation and entrepreneurship education in application-oriented universities in Zhejiang. The data analysis result can be presented as follows:

1. Symbol and abbreviations
2. Presentation of data analysis
3. Results of data analysis

The details are as follows.

Symbol and Abbreviations

N refers to Population

n refers to Sample group

$\overline{X}$ refers to Mean

S.D. refers to Standard deviation

Presentation of Data Analysis

Part 1: The results analysis of the personal information of the respondents, classified by gender and educational background. The researcher presented the data by frequency and percentage.

Part 2: The results analysis of the teaching staff construction level of innovation and entrepreneurship education in application-oriented universities in Zhejiang. The researcher presented the data by Mean and standard deviation.

Part 3: The results analysis of interview contents about the guidelines for improving the teaching staff construction of innovation and entrepreneurship education in application-oriented universities in Zhejiang.

Part 4: The results analysis of the evaluation of the suitability and feasibility of guidelines for improving the teaching staff construction of innovation and

entrepreneurship education in application-oriented universities in Zhejiang. The researcher presented the data by Mean and standard deviation.

Results of Data Analysis

The researcher analyzed the data in four parts as follows:

Part 1: The results analysis of the personal information of the respondents, classified by gender, age, educational background, professional ranks and teaching identity. The researcher presented the data by frequency and percentage.

Table 4.1 Personal information of the survey respondents

(n=315)

	Personal information	frequency	percentage
gender	male	174	55.23
	female	141	44.76
	Total	**315**	**100**
age	20-30 years old	23	7.30
	31-40 years old	141	44.76
	41-50 years old	108	34.29
	51 years old and above	43	13.65
	Total	**315**	**100**
Educational background	Bachelor's degree	13	4.13
	Master's degree	206	65.40
	Doctor's degree	96	30.47
	Total	**315**	**100**

Table 4.1 (Continued)

(n=315)

	Personal information	frequency	percentage
Professional ranks	Teaching assistant	15	4.76
	lecturer	143	45.40
	Associate professor	118	37.46
	professor	39	12.38
	Total	**315**	**100**
Teaching identity	Full-time teacher	33	10.48
	Part-time teacher	207	65.71
	Entrepreneurship Mentor in business	75	23.81
	Total	**315**	**100**

According to table 4.1, the number of valid participants in this study was 315. In terms of gender, there are 174 male, accounting for 55.23%, while there are 141 female, accounting for 44.76%. In terms of age, most are aged 31-50, with 141 (44.76%) aged 31-40 and 108 (34.29%) aged 41-50. In terms of educational background, The vast majority of the respondents are highly educated with a master's or doctor's degree, accounting for 206 (65.40%) and 96 (30.47%) respectively, but there are a few respondents only with a bachelor's degree(4.13%). As for professional ranks, nearly 50% respondents have a senior title, with 118 associate professors and 39 professors, while there are 143 lecturers and 15 teaching assistants, accounting for 45.40% and 4.76%. as for teaching identity, there are 33 full-time teachers, only accounting for 10.48%, while there are 207 part-time teachers and 75 entrepreneurship mentors in business, accounting for 65.71% and 23.81% respectively.

Part 2: The results analysis of the teaching staff construction level of innovation and entrepreneurship education in application-oriented universities in Zhejiang. The researcher presented the data by Mean and standard deviation.

Table 4.2 Mean and standard deviation of the teaching staff construction level of innovation and entrepreneurship education in application-oriented universities in Zhejiang in five aspects

(n=315)

The teaching staff construction level of innovation and entrepreneurship education	$\overline{X}$	**S.D.**	**Level**	**Order**
1. Composition of the teaching staff	4.11	0.54	high	1
2. Professional qualities of the teaching staff	3.87	0.63	high	3
3. Management and assessment	3.96	0.59	high	2
4. Teacher training	3.69	0.63	high	5
5. Supporting mechanism	3.81	0.64	high	4
Total	**3.89**	**0.61**	**high**	

According to table 4.2, the teaching staff construction level of innovation and entrepreneurship education in application-oriented universities in Zhejiang in five aspects were all at a high level. Considering the results of this research, five aspects ranged from the highest to the lowest mean were as follows: the highest mean was composition of the teaching staff ($\overline{X}$ =4.11), followed by management and assessment ($\overline{X}$ =3.96), professional qualities of the teaching staff ($\overline{X}$ =3.87) and supporting mechanism ($\overline{X}$ =3.81), teacher training had the lowest mean ($\overline{X}$ = 3.69).

Next, the specific situation of the five dimensions of the teaching staff construction level of innovation and entrepreneurship education in application-oriented universities in Zhejiang will be described and analyzed.

Composition of the teaching staff

Table 4.3 Mean and standard deviation of the teaching staff construction level of innovation and entrepreneurship education in application-oriented universities in Zhejiang in composition of the teaching staff

(n=315)

Composition of the teaching staff	$\overline{X}$	S.D.	Level	Order
1. The number of innovation and entrepreneurship teachers in the university can meet the needs of innovation and entrepreneurship education	4.08	0.52	high	3
2. The university has established a well-structured team of innovation and entrepreneurship education teacher in age	4.11	0.54	high	2
3. The university has established a well-structured team of innovation and entrepreneurship education teacher in professional title	4.05	0.56	high	5
4. The university has established a well-structured team of innovation and entrepreneurship education teacher in educational background	4.22	0.52	high	1
5. The proportion of full-time and part-time teachers in innovation and entrepreneurship education is appropriate	4.07	0.55	high	4
Total	**4.11**	**0.54**	**high**	

From table 4.3, it is found that the teaching staff construction level of innovation and entrepreneurship education in application-oriented universities in Zhejiang in composition of the teaching staff was at a high level ($\overline{X}$ =4.11). Considering the results of this research aspects ranged from the highest to the lowest mean were as follows: the highest mean was The university has established a well-structured team of innovation and entrepreneurship education teacher in educational

background ($\overline{X}$ =4.22), followed by The university has established a well-structured team of innovation and entrepreneurship education teacher in age ($\overline{X}$ =4.11), The university has established a well-structured team of innovation and entrepreneurship education teacher in professional title had the lowest mean ($\overline{X}$ = 4.05).

Professional qualities of the teaching staff

Table 4.4 Mean and standard deviation of the teaching staff construction level of innovation and entrepreneurship education in application-oriented universities in Zhejiang in professional qualities of the teaching staff

(n=315)

Professional qualities of the teaching staff	$\overline{X}$	S.D.	Level	Order
1. You have systematically studied the theoretical knowledge of innovation and entrepreneurship	3.76	0.68	high	5
2. You have rich practical experience in innovation and entrepreneurship	3.63	0.71	high	6
3. You are capable of teaching innovation and entrepreneurship	4.03	0.58	high	1
4. You have a high level of innovation and entrepreneurship guidance ability	3.93	0.58	high	3
5. You often use various teaching methods such as project-based teaching, case-based teaching, participatory or experiential teaching in the classroom	3.96	0.62	high	2
6. You have clear professional development goals and plans for engaging in innovation and entrepreneurship work	3.88	0.61	high	4
Total	**3.87**	**0.63**	**high**	

From table 4.4, it is found that the teaching staff construction level of innovation and entrepreneurship education in application-oriented universities in Zhejiang in professional qualities of the teaching staff was at a high level ($\overline{X}$ =3.87). Considering the results of this research aspects ranged from the highest to the lowest mean were as follows: the highest mean was you are capable of teaching innovation and entrepreneurship ($\overline{X}$ =4.03), followed by you often use various teaching methods such as project-based teaching, case-based teaching, participatory or experiential teaching in the classroom ($\overline{X}$ =3.96) and you have a high level of innovation and entrepreneurship guidance ability($\overline{X}$ =3.93), You have rich practical experience in innovation and entrepreneurship had the lowest mean ($\overline{X}$ =3.63).

Management and assessment

Table 4.5 Mean and standard deviation of the teaching staff construction level of innovation and entrepreneurship education in application-oriented universities in Zhejiang in management and assessment

(n=315)

Management and assessment	$\overline{X}$	S.D.	Level	Order
1. The university has established clear standards for the selection and employment of teachers in innovation and entrepreneurship education	3.92	0.59	high	4
2. The evaluation and assessment standards for university innovation and entrepreneurship teachers are fair and reasonable	3.84	0.64	high	5
3. The university's evaluation and assessment methods for innovation and entrepreneurship teachers are scientific and effective	4.03	0.62	high	2
4. The university's evaluation and assessment of innovation and entrepreneurship teachers have shown significant results	4.04	0.51	high	1
5. The university's management of innovation and entrepreneurship teachers is satisfactory	3.95	0.62	high	3
Total	**3.96**	**0.60**	**high**	

From table 4.5, it is found that the teaching staff construction level of innovation and entrepreneurship education in application-oriented universities in Zhejiang in management and assessment was at a high level ($\overline{X}$ =3.96). Considering the results of this research aspects ranged from the highest to the lowest mean were as follows: the highest mean was The university's evaluation and assessment of innovation and entrepreneurship teachers have shown significant results ($\overline{X}$ =4.04), followed by The university's evaluation and assessment methods for innovation and entrepreneurship teachers are scientific and effective ($\overline{X}$ =4.03) and The university's management of innovation and entrepreneurship teachers is satisfactory ($\overline{X}$ =3.95), The evaluation and assessment standards for university innovation and entrepreneurship teachers are fair and reasonable had the lowest mean ($\overline{X}$ = 3.84).

Teacher training

Table 4.6 Mean and standard deviation of the teaching staff construction level of innovation and entrepreneurship education in application-oriented universities in Zhejiang in teacher training

(n=315)

Teacher training	$\overline{X}$	S.D.	Level	Order
1. The types of training in innovation and entrepreneurship education you receive each year are diverse and abundant	3.47	0.71	medium	3
2. You are satisfied with the practice and training opportunities provided by the university	3.43	0.67	medium	4
3. You are interested in the training content provided by the university	4.04	0.50	high	1
4. Through training, your professional abilities and qualities have been greatly improved, and the training effect is significant	3.82	0.63	high	2
total	**3.69**	**0.63**	**high**	

From table 4.6, it is found that the teaching staff construction level of innovation and entrepreneurship education in application-oriented universities in Zhejiang in teacher training was at a high level ($\overline{X}$ =3.69). Considering the results of this research aspects ranged from the highest to the lowest mean were as follows: the highest mean was You are interested in the training content provided by the university ($\overline{X}$ =4.04), followed by Through training, your professional abilities and qualities have been greatly improved, and the training effect is significant ($\overline{X}$ =3.82), You are satisfied with the practice and training opportunities provided by the university had the lowest mean ($\overline{X}$ =3.43).

Supporting mechanism

Table 4.7 Mean and standard deviation of the teaching staff construction level of innovation and entrepreneurship education in application-oriented universities in Zhejiang in supporting mechanism

(n=315)

supporting mechanism	$\overline{X}$	S.D.	Level	Order
1. You are satisfied with your work environment	4.03	0.56	high	**1**
2. You are satisfied with the salary and benefits as a innovation and entrepreneurship education teacher	3.83	0.65	high	3
3. You are satisfied with the professional title evaluation and appointment/removal of innovation and entrepreneurship education teachers	3.77	0.65	high	4
4. You are satisfied with the promotion channels and development space provided by the university for innovation and entrepreneurship education teachers	3.86	0.64	high	2
5. Your university has established a comprehensive incentive mechanism for innovation and entrepreneurship education teachers	3.74	0.65	high	5
6. The supporting measures for the teaching staff construction of innovation and entrepreneurship education in the current national, social, and university policies are relatively complete	3.65	0.73	high	6
Total	**3.81**	**0.65**	**high**	

From table 4.7, it is found that the teaching staff construction level of innovation and entrepreneurship education in application-oriented universities in Zhejiang in supporting mechanism was at a high level ($\overline{X}$ =3.81). Considering the results of this research aspects ranged from the highest to the lowest mean were as follows: the highest mean was You are satisfied with your work environment ($\overline{X}$ = 4.03), followed by You are satisfied with the promotion channels and development space provided by the university for innovation and entrepreneurship education teachers ($\overline{X}$ =3.86), The supporting measures for the teaching staff construction of innovation and entrepreneurship education in the current national, social, and university policies are relatively complete had the lowest mean ($\overline{X}$ =3.65).

Part 3: The results analysis of interview contents about the guidelines for improving the teaching staff construction of innovation and entrepreneurship education in application-oriented universities in Zhejiang.

Table 4.8 Personal information of the interviewees

Interviewee	Personal information	Interview Date	Interview time
Interviewee 1	Education: Master's degree Position: full-time teacher Work experience: 7 years	Sep. 22th, 2023	14:00 pm GMT +8 35 minutes
Interviewee 2	Education: doctor's degree Position: part-time teacher Work experience: 6 years	Sep. 22th, 2023	15:00 pm GMT +8 30 minutes
Interviewee 3	Education: Master's degree Position: administrator Work experience: 9 years	Sep. 22th, 2023	16:00 pm GMT +8 35 minutes
Interviewee 4	Education: doctor's degree Position: full-time teacher Work experience: 5 years	Sep. 27th, 2023	14:00 pm GMT +8 35 minutes
Interviewee 5	Education: Master's degree Position: administrator Work experience: 12 years	Sep. 27th, 2023	15:00 pm GMT +8 35 minutes
Interviewee 6	Education: Master's degree Position: part-time teacher Work experience: 9 years	Sep. 27th, 2023	16:00 pm GMT +8 35 minutes
Interviewee 7	Education: Master's degree Position: part-time teacher Work experience: 15 years	Oct. 9th, 2023	14:00 pm GMT +8 30 minutes
Interviewee 8	Education: Master's degree Position: part-time teacher Work experience: 23 years	Oct. 9th, 2023	15:00 pm GMT +8 30 minutes

Table 4.7 (Continued)

Interviewee	Personal information	Interview Date	Interview time
Interviewee 9	Education: Master's degree Position: administrator Work experience: 11 years	Oct. 9th, 2023	16:00 pm GMT +8 30 minutes
Interviewee 10	Education: Master's degree Position: full-time teacher Work experience: 17 years	Oct. 17th, 2023	14:00 pm GMT +8 30 minutes
Interviewee 11	Education: Master's degree Position: administrator Work experience: 9 years	Oct. 17th, 2023	15:00 pm GMT +8 30 minutes
Interviewee 12	Education: doctor's degree Position: part-time teacher Work experience: 7 years	Oct. 17th, 2023	16:00 pm GMT +8 30 minutes

The interview results in five dimensions are presented below:

Composition of the teaching staff

The overall structure of the teaching staff tends to be reasonable, but some of them need to be optimized. Since 2014, when China began to carry out innovation and entrepreneurship education in universities across the country, after nearly 10 years of development, innovation and entrepreneurship education has made great achievements, and the construction of all aspects has been gradually complete. From the shortage of teachers at the beginning to now, a relatively large faculty team has been formed, and the number is no longer a problem perplexing the development of innovation and entrepreneurship education. However, it still needs to be optimized in terms of educational background, professional title, source and entrepreneurial practice. the composition of university innovation and entrepreneurship teachers generally comes from three types of personnel. One is teachers majoring in economic management or teachers applying from the whole

university, and they serve as full-time teachers of innovation and entrepreneurship education. Second, political counselors, student administrators or ideological and political teachers are directly responsible for employment guidance. Third, some successful people or company executives with external entrepreneurial experience will be hired as entrepreneurial mentors to provide students with practical guidance on innovation and entrepreneurship. According to the questionnaire survey data, in terms of educational structure, more than 65% of teachers are master's degree, only 30% account for doctors, and the proportion of doctors is significantly less. In terms of professional title structure, intermediate titles account for nearly half, and associate senior or above titles account for nearly half, but the proportion of professors accounts for less than 15%, indicating that there is a relative shortage of experienced teachers in innovation and entrepreneurship education. In terms of teacher sources, the proportion of full-time teachers is too small, and there are too many part-time teachers. In particular, many of the part-time teachers are not professional teachers, but counselors or administrative staff engaged in student management, which is unprofessional. In terms of practical experience, few innovation and entrepreneurship teachers have had entrepreneurial practical experience, and most of them have not systematically learned entrepreneurial theories and knowledge, so the overall entrepreneurial quality needs to be improved.

Professional qualities of the teaching staff

Professional quality is uneven, and the teaching methods are outdated and conservative. Innovation and entrepreneurship education is an interdisciplinary and comprehensive course focusing on practice, which requires high teachers' professional quality. In order to be competent in this course, in addition to the general teaching ability and professional knowledge, teachers also need to have the entrepreneurial spirit, entrepreneurial knowledge and relatively rich social experience. However, through interviews, it is found that teachers in innovation and entrepreneurship education in colleges and universities generally lack professional connection, that is, most of the teachers majoring in economics and management have not systematically learned the theoretical knowledge of entrepreneurship, and their professional background is weak, and even have no knowledge about entrepreneurship before.

Different from many traditional courses, innovation and entrepreneurship education focuses more on practicality and timeliness, and has no fixed model. For innovation and entrepreneurship education, simple theory teaching cannot stimulate students' interest and enthusiasm, and cannot meet the teaching needs. Instead, various teaching methods should be flexibly used, such as project teaching method, case teaching method, participation or experiential teaching method, so that students can experience and practice by themselves. However, because many teachers themselves do not have certain entrepreneurial experience or enterprise practical experience, the teaching method still adopts the theoretical teaching method, simply interspersed with some case analysis, to complete the course teaching. There is still a big gap between this traditional teaching mode and the practical demand of innovation and entrepreneurship teaching. Passive reception is difficult for students to internalize entrepreneurial knowledge into their hearts, and it is even more difficult for students to use entrepreneurial knowledge and entrepreneurial skills well. In addition, it is also understood that even teachers with entrepreneurial experience may not be clear on how to impart practical knowledge to students during teaching due to the lack of systematic education and training. So the teaching effect is unsatisfactory.

Management and assessment

Multi-head management results in separate governance and the evaluation index focuses on scientific research. Through interviews, seven application undergraduate colleges established innovation entrepreneurship college, responsible for the university innovation entrepreneurship education course opening and implementation, innovation entrepreneurship education practice base establishment and management, business incubators, innovation entrepreneurship competition organization and management, aims to get through professional teaching, training, competition, scientific research, project incubation and research chain, forming "class-training- -grind-production" as the main development path of science and innovation education system. The university of Innovation and Entrepreneurship is generally supervised and managed by the leading group of innovation and entrepreneurship education, with the president as the leader and the university leader in charge as the deputy leader. In terms of teacher management, due to the innovation

entrepreneurship teachers from professional teachers, administrative personnel and entrepreneurs in these three aspects, so mainly by the personnel department, administration department, teachers' secondary college, counselors and other administrative personnel of functions and innovation college management, rather than by innovation entrepreneurship college management alone. As a result, there is multiple management of the above teachers, and resources cannot be concentrated in terms of work arrangement and teacher training. Due to the unclear management organization, it also leads to the lack of effective management and the unprotection of their performance assessment, which makes them gradually marginalized among the university teachers and strikes their enthusiasm for work. The current assessment and evaluation of innovation and entrepreneurship teachers still remain in a state of only focusing on papers and scientific research. The number of papers published by teachers is directly linked to professional title evaluation and salary rewards. Although guiding competitions also accounts for a certain proportion, the power of scientific research projects without papers is significant. Innovation and entrepreneurship education is a subject with high requirements on practical ability. This assessment method is obviously contrary to the training goal of entrepreneurship education, and it is difficult for teachers' achievements in innovation and entrepreneurship practice and guidance to consider. In fact, teachers who only publish papers are difficult to cultivate students with innovative spirit and innovative ability. However, those entrepreneurship instructors have invested a lot of time and energy in teaching or entrepreneurship competitions, and have really made practical contributions to entrepreneurship education, but they are in an awkward situation in the performance appraisal and professional title evaluation.

Teacher training

The training form is relatively simple, and the training content is lack of autonomy and personality. It has become a consensus that innovation and entrepreneurship teachers generally lack entrepreneurial practice experience. Therefore, the systematic training for innovation and entrepreneurship teachers is the key to improve the overall professional level of teachers. Although most colleges and universities have planned pre-job training for teachers of innovation and

entrepreneurship education, there are still many shortcomings. The reason is that the concept of teacher training is not advanced, the training objectives are too general, and the training content is not practical; the training method is relatively simple and old, or the teachers mainly teach theoretical knowledge in class, mainly by teachers, and lacks teacher-student interaction. Through the interview, we further learned that the situation of innovation and entrepreneurship teachers in 7 universities is not common enough inside and outside the university, and teachers generally responded that the training times were too few, with little content to learn, and lack of systematization. Innovation and entrepreneurship education has its own unique teaching methods and pays more attention to practical ability. According to interview, innovative entrepreneurship teachers pay more attention to improve their innovative entrepreneurship education practice ability, hope to go to the enterprise practice, and university training courses, teaching content is not targeted, scientific is not strong, is given priority to with short training class, in view of the entrepreneurial situation, business management, entrepreneurial research a unit, lack of system and the overall arrangement, directly affects the innovation entrepreneurship teachers training effect. Therefore, it is obviously unsatisfactory to test the satisfaction of teacher training.

Supporting mechanism

The supporting mechanism needs to be improved, and the incentive measures have a weak long-term effect. The healthy development of innovation and entrepreneurship education cannot be separated from external support. The mature and complete guarantee system is the booster for the continuous strength of innovation and entrepreneurship teachers, which can promote the continuous development of innovation and entrepreneurship education in China's colleges and universities. However, due to various reasons, the guarantee mechanism for innovation and entrepreneurship education is still in the process of gradual improvement, and many aspects need to be improved. On policy support, for example, in recent years, with the innovation entrepreneurship education work in full swing, the competent department of education around university innovation entrepreneurship mentor team construction, in policy formulation, platform

construction gave certain strength support and tilt, however, a series of government policy support is usually macro plan as a whole. This requires the education authorities to specify the specific implementation rules and steps, resulting in difficulties in the implementation of the policy. In terms of discipline ownership, innovation and entrepreneurship is a new thing, and it has not been listed as a single discipline in China. For part-time teachers who account for a considerable proportion of innovation and entrepreneurship education, innovation and entrepreneurship education is not the "main business" for them, so insufficient attention is paid. Most of these teachers are promoted by professional titles with their original majors, but they cannot become professors of innovation and entrepreneurship education, which is because there is no such professional title series in colleges and universities. Especially when these teachers apply for national scientific research projects, they often wander between management, higher education, ideological and political education, application economics and other disciplines, and it is difficult to find accurate discipline attribution. This state of discipline "wandering" makes it difficult for teachers engaged in innovation and entrepreneurship education to find a sense of belonging. In terms of incentive measures, the teachers of innovation and entrepreneurship education are consistent with the policies of other teachers in the university in terms of professional title evaluation, evaluation and evaluation, and salary, and fail to give attention to and tilt according to the characteristics of the subject.

Table 4.9 Guidelines for improving the teaching staff construction of innovation and entrepreneurship education in application-oriented universities in Zhejiang

Guidelines for improving the teaching staff construction of innovation and entrepreneurship education	**How to**
Optimizing composition of the teaching staff	1. Priority should be given to top-level design to clarify development goals, and formulate an overall plan for the teaching staff construction of innovation and entrepreneurship education 2. Innovate the mechanism for introducing teachers and broaden the channels for introducing talents 3. Encourage young teachers to pursue doctoral degrees and cultivate doctoral teachers with solid entrepreneurial theories to reserve high-level, specialized teaching staff 4. Establish a suitable mix of full-time and part-time teaching staff with a multi-disciplinary background

Table 4.9 (Continued)

Guidelines for improving the teaching staff construction of innovation and entrepreneurship education	**How to**
Enhancing professional qualities of the teaching staff	1. Based on the recognition of their professional identity, teachers should actively learn knowledge of innovation and entrepreneurship education to improve their teaching level 2. Teachers should innovate the teaching mode and curriculum assessment mode according to the characteristics of innovation and entrepreneurship disciplines, and increase the proportion of practical teaching and practical ability assessment 3. Fully implement the system of teachers entering enterprises for practice to enhance the practical teaching ability of teachers in innovation and entrepreneurship education 4. Build an interactive communication platform for teachers of innovation and entrepreneurship education to strengthen knowledge sharing among them

Table 4.9 (Continued)

Guidelines for improving the teaching staff construction of innovation and entrepreneurship education	**How to**
Improving management and assessment	1. Strictly regulate the admission mechanism and establish qualification certification standards for innovation and entrepreneurship education teachers 2. Adopt a classification management and evaluation system for innovation and entrepreneurship education teachers 3. Improve the evaluation and assessment system for teachers of innovation and entrepreneurship education to comprehensively and dynamically assess the achievements of them 4. Establish a fast and effective supervision and feedback mechanism to ensure teaching quality

Table 4.9 (Continued)

Guidelines for improving the teaching staff construction of innovation and entrepreneurship education	**How to**
Promoting teacher training	1. Establish a specialized and normalized mechanism for teacher training, and include teacher training in the scope of evaluation and assessment 2. Expand the channels and forms of teacher training, and improve the preciseness and effectiveness of training 3. Create an online training platform and provide teachers with various training programs they need 4. Establish specific training effectiveness evaluation systems, specify the training requirements and assessment standards, track and manage the training of participants to improve effects of training

Table 4.9 (Continued)

Guidelines for improving the teaching staff construction of innovation and entrepreneurship education	**How to**
Boosting supporting mechanism	1. Provide special funding for the construction and support of innovative and entrepreneurial education teaching staff 2. Improving the external environment for innovation and entrepreneurship teachers to implement innovation and entrepreneurship education 3. Develop a comprehensive incentive system for innovation and entrepreneurship education teachers that is in line with the actual situation of their universities 4. Enhance the cooperation between universities and enterprise to boost the cultivation of innovation and entrepreneurship education teachers

Figure 4.1 The outlines of guidelines for improving the teaching staff construction of innovation and entrepreneurship education in application-oriented universities in Zhejiang

The researcher provided the guidelines for improving the teaching staff construction of innovation and entrepreneurship education in application-oriented universities in Zhejiang in five aspects, which contain 20 measures. There are 4 measures for optimizing the composition of the teaching staff, 4 measures for enhancing professional qualities of the teaching staff, 4 measures to improve management and assessment, 4 measures for promoting teacher training, and 4 measures for boosting supporting mechanism.

1. Optimizing composition of the teaching staff

1) Priority should be given to top-level design to clarify development goals, and formulate an overall plan for the teaching staff construction of innovation and entrepreneurship education

2) Innovate the mechanism for introducing teachers and broaden the channels for introducing talents

3) Encourage young teachers to pursue doctoral degrees and cultivate doctoral teachers with solid entrepreneurial theories to reserve high-level, specialized teaching staff

4) Establish a suitable mix of full-time and part-time teaching staff with a multi-disciplinary background

2. Enhancing professional qualities of the teaching staff

1) Based on the recognition of their professional identity, teachers should actively learn knowledge of innovation and entrepreneurship education to improve their teaching level

2) Teachers should innovate the teaching mode and curriculum assessment mode according to the characteristics of innovation and entrepreneurship disciplines, and increase the proportion of practical teaching and practical ability assessment

3) Fully implement the system of teachers entering enterprises for practice to enhance the practical teaching ability of teachers in innovation and entrepreneurship education

4) Build an interactive communication platform for teachers of innovation and entrepreneurship education to strengthen knowledge sharing among them

3. Improving management and assessment

1) Strictly regulate the admission mechanism and establish qualification certification standards for innovation and entrepreneurship education teachers

2) Adopt a classification management and evaluation system for innovation and entrepreneurship education teachers

3) Improve the evaluation and assessment system for teachers of innovation and entrepreneurship education to comprehensively and dynamically assess the achievements of them

4) Establish a fast and effective supervision and feedback mechanism to ensure teaching quality

4. Promoting teacher training

1) Establish a specialized and normalized mechanism for teacher training, and include teacher training in the scope of evaluation and assessment

2) Expand the channels and forms of teacher training, and improve the preciseness and effectiveness of training

3) Create an online training platform and provide teachers with various training programs they need

4) Establish specific training effectiveness evaluation systems, specify the training requirements and assessment standards, track and manage the training of participants to improve effects of training

5. Boosting supporting mechanism

1) Provide special funding for the construction and support of innovative and entrepreneurial education teaching staff

2) Improving the external environment for innovation and entrepreneurship teachers to implement innovation and entrepreneurship education

3) Develop a comprehensive incentive system for innovation and entrepreneurship education teachers that is in line with the actual situation of their universities

4) Enhance the cooperation between universities and enterprise to boost the cultivation of innovation and entrepreneurship education teachers

Part 4: The results analysis of the evaluation of the suitability and feasibility of guidelines for improving the teaching staff construction of innovation and entrepreneurship education in application-oriented universities in Zhejiang. The researcher presented the data by Mean and standard deviation.

Table 4.10 Mean and standard deviation of the suitability and feasibility of guidelines for improving the teaching staff construction of innovation and entrepreneurship education in application-oriented universities in Zhejiang

(N= 15)

Guidelines for improving the teaching staff construction of innovation and entrepreneurship education in application-oriented universities in Zhejiang	Suitability			Feasibility		
	$\overline{X}$	S.D.	Level	$\overline{X}$	S.D.	Level
1. Composition of the teaching staff	4.35	0.63	high	4.46	0.74	high
2. Professional qualities of the teaching staff	4.38	0.72	high	4.41	0.82	high
3. Management and assessment	4.41	0.76	high	4.25	0.68	high
4. Teacher training	4.27	0.81	high	4.18	0.77	high
5. Supporting mechanism	4.33	0.83	high	4.12	0.81	high
Total	**4.35**	**0.75**	**high**	**4.28**	**0.76**	**high**

According to Table 4.10, it is found that the suitability of guidelines for improving the teaching staff construction of innovation and entrepreneurship education in application-oriented universities in Zhejiang were at the high level with values between 4.00 and 5.00, which means guidelines for improving the teaching staff construction of innovation and entrepreneurship education is suitable in practice.

It is also found that the feasibility of guidelines for improving the teaching staff construction of innovation and entrepreneurship education in application-oriented universities in Zhejiang were at the high level with values between 4.00 and 5.00, which means guidelines for improving the teaching staff construction of innovation and entrepreneurship education is feasible in practice.

Table 4.11 Mean and standard deviation of the suitability and feasibility of guidelines in Composition of the teaching staff

(N= 15)

Guidelines for improving the teaching staff construction of innovation and entrepreneurship education in application-oriented universities in Zhejiang	Suitability			Feasibility		
	$\overline{X}$	S.D.	Level	$\overline{X}$	S.D.	Level
Composition of the teaching staff						
1. Priority should be given to top-level design to clarify development goals, and formulate an overall plan for the teaching staff construction of innovation and entrepreneurship education	4.41	0.61	high	4.53	0.76	high
2. Innovate the mechanism for introducing teachers and broaden the channels for introducing talents	4.25	0.58	high	4.37	0.78	high
3. Encourage young teachers to pursue doctoral degrees and cultivate doctoral teachers with solid entrepreneurial theories to reserve high-level, specialized teaching staff	4.43	0.60	high	4.61	0.71	high
4. Establish a suitable mix of full-time and part-time teaching staff with a multi-disciplinary background	4.32	0.71	high	4.34	0.69	high
Total	4.35	0.63	high	4.46	0.74	high

According to Table 4.11, it is found that the suitability and feasibility of guidelines for improving the teaching staff construction of innovation and entrepreneurship education in composition of the teaching staff were at the high level with values between 4.00 and 5.00, which means strategies for optimizing composition of the teaching staff is suitable and feasible in practice.

Table 4.12 Mean and standard deviation of the suitability and feasibility of guidelines in professional qualities of the teaching staff

(N= 15)

Guidelines for improving the teaching staff construction of innovation and entrepreneurship education in application-oriented universities in Zhejiang	Suitability			Feasibility		
	$\overline{X}$	S.D.	Level	$\overline{X}$	S.D.	Level
Professional qualities of the teaching staff						
1. Based on the recognition of their professional identity, teachers should actively learn knowledge of innovation and entrepreneurship education to improve their teaching level	4.58	0.67	highest	4.57	0.85	highest
2. Teachers should innovate the teaching mode and curriculum assessment mode according to the characteristics of innovation and entrepreneurship disciplines, and increase the proportion of practical teaching and practical ability assessment	4.56	0.69	highest	4.60	0.83	highest
3. Fully implement the system of teachers entering enterprises for practice to enhance the practical teaching ability of teachers in innovation and entrepreneurship education	4.17	0.76	high	4.25	0.79	high

Table 4.12 (Continued)

Guidelines for improving the teaching staff construction of innovation and entrepreneurship education in application-oriented universities in Zhejiang	Suitability			Feasibility		
	$\overline{X}$	S.D.	Level	$\overline{X}$	S.D.	Level
4. Build an interactive communication platform for teachers of innovation and entrepreneurship education to strengthen knowledge sharing among them	4.22	0.75	high	4.23	0.78	high
Total	4.38	0.72	high	4.41	0.82	high

According to Table 4.12, it is found that the suitability and feasibility of guidelines for improving the teaching staff construction of innovation and entrepreneurship education in professional qualities of the teaching staff were at the high level with values between 4.00 and 5.00, which means strategies for enhancing professional qualities of the teaching staff is suitable and feasible in practice.

Table 4.13 Mean and standard deviation of the suitability and feasibility of strategies in management and assessment

(N=15)

Guidelines for improving the teaching staff construction of innovation and entrepreneurship education in application-oriented universities in Zhejiang	Suitability			Feasibility		
	$\overline{X}$	S.D.	Level	$\overline{X}$	S.D.	Level
Management and assessment						
1. Strictly regulate the admission mechanism and establish qualification certification standards for innovation and entrepreneurship education teachers	4.36	0.73	high	4.32	0.71	high
2. Adopt a classification management and evaluation system for innovation and entrepreneurship education teachers	4.43	0.77	high	4.22	0.66	high
3. Improve the evaluation and assessment system for teachers of innovation and entrepreneurship education to comprehensively and dynamically assess the achievements of them	4.37	0.75	high	4.21	0.72	high
4. Establish a fast and effective supervision and feedback mechanism to ensure teaching quality	4.47	0.80	high	4.24	0.64	high
Total	**4.41**	**0.76**	**high**	**4.25**	**0.68**	**high**

According to Table 4.13, it is found that the suitability and feasibility of guidelines for improving the teaching staff construction of innovation and entrepreneurship education in management and assessment were at the high level with values between 4.00 and 5.00, which means guidelines for improving management and assessment is suitable and feasible in practice.

Table 4.14 Mean and standard deviation of the suitability and feasibility of strategies in teacher training

(N=15)

Guidelines for improving the teaching staff construction of innovation and entrepreneurship education in application-oriented universities in Zhejiang	Suitability			Feasibility		
	$\overline{X}$	S.D.	Level	$\overline{X}$	S.D.	Level
Teacher training						
1. Establish a specialized and normalized mechanism for teacher training, and include teacher training in the scope of evaluation and assessment	4.26	0.78	high	4.13	0.81	high
2. Expand the channels and forms of teacher training, and improve the preciseness and effectiveness of training	4.29	0.83	high	4.27	0.73	high
3. Create an online training platform and provide teachers with various training programs they need	4.35	0.82	high	4.17	0.80	high
4. Establish specific training effectiveness evaluation systems, specify the training requirements and assessment standards, track and manage the training of participants to improve effects of training	4.18	0.80	high	4.14	0.71	high
Total	**4.27**	**0.81**	**high**	**4.18**	**0.77**	**high**

According to Table 4.14, it is found that the suitability and feasibility of guidelines for improving the teaching staff construction of innovation and entrepreneurship education in teacher training were at the high level with values between 4.00 and 5.00, which means strategies for promoting teacher training is suitable and feasible in practice.

Table 4.15 Mean and standard deviation of the suitability and feasibility of strategies in supporting mechanism

(N=15)

Guidelines for improving the teaching staff construction of innovation and entrepreneurship education in application-oriented universities in Zhejiang	Suitability			Feasibility		
	$\overline{X}$	S.D.	Level	$\overline{X}$	S.D.	Level
Supporting mechanism						
1. Provide special funding for the construction and support of innovative and entrepreneurial education teaching staff	4.36	0.81	high	4.15	0.78	high
2. Improve the external environment for innovation and entrepreneurship teachers to implement innovation and entrepreneurship education	4.28	0.87	high	4.06	0.79	high
3. Develop a comprehensive incentive system for innovation and entrepreneurship education teachers that is in line with the actual situation of their universities	4.32	0.84	high	4.17	0.84	high
4. Enhance the cooperation between universities and enterprise to boost the cultivation of innovation and entrepreneurship education teachers	4.35	0.79	high	4.09	0.83	high
Total	**4.33**	**0.83**	**high**	**4.12**	**0.81**	**high**

According to Table 4.15, it is found that the suitability and feasibility of guidelines for improving the teaching staff construction of innovation and entrepreneurship education in supporting mechanism were at the high level with values between 4.00 and 5.00, which means strategies for boosting supporting mechanism is suitable and feasible in practice.

Chapter 5
Conclusion Discussion and Recommendations

The objectives of this research were 1) to study the current situation of the teaching staff construction of innovation and entrepreneurship education in application-oriented universities in Zhejiang; 2) to formulate guidelines for improving the teaching staff construction of innovation and entrepreneurship education in application-oriented universities in Zhejiang; 3) to evaluate the suitability and feasibility of guidelines for improving the teaching staff construction of innovation and entrepreneurship education in application-oriented universities in Zhejiang. The following 5 variables are involved in this research: 1) composition of the teaching staff, 2) professional qualities of the teaching staff, 3) management and assessment, 4) teacher training, and 5) supporting mechanism. The sample group in this research were 315 teachers of innovation and entrepreneurship education and administrators from 7 application-oriented universities in Zhejiang China. The Interview group was 15 teachers and administrators in seven application-oriented universities in Zhejiang. The research instruments were documents analysis, questionnaire, and structured interview. The statistic indicators to analyze the data were percentage, mean, and standard deviation. The conclusion, discussion and recommendations of this research are as follows:

Conclusion

The research focus on guidelines for improving the teaching staff construction of innovation and entrepreneurship education in application-oriented universities in Zhejiang. The researcher summarizes the conclusion into three parts, details as follows:

Part 1: The current situation of the teaching staff construction of innovation and entrepreneurship education in application-oriented universities in Zhejiang;

Part 2: guidelines for improving the teaching staff construction level of innovation and entrepreneurship education in application-oriented universities in Zhejiang;

Part 3: The suitability and feasibility of the guidelines for improving the teaching staff construction level of innovation and entrepreneurship education in application-oriented universities in Zhejiang

Part 1: The current situation of the teaching staff construction of innovation and entrepreneurship education in application-oriented universities in Zhejiang

The current situation of the teaching staff construction of innovation and entrepreneurship education in five aspects was all at a high level. Considering the results of this research aspects ranged from the highest to lowest level were as follow: the highest level was management and assessment, followed by professional qualities of the teaching staff, composition of the teaching staff, supporting mechanism, and teacher training was the lowest level.

Composition of the teaching staff was at high level. Considering the results of this research aspects ranged from the highest to the lowest level were as follows: the highest level was the university has established a well-structured team of innovation and entrepreneurship education teacher in educational background, followed by the university has established a well-structured team of innovation and entrepreneurship education teacher in age, and the university has established a well-structured team of innovation and entrepreneurship education teacher in professional title was the lowest level.

Professional qualities of the teaching staff was at high level. Considering the results of this research aspects ranged from the highest to the lowest level were as follows: the highest level was you are capable of teaching innovation and entrepreneurship, followed by you often use various teaching methods such as project-based teaching, case-based teaching, participatory or experiential teaching in the classroom, and you have rich practical experience in innovation and entrepreneurship was the lowest level.

Management and assessment was at high level. Considering the results of this research aspects ranged from the highest to the lowest level were as follows: the highest level was the university's evaluation and assessment methods for innovation and entrepreneurship teachers are scientific and effective, followed by the university's evaluation and assessment of innovation and entrepreneurship teachers have shown significant results, and the evaluation and assessment standards for university innovation and entrepreneurship teachers are fair and reasonable was the lowest level.

Teacher training was at high level. Considering the results of this research aspects ranged from the highest to the lowest level were as follows: the highest level was you are interested in the training content provided by the university, followed by through training, your professional abilities and qualities have been greatly improved, and the training effect is significant, and you are satisfied with the practice and training opportunities provided by the university was the lowest level.

Supporting mechanism was at high level. Considering the results of this research aspects ranged from the highest to the lowest level were as follows: the highest level was you are satisfied with your work environment, followed by you are satisfied with the promotion channels and development space provided by the university for innovation and entrepreneurship education teachers, and the supporting measures for the teaching staff construction of innovation and entrepreneurship education in the current national, social, and university policies are relatively complete was the lowest level.

Part 2: guidelines for improving the teaching staff construction of innovation and entrepreneurship education in application-oriented universities in Zhejiang

After analyzing the current situation of the teaching staff construction of innovation and entrepreneurship education in application-oriented universities in Zhejiang, this research forms the guidelines for improving the teaching staff construction of innovation and entrepreneurship education in application-oriented universities in Zhejiang in five aspects, which contain 20 measures. There are 4 measures for optimizing the composition of the teaching staff, 4 measures for

enhancing professional qualities of the teaching staff, 4 measures to improve management and assessment, 4 measures for promoting teacher training, and 4 measures for boosting supporting mechanism.

Optimizing the composition of the teaching staff consisted of 4 measures: 1) priority should be given to top-level design to clarify development goals, and formulate an overall plan for the teaching staff construction of innovation and entrepreneurship education; 2) innovate the mechanism for introducing teachers and broaden the channels for introducing talents; 3) encourage young teachers to pursue doctoral degrees and cultivate doctoral teachers with solid entrepreneurial theories to reserve high-level, specialized teaching staff; 4) establish a suitable mix of full-time and part-time teaching staff with a multi-disciplinary background.

Enhancing professional qualities of the teaching staff consisted of 4 measures: 1) based on the recognition of their professional identity, teachers should actively learn knowledge of innovation and entrepreneurship education to improve their teaching level; 2) teachers should innovate the teaching mode and curriculum assessment mode according to the characteristics of innovation and entrepreneurship disciplines, and increase the proportion of practical teaching and practical ability assessment; 3) fully implement the system of teachers entering enterprises for practice to enhance the practical teaching ability of teachers in innovation and entrepreneurship education; 4) build an interactive communication platform for teachers of innovation and entrepreneurship education to strengthen knowledge sharing among them.

Improving management and assessment consisted of 4 measures: 1) strictly regulate the admission mechanism and establish qualification certification standards for innovation and entrepreneurship education teachers; 2) implement a dynamic management mechanism of survival of the fittest; 3) improve the evaluation and assessment system for teachers of innovation and entrepreneurship education to comprehensively and dynamically assess the achievements of them; 4) establish a fast and effective supervision and feedback mechanism to ensure teaching quality.

Promoting teacher training consisted of 4 measures: 1) establish a specialized and normalized mechanism for teacher training, and include teacher training in the scope of evaluation and assessment; 2) expand the channels and forms of teacher training, and improve the preciseness and effectiveness of training; 3) create an online training platform and provide teachers with various training programs they need; 4) establish specific training effectiveness evaluation systems, specify the training requirements and assessment standards, track and manage the training of participants to improve effects of training.

Boosting supporting mechanism consisted of 4 measures: 1) provide special funding for the construction and support of innovative and entrepreneurial education teaching staff; 2) improving the external environment for innovation and entrepreneurship teachers to implement innovation and entrepreneurship education; 3) develop a comprehensive incentive system for innovation and entrepreneurship education teachers that is in line with the actual situation of their universities; 4) enhance the cooperation between universities and enterprise to boost the cultivation of innovation and entrepreneurship education teachers.

Part 3: the suitability and feasibility of guidelines for improving the teaching staff construction level of innovation and entrepreneurship education in application-oriented universities in Zhejiang

The suitability and feasibility of guidelines for improving the teaching staff construction level of innovation and entrepreneurship education in five aspects were all at a high level with the values between 4.00 and 4.50, which means the guidelines for improving the teaching staff construction level of innovation and entrepreneurship education are adaptable and feasible.

The suitability and feasibility of optimizing the composition of the teaching staff were 4.35 and 4.46.

The suitability and feasibility of enhancing professional qualities of the teaching staff were 4.38 and 4.41.

The suitability and feasibility of improving management and assessment were 4.41 and 4.25.

The suitability and feasibility of promoting teacher training were 4.27 and 4.18.

The suitability and feasibility of boosting supporting mechanism were 4.33 and 4.12.

The total mean of the suitability and feasibility of guidelines for improving the teaching staff construction level of innovation and entrepreneurship education were 4.35 and 4.28.

Discussion

For the research in guidelines for improving the teaching staff construction of innovation and entrepreneurship education in application-oriented universities in Zhejiang, the researcher summarizes the discussion into three parts. Details are as follows:

Part 1: The current situation of the teaching staff construction of innovation and entrepreneurship education in application-oriented universities in Zhejiang;

Part 2: guidelines for improving the teaching staff construction level of innovation and entrepreneurship education in application-oriented universities in Zhejiang;

Part 3: The suitability and feasibility of guidelines for improving the teaching staff construction of innovation and entrepreneurship education in application-oriented universities in Zhejiang.

Part 1: The current situation of the teaching staff construction of innovation and entrepreneurship education in application-oriented universities in Zhejiang

The current situation of the teaching staff construction of innovation and entrepreneurship education in five aspects was at a high level. Considering the results of this research aspects ranged from the highest to lowest level were as follow: the highest level was composition of the teaching staff, followed by management and assessment, professional qualities of the teaching staff and supporting mechanism, teacher training was the lowest level. This is because innovation and entrepreneurship education has been vigorously developed since 2015, when the country elevated

innovation and entrepreneurship to the level of national strategy. The country and various provinces and cities have introduced a package of policies to support the rapid development of innovation and entrepreneurship education in universities. Many universities have gradually established comprehensive talent training systems for innovation and entrepreneurship education. The number of teachers in innovation and entrepreneurship education has significantly expanded, with a combination of full-time and part-time teachers and improved teacher quality; The awareness of teacher training has been enhanced, and the training topics have gradually become more diverse; Diverse incentive measures have been implemented; led by the government, various social entities have participated in innovation and entrepreneurship education. These indicate that the construction of the faculty team for innovation and entrepreneurship education in universities has achieved significant results. This is consistent with the research of Song lai and Xia Siyu (2022, p.42), who point out that the number and quality of innovation and entrepreneurship education teachers have been promoted. Teachers also have had more training programs to take. The universities have taken various measures to motivate teachers and governments at all levels have attached great importance to innovation and entrepreneurship education.

Composition of the teaching staff was at a high level. This is because the government and universities are increasingly attaching great importance to the teaching staff construction of innovation and entrepreneurship education. The related research can be seen from Liang Jingyi (2020, p.23), who points out that "Opinions on Vigorously Promoting Innovation and Entrepreneurship Education in Higher Education Institutions and College Students' Self employment Work" issued in 2010 clearly stipulated the composition of the faculty team for innovation and entrepreneurship education in universities, which should include entrepreneurs, successful entrepreneurs, experts and scholars as part-time teachers. "Implementation Opinions on Deepening the Reform of Innovation and Entrepreneurship Education in Higher Education Institutions" issued in 2015, further required that the composition of part-time teachers should include outstanding talents from various industries such as well-known scientists, successful entrepreneurs, and venture capitalists. from the

difference of these two documents, we can see that the country has raised the quality requirements for the teaching staff of innovation and entrepreneurship education in universities, and further promoted the improvement of the quality of innovation and entrepreneurship education in universities.

Professional qualities of the teaching staff was at a high level. This is because universities take various measures to spare no effort in improving the professional level and teaching ability of teachers. The related research can be seen from Hua Sha and Zhu Jie (2024, p.73), who points out that teachers' teaching abilities in innovation and entrepreneurship education has been promoted by providing them with professional development and learning opportunities. Universities have consciously provided professional development and learning opportunities for teachers and encourage them to participate in academic research, disciplinary exchanges, and educational practice activities. What's more, universities also support teachers to participate in innovation and entrepreneurship projects and industry university research cooperation, enhance their practical experience and professional competence, so as to better guide students' innovation and entrepreneurship practices. In teaching, teachers' educational and teaching abilities are enhanced through educational seminars, teaching observations, case analysis, and other methods. Universities also consciously cultivate teachers' teaching design ability, innovation ability, and teamwork ability so that they can flexibly utilizing different teaching methods and tools to stimulate students' innovative potential.

Management and assessment was at a high level. This is because the standards for teacher appointment have been raised, an independent institute has been established to manage and assess innovation and entrepreneurship teachers, and the assessment methods have gradually improved. The related research can be seen from Li Yuhan (2019, p60), who points out that on the one hand, universities have raised the selection and employment requirements for innovation and entrepreneurship education teachers. Most universities have expanded recruitment channels. They not only arrange personnel transfers from within, but also conduct open recruitment from the society. On the other hand, universities are gradually improving their assessment and evaluation methods for innovation and

entrepreneurship education teachers. The assessment department is improving various evaluation system indicators and comprehensively and dynamically evaluates the achievements of innovation and entrepreneurship education teachers.

Teacher training was at a high level. This is because the government and universities have attached great importance to teacher training, and have issued documents clarifying the requirements for teacher training. The related research can be seen from Liang Jingyi (2020, p.26), who points out that at the national level, the cultivation of innovation and entrepreneurship education teachers in universities has been increasingly emphasized, and clear requirements have been listed in documents issued by the Ministry of Education. For example, "The Implementation Opinions on Deepening the Reform of Innovation and Entrepreneurship Education in Higher Education Institutions" requires the inclusion of awareness and ability training on innovation and entrepreneurship education in pre-service training, teacher training, and other training programs, as well as the establishment of a system for innovation and entrepreneurship teachers to be seconded to enterprises for training. More importantly, combining short-term and long-term goals of teacher training to prevent it from becoming a mere formality is an important guarantee and urgent problem to improve the effectiveness of teacher training.

Supporting mechanism was at a high level. This is because government, society, enterprise and universities have taken various measures to support innovation and entrepreneurship education teachers. The related research can be seen from Song Lai and Xia Siyu (2022, p.43), who point out that the government plays a driving role in the implementation of entrepreneurship education, mainly providing directional guidance in terms of standardizing the construction of the teaching staff, teacher training, teacher assessment, encouraging teachers to work in enterprises and start their own businesses. The support of enterprises and social institutions for the construction of teaching staff is reflected in human resources support and resource investment. Universities provide incentive measures for innovation and entrepreneurship education teachers in terms of workload, professional title evaluation, and rewards. However, the insufficient support from

social entities and the lack of long-term incentive mechanism result in insignificant incentive effects.

Part 2: guidelines for improving the teaching staff construction level of innovation and entrepreneurship education in application-oriented universities in Zhejiang

1. Optimizing composition of the teaching staff

Strategy 1. Priority should be given to top-level design to clarify development goals, and formulate an overall plan for the teaching staff construction of innovation and entrepreneurship education. This is similar to the view of Liang Jingyi (2020, p.49) , who points out that the development of innovation and entrepreneurship education involves multiple disciplines and departments, and is a complex systematic project that requires high comprehensive quality of teachers. Therefore, it is necessary to mobilize resources from all aspects inside and outside the university in advance, and do a good job in the top-level design of innovation and entrepreneurship education. This is also similar to the view of Li Yuhan (2019, p.66) , who believes that the construction of the teaching staff for innovation and entrepreneurship education should start from the overall perspective, strengthen top-level design, incorporate innovation and entrepreneurship education into the overall development plan of universities, and formulate clear plans for the construction of the teaching staff.

Strategy 2. Innovate the mechanism for introducing teachers and broaden the channels for introducing talents. This is similar to the view of Tan Yao (2021, p57) , who believes that in the selection of talent introduction scope, universities should focus on the international and domestic talent markets, expand the scope and vision of talent introduction. Moreover, from the perspective of introducing teachers, a combination of online and offline methods should be adopted to carry out academic exchange activities at home and abroad, broaden the channels for introducing talents, improve the interaction between universities and talents. In addition, universities should actively tap part-time teacher resources, select high-quality enterprise technical personnel, and establish a “part-time teacher pool”.

Strategy 3. Encourage young teachers to pursue doctoral degrees and cultivate doctoral teachers with solid entrepreneurial theories to reserve high-level, specialized teaching staff. This is consistent with the views of Qiao Tingting (2022, p70) and Xia Siyu (2021, p57), who points out that innovation and entrepreneurship education is a discipline with interdisciplinary attributes. We can learn from some universities in Europe and America by supporting universities to explore the cultivation of innovation and entrepreneurship education majors at the master's and doctoral levels to build a professional talent training system and cultivate a group of innovation and entrepreneurship education research talents with systematic theoretical knowledge and rich practical knowledge.

Strategy 4. Establish a suitable mix of full-time and part-time teaching staff with a multi-disciplinary background. This is similar to the view of Li Tongbin (2017, p114) and Tang Jian (2017, p47), who believes that the interdisciplinary nature of innovation and entrepreneurship education requires a teaching staff with background knowledge in economics, management, engineering, and other disciplines. Its practicality also requires the participation of entrepreneurs, venture capitalists, government experts, business and finance experts, and other personnel.

2. Enhancing professional qualities of the teaching staff

Strategy 5. Based on the recognition of their professional identity, teachers should actively learn knowledge of innovation and entrepreneurship education to improve their teaching level. This is similar to the view of Qiao Tingting (2022, p.75) , who points out that only when a teacher truly recognizes his profession from the bottom of his heart, acknowledges and accepts the role of a teacher, can he fully unleash his potential and devote himself wholeheartedly to teaching activities. Liang Jingyi (2020, p.54), Wu Song (2017, p.100) and Xia Siyu (2021, p.55) suggest that innovation and entrepreneurship teachers should establish the awareness of lifelong learning and active learning, actively learn innovation and entrepreneurship education knowledge and skills through various channels and methods to improve their own teaching level.

Strategy 6. Teachers should innovate the teaching mode and curriculum assessment mode according to the characteristics of innovation and entrepreneurship disciplines, and increase the proportion of practical teaching and practical ability assessment. This is consistent with the view of Gu Liuwan (2017, p.49), Zhang Hong (2020, p.38) and Wu Song (2017, p.99) , who believe that due to the strong practicality of innovation and entrepreneurship courses, traditional rote learning methods should be abandoned in the teaching process, and multiple teaching methods and models should be adopted to provide students with diversified learning modes. Teachers should transform traditional teaching methods into lively interactive scenarios, oriented towards practice, emphasizing participation, and shifting emphasis from knowledge to ability in course assessment, the assessment method may be long-term and continuous, rather than a short-term test.

Strategy 7. Fully implement the system of teachers entering enterprises for practice to enhance the practical teaching ability of teachers in innovation and entrepreneurship education. This is consistent with the view of Zhou Qianhong (2023, p.53) and Liu Xiao (2013, p.30), who believes that most innovation and entrepreneurship education teachers lack entrepreneurial experience and work experience in enterprises, which has negative effect on the work of innovation and entrepreneurship education. Therefore, universities should encourage teachers to start their own businesses or intern in enterprises for training, so that teachers can personally experience corporate culture, participate in the production, construction, service, and management of enterprises, and better improve the knowledge structure of innovation and entrepreneurship, and adjust teaching plans and teaching arrangements in a timely manner. Gu Liuwan (2017, p.49) points out that teachers' secondment to enterprises for training can be combined with industry university research cooperation, technology transfer, and leading students in innovation and entrepreneurship. It can not only provide technical support for enterprises, but also enhance teachers' practical and entrepreneurial skills, and better guide students in entrepreneurship.

Strategy 8. Build an interactive communication platform for teachers of innovation and entrepreneurship education to strengthen knowledge sharing among them. This is similar to the view of Li Meng (2018, p4.6) and Zhang Xueliang (2018, p.40), who propose that it is indispensable to establish a national innovation and entrepreneurship information exchange platform in order to gather more resources for innovation and entrepreneurship education, and to enable universities to develop innovation and entrepreneurship education in a dynamic and open manner and build a team of innovation and entrepreneurship education teachers. Moreover, teachers should strengthen communication with other teachers. They can quickly improve their own teaching level by actively participating in online and offline exchange activities and sharing teaching experience to complement each other's strengths and weaknesses.

3. Improving management and assessment

Strategy 9. Strictly regulate the admission mechanism and establish qualification certification standards for innovation and entrepreneurship education teachers. This is similar to the view of Li Meng (2018, p.48), Xia Siyu (2021, p.55), Wu Song (2017, p.94) and Qiao Tingting (2022, p.68) , who propose that a standardized admission mechanism is the important guarantee for the quality of innovation and entrepreneurship education faculty. There should be strict selection criteria, methods, and procedures when hiring teachers. A standardized admission mechanism and qualification certification standard system for innovation and entrepreneurship education teachers should be established to attract outstanding talents who meet the requirements into the innovation and entrepreneurship teaching staff.

Strategy 10. Adopt a classification management and evaluation system for innovation and entrepreneurship education teachers. This is similar to the view of Tang Jian (2017, p.53) and Liang Jingyi (2020, p.52) , who believe that universities should clarify the job responsibilities and requirements of different types of innovation and entrepreneurship education teachers based on the characteristics of the discipline, and formulate corresponding promotion, appointment, assessment, reward and punishment methods and allowance standards to ensure fairness and reflect efficiency.

Strategy 11. Improve the evaluation and assessment system for teachers of innovation and entrepreneurship education to comprehensively and dynamically assess the achievements of them. This is similar to the view of Wu Song (2017, p.98), who points out that in terms of evaluation indicators, universities should increase the weight of evaluation in areas such as curriculum development, teaching mode reform, practical guidance, and technological achievement transformation; In terms of evaluation form, universities should change the traditional evaluation form and implement evaluations such as entrepreneurship teacher growth record bags and teacher file evaluations, fully recording the entrepreneurial achievements of entrepreneurship teachers in each period. In addition, universities should implement a multi-party evaluation form, observing the growth process of entrepreneurial teachers in real time and dynamically, which is helpful for the professional development of innovation and entrepreneurship education teachers.

Strategy 12. Establish a fast and effective supervision and feedback mechanism to ensure teaching quality. This is similar to the view of Li Meng (2018, p.53), who points out that the Academic Affairs Office of universities should strengthen the supervision and guidance of the teaching process of innovation and entrepreneurship education teachers, and use methods such as irregular spot checks on lesson plans and listening to teachers' lectures to review the completion of teachers' teaching work, timely discover problems and difficulties in teachers' teaching process, explore the causes of teaching problems, and take effective measures. Meanwhile, universities should adjust the management mechanism of the innovation and entrepreneurship education faculty team appropriately based on the completion of departmental goals and changes in the external environment, so as to ensure that the construction of the innovation and entrepreneurship education faculty team in universities is in a long-term state of supervision, feedback, and continuous improvement.

4. Promoting teacher training

Strategy 13. Establish a specialized and normalized mechanism for teacher training, and include teacher training in the scope of evaluation and assessment. This is similar to the view of Qiao Tingting (2022, p.72) and Liu Dekang

(2021, p.53), who point out that there are still problems in the training of innovation and entrepreneurship teachers in application universities, such as a single training form, low compatibility between training content and the characteristics of innovation and entrepreneurship education, and insufficient training time. Therefore, universities should establish a dynamic and normalized training system to enhance the overall quality of the innovation and entrepreneurship education teaching staff. He also adds that in order to make teachers attach importance to training, it is also necessary to include training work in the evaluation scope to ensure that teachers actively participate and achieve good training results.

Strategy 14. Expand the channels and forms of teacher training, and improve the preciseness and effectiveness of training. This is consistent with the view of Wen Jun (2020, p.44) and Qiao Tingting (2022, p.73), who propose that on the one hand, universities can leverage their existing industry-university-research platforms to strengthen their connections with society, and extensively hire experienced professionals from various fields such as experts, entrepreneurs, technical researchers, etc. to provide training for teachers. This can to some extent compensate for the lack of practical experience and professional knowledge of innovation and entrepreneurship teachers in universities. On the other hand, universities can make full use of excellent innovation and entrepreneurship resources at home and abroad, broaden training channels, encourage teachers to participate in innovation and entrepreneurship teacher training programs at home and abroad, in order to enable teachers to grasp cutting-edge knowledge of international innovation and entrepreneurship education and improve the level of innovation and entrepreneurship teaching.

Strategy 15. Create an online training platform and provide teachers with various training programs they need. This is consistent with the view of Zhou Qianhong (2023, p.57) and Chen Han (2019, p.78), who propose that led by the government, with the participation of enterprises and implemented by universities, an online innovation and entrepreneurship education teacher training platform will be established to provide online and offline training for innovation and entrepreneurship education teachers. Through the training, teachers will learn about

the latest development trends, teaching methods, theoretical and practical achievements in innovation and entrepreneurship at home and abroad, and exchange experiences and insights with each other. The platform can continuously optimize training content based on the needs of teachers and changes in the external innovation and entrepreneurship environment, thereby achieving the goal of rapidly improving the level of teachers.

Strategy 16. Establish specific training effectiveness evaluation systems, specify the training requirements and assessment standards, track and manage the training of participants to improve effects of training. This is similar to the view of Qiao Tingting (2022, p.73), who points out that the training of innovation and entrepreneurship education teachers should have continuity and effectiveness, and the actual effectiveness of the training should be analyzed to clarify and refine the requirements for skill acquisition. The threshold for training results should be raised, and the acquisition of qualification certificates should be an important reference for effective participation in teacher training.

5. Boosting supporting mechanism

Strategy 17. Provide special funding for the construction and support of innovative and entrepreneurial education teaching staff. This is similar to the view of Wen Jun (2020, p.44), who believes that universities should, based on compliance with relevant laws and regulations and the actual situation of the university, establish a sound funding guarantee system for the construction of innovation and entrepreneurship teaching staff, implement strict special funds and approval systems and provide sufficient funds for teachers to carry out innovation and entrepreneurship work. This ensures expenditures in teacher selection, training, and scientific research. Li Tongbin (2017, p.115) and Liang Jingyi (2020, p.48) point out that the main sources of special funds are government appropriations, social donations, and those raised by universities, but the main source is still government appropriations. Firstly, the government's special fund investment should continue to increase; Secondly, preferential policies such as tax reductions, training allowances, and cooperation rewards should be established for social institutions and enterprises that have good cooperation with university innovation and entrepreneurship education teachers. In

addition, universities should actively utilize their own advantages to expand funding sources through serving society and market-oriented operations.

Strategy 18. Improving the external environment for innovation and entrepreneurship teachers to implement innovation and entrepreneurship education. This is similar to the view of Wen Jun (2020, p.44) and Zhang Xueliang (2018, p.49), who point out that universities should provide job support and guarantees for innovation and entrepreneurship education. On the one hand, universities should play a leading role, increase the participation of the government, society, and enterprises in the university's innovation and entrepreneurship work, form a joint force to assist the university's innovation and entrepreneurship department in its work, provide work support for teachers who encounter difficulties in the process of innovation and entrepreneurship education, and eliminate obstacles outside of work. On the other hand, innovation and entrepreneurship communities should be established within and between universities, where teachers can pair up and help each other, share experiences, and grow together.

Strategy 19. Develop a comprehensive incentive system for innovation and entrepreneurship education teachers that is in line with the actual situation of their universities. This is similar to the view of Chen Han (2019, p.82), who believes that developing a comprehensive incentive system for innovative and entrepreneurial teachers that is in line with the actual situation of our university is the most direct and fundamental means of guarantee for the teaching staff construction of innovation and entrepreneurship education. The development pursuit of teachers can be divided into three levels: material needs, honor needs, and career development needs. Universities can provide material rewards, honorary rewards, and career development training opportunities for innovation and entrepreneurship education teachers. Wu Song (2017, p.98) adds that the achievements of entrepreneurship teachers can be recognized through the establishment of entrepreneurship teaching funds, the issuance of entrepreneurship excellent mentor certificates, the creation of entrepreneurship excellent subject leaders, and the reward of outstanding achievements in entrepreneurship practice. And promote the honors obtained by entrepreneurship teachers through various channels such as the internet and campus

media websites, enhance the sense of belonging and self-efficacy of the entrepreneurship teaching staff, and stimulate the enthusiasm of entrepreneurship teachers to engage in entrepreneurship teaching.

Strategy 20. Enhance the cooperation between universities and enterprise to boost the cultivation of innovation and entrepreneurship education teachers. This is consistent with the view of Jin Xiaoyu (2022, p.28) and Wu Song (2017, p.92), who propose that universities and enterprises should establish a two-way communication mechanism through "going out" and "bringing in" to form a good partnership. On the one hand, universities should send teachers to enterprises for on-the-job training, so that teachers can step out of the ivory tower, personally participate in project market operations, understand the management mode and philosophy of enterprises, and avoid serious disconnection between rigid theories and social reality. On the other hand, enterprises should leverage their human resource advantages by appropriately dispatching management talents and technical elites to universities as part-time teachers or guest professors, conveying cutting-edge industry development trends in entrepreneurship classrooms, gaining profound insights into social needs, and helping students avoid risks. In this way, it can form a virtuous cycle system for talent cultivation and achieve "cooperative teacher training" between universities and enterprises.

Part 3: The suitability and feasibility of guidelines for improving the teaching staff construction of innovation and entrepreneurship education in application-oriented universities in Zhejiang

The suitability and feasibility of guidelines for improving the teaching staff construction of innovation and entrepreneurship education in application-oriented universities in Zhejiang in five dimensions were all at the high level, which means guidelines for improving the teaching staff construction of innovation and entrepreneurship education is suitable and feasible in practice.

The suitability and feasibility of optimizing the composition of the teaching staff were at the high level. This is because a good teaching staff is composed of teachers with a suitable ratio of full-time and part-time positions and a multidisciplinary background. To build such a faculty team, universities need to

carefully formulate an overall plan for the construction of innovation and entrepreneurship education faculty team after clarifying their development goals, innovate the mechanism for introducing teachers, broaden the channels for introducing talents, and cultivate doctoral teachers in innovation and entrepreneurship education in order to achieve this goal. The related research can be seen from Jin Xiaoyu (2022, p.27), who believes that universities should integrate effective resources both inside and outside the campus, allocate team composition reasonably, and promote diversified development of the teaching staff. The innovation and entrepreneurship faculty in universities mainly come from two sources: self training and external referrals. On the one hand, self cultivation should encourage teachers to change their teaching concepts, break down the boundaries of majors, disciplines, and colleges, and carry out collaborative innovation through interdisciplinary research to jointly create a new type of innovation and entrepreneurship education. On the other hand, external referrals involve systematically hiring outstanding entrepreneurs, entrepreneurs, venture capitalists, and others as part-time teachers.

The suitability and feasibility of enhancing professional qualities of the teaching staff were at the high level. This is because innovation and entrepreneurship education has the characteristics of interdisciplinary, emphasis on practice, and strong interactivity etc. This requires innovation and entrepreneurship education teachers not only to have systematic theoretical knowledge, but also to have experience in entrepreneurship or deep involvement in enterprises, and to actively learn and update knowledge in order to meet the teaching requirements of innovation and entrepreneurship education. The related research can be seen from Gu Wanliu (2017, p.49), who believes that universities should encourage teachers to innovate educational and teaching models based on the characteristics of disciplines, professional requirements, and students' literacy, advocate for teachers to update teaching content in a timely manner, implement participatory heuristic and discussion based teaching methods, and cultivate students' critical and creative thinking. Moreover, universities should deepen the promotion of teachers' social practice exercises.

The suitability and feasibility of improving management and assessment were at the high level. This is because only by establishing clear standards for teacher selection and employment, implementing a dynamic management mechanism of survival of the fittest, allowing teachers to get hired or fired, be promoted or demoted, and fairly and comprehensively evaluate teachers, can universities improve the overall quality of the innovation and entrepreneurship education faculty and enhance the teaching level of innovation and entrepreneurship education. The related research can be seen from Tang Jian (2017, p52), who believes that clear selection criteria can ensure the high quality of the innovation and entrepreneurship education teaching staff. The introduction and stability of talents cannot be achieved without a sound management system. Universities should attract and stabilize the team of innovation and entrepreneurship education teaching staff through comprehensive institutional guarantees. It is also necessary to improve the evaluation system for innovation and entrepreneurship education teachers to achieve the survival of the fittest among teachers.

The suitability and feasibility of promoting teacher training were at the high level. This is because teacher training is a rapid way to enhance teachers' theoretical knowledge and professional teaching abilities, as well as an important way to obtain the latest relevant subject information and communicate teaching experience. Universities should build a teacher training system in stages, levels, multiple channels, and all aspects based on the current situation and future development needs of the innovation and entrepreneurship education faculty, track the training situation, in order to improve training effectiveness, and promote the improvement of teaching quality. The related research can be seen from Zhang Xueliang (2018, p.47), who points out that universities should establish a specialized and normalized mechanism for teacher training, and include teacher training in the scope of evaluation and assessment. A nationwide online training platform should also be built to providing teachers with various training programs and the need to share teaching experience.

The suitability and feasibility of boosting supporting mechanism were at the high level. This is because the development of innovation and entrepreneurship education requires the participation and support of the whole society. It is necessary

to build a collaborative framework among government, enterprises, universities and teachers to promote the healthy development of the innovation and entrepreneurship education teaching staff. The related research can be seen from Zhang Xueliang (2018, p.47), who believes that to better boost teaching staff construction, institutional, funding, organizational and employment guarantee are indispensable. With government' policy and funding support, enterprises' cooperation with universities, universities' introduction of more incentive measures, teachers' active involvement in teaching and research, the teaching staff construction can achieve sustainable development.

Recommendations

Implications

The results show that the guidelines for improving the teaching staff construction level of innovation and entrepreneurship education in application-oriented universities in Zhejiang were as follows:

To optimize composition of the teaching staff, administrators should do the following things: 1. Give priority to top-level design to clarify development goals, and formulate an overall plan for the teaching staff construction of innovation and entrepreneurship education; 2. Innovate the mechanism for introducing teachers and broaden the channels for introducing talents; 3. Encourage young teachers to pursue doctoral degrees and cultivate doctoral teachers with solid entrepreneurial theories to reserve high-level, specialized teaching staff; 4. Establish a suitable mix of full-time and part-time teaching staff with a multi-disciplinary background.

To enhance professional qualities of the teaching staff, administrators should do the following things: 1. Encourage teachers to actively learn knowledge of innovation and entrepreneurship education to improve their teaching level; 2. Encourage teachers to innovate the teaching mode and curriculum assessment mode according to the characteristics of innovation and entrepreneurship disciplines, and increase the proportion of practical teaching and practical ability assessment; 3. Fully implement the system of teachers entering enterprises for practice to enhance the practical teaching ability of teachers in innovation and entrepreneurship education;

4. Build an interactive communication platform for teachers of innovation and entrepreneurship education to strengthen knowledge sharing among them.

To improve management and assessment, administrators should do the following things: 1. Strictly regulate the admission mechanism and establish qualification certification standards for innovation and entrepreneurship education teachers; 2. Adopt a classification management and evaluation system for innovation and entrepreneurship education teachers; 3 Improve the evaluation and assessment system for teachers of innovation and entrepreneurship education to comprehensively and dynamically assess the achievements of them; 4 Establish a fast and effective supervision and feedback mechanism to ensure teaching quality.

To promote teacher training, administrators should do the following things: 1. Establish a specialized and normalized mechanism for teacher training, and include teacher training in the scope of evaluation and assessment; 2. Expand the channels and forms of teacher training, and improve the preciseness and effectiveness of training; 3. Create an online training platform and provide teachers with various training programs they need; 4. Establish specific training effectiveness evaluation systems, specify the training requirements and assessment standards, track and manage the training of participants to improve effects of training.

To boost supporting mechanism, administrators should do the following things: 1. Provide special funding for the construction and support of innovative and entrepreneurial education teaching staff; 2. Improving the external environment for innovation and entrepreneurship teachers to implement innovation and entrepreneurship education; 3. Develop a comprehensive incentive system for innovation and entrepreneurship education teachers that is in line with the actual situation of their universities; 4. Enhance the cooperation between universities and enterprise to boost the cultivation of innovation and entrepreneurship education teachers.

Future Research

1. There are limitations in the sample selection of survey subjects. The small sample size of teachers cannot fully reflect the current development status of innovation and entrepreneurship education teachers, and the survey results have certain biases. Efforts should be made to expand the scope of sample selection, supplement more questionnaires, and cover as many innovation and entrepreneurship education teachers as possible from different regions and universities, in order to obtain more diverse development information of innovation and entrepreneurship education teachers.

2. This study used a combination of questionnaire, survey and interview research methods, but no professional interview data processing tools were used for the data analysis. In future studies, professional interview data processing tools can be used to scientifically summarize and organize the interview information, which will help to more scientifically understand the differences of the teaching staff construction level of innovation and entrepreneurship education in different dimensions, and enrich the data and findings in future studies.

3. The teaching staff construction of innovation and entrepreneurship education is not only an internal matter of universities, but also involves multiple entities such as the state, localities, society, and enterprises. It requires joint efforts from all parties to collaboratively build a high-quality faculty team and cultivate more high-quality innovative talents for society. The five variables and related strategies involved in this study can be further optimized by conducting in-depth research on each. For example, the assessment and evaluation of teachers need to be quantified, and a model needs to be established to select the optimal assessment method. More quantitative research is needed to develop effective incentive measures for teachers.

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Appendix

Appendix A

List of Specialists and Letters of Specialists Invitation for IOC Verification

List of Specialists and Letters of Specialists Invitation for IOC Verification

1. Yuan Lei,	Degree : Doctor of education
	Position: Guangxi Normal University, Professor
2. Ma Huanling,	Degree : Doctor of education
	Position: Guangxi Normal University, Professor
3. Dong Manxue	Degree : Doctor of education
	Position: Lishui University

Ref.No.MHESI 0643.14/80

Bansomdejchaopraya Rajabhat University
1061 Itsarapap 15 Itsarapap Rd.
Thonburi Bangkok 10600

19 January 2024

Subject Request letter for instrument validation

Dear Professor Dr. Yuan Lei, Guangxi Normal University

Attachment 1 questionnaire

Regarding Mr. He Lichuan with student code 6373104141, a doctoral student majoring in the Educational Administration program at Bansomdejchaopraya Rajabhat University. The thesis is entitled "Guidelines for Improving the Teaching Staff Construction of Innovation and Entrepreneurship Education in Application-Oriented Universities in Zhejiang". The thesis committee is as follows:

1. Associate Professor Dr. Jittawisut Wimuttipanya Advisor
2. Associate Professor Dr. Niran Sutheeniran Co-advisor
3. Assistant Professor Dr. Kulsirin Aphiratvoradej Co-Advisor

In this research, the researcher requires to check the content validity of the instrument to get the most complete research instrument. Knowing your experience in the field of the said research, the researcher would like to ask for your assistance in validating the said instrument. Your suggestions will be useful for improving the quality and suitability of research instruments for use in collecting data for this research.

Sincerely,

(Assistant Professor Dr. Kanakorn Sawangcharoen)
Dean of Graduate school
Bansomdejchaopraya Rajabhat University

Tel. (662) 4737000
Fax. (662) 4737000

Ref.No.MHESI 0643.14/79

Bansomdejchaopraya Rajabhat University
1061 Itsarapap 15 Itsarapap Rd.
Thonburi Bangkok 10600

19 January 2024

Subject Request letter for instrument validation

Dear Professor Dr. Ma Huanling, Guangxi Normal University

Attachment 1 questionnaire

Regarding Mr. He Lichuan with student code 6373104141, a doctoral student majoring in the Educational Administration program at Bansomdejchaopraya Rajabhat University. The thesis is entitled "Guidelines for Improving the Teaching Staff Construction of Innovation and Entrepreneurship Education in Application-Oriented Universities in Zhejiang". The thesis committee is as follows:

1. Associate Professor Dr. Jittawisut Wimuttipanya Advisor
2. Associate Professor Dr. Niran Sutheeniran Co-advisor
3. Assistant Professor Dr. Kulsirin Aphiratvoradej Co-Advisor

In this research, the researcher requires to check the content validity of the instrument to get the most complete research instrument. Knowing your experience in the field of the said research, the researcher would like to ask for your assistance in validating the said instrument. Your suggestions will be useful for improving the quality and suitability of research instruments for use in collecting data for this research.

Sincerely,

(Assistant Professor Dr. Kanakorn Sawangcharoen)
Dean of Graduate school
Bansomdejchaopraya Rajabhat University

Tel. (662) 4737000
Fax. (662) 4737000

Ref.No.MHESI 0643.14/81

Bansomdejchaopraya Rajabhat University
1061 Itsarapap 15 Itsarapap Rd.
Thonburi Bangkok 10600

19 January 2024

Subject Request letter for instrument validation

Dear Dong Manxue, Lishui University

Attachment 1 questionnaire

Regarding Mr. He Lichuan with student code 6373104141, a doctoral student majoring in the Educational Administration program at Bansomdejchaopraya Rajabhat University. The thesis is entitled "Guidelines for Improving the Teaching Staff Construction of Innovation and Entrepreneurship Education in Application-Oriented Universities in Zhejiang". The thesis committee is as follows:

1. Associate Professor Dr. Jittawisut Wimuttipanya Advisor
2. Associate Professor Dr. Niran Sutheeniran Co-advisor
3. Assistant Professor Dr. Kulsirin Aphiratvoradej Co-Advisor

In this research, the researcher requires to check the content validity of the instrument to get the most complete research instrument. Knowing your experience in the field of the said research, the researcher would like to ask for your assistance in validating the said instrument. Your suggestions will be useful for improving the quality and suitability of research instruments for use in collecting data for this research.

Sincerely,

(Assistant Professor Dr. Kanakorn Sawangcharoen)
Dean of Graduate school
Bansomdejchaopraya Rajabhat University

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Appendix B

Official Letter

Ref.No.MHESI 0643.14/82

Bansomdejchaopraya Rajabhat University
1061 Itsarapap 15 Itsarapap Rd.
Thonburi Bangkok 10600

19 January 2024

Subject Request for Data Collection

Dear President of Zhejiang University of Science and Technology

Attachment 1. Questionnaires
2. Structured interview

Regarding Mr. He Lichuan with student code 6373104141, a doctoral student majoring in the Educational Administration program at Bansomdejchaopraya Rajabhat University. The thesis is entitled "Guidelines for Improving the Teaching Staff Construction of Innovation and Entrepreneurship Education in Application-Oriented Universities in Zhejiang". The thesis committee is as follows:

1. Associate Professor Dr. Jittawisut Wimuttipanya Advisor
2. Associate Professor Dr. Niran Sutheeniran Co-advisor
3. Assistant Professor Dr. Kulsirin Aphiratvoradej Co-Advisor

In this research, the researcher is required to collect data for the said research. Therefore, the researcher requested to collect the data to be used in the research.

Sincerely,

(Assistant Professor Dr.Kanakorn Sawangcharoen)
Dean of Graduate school
Bansomdejchaopraya Rajabhat University

Tel. (662) 4737000
Fax. (662) 4737000

Ref.No.MHESI 0643.14/83

Bansomdejchaopraya Rajabhat University
1061 Itsarapap 15 Itsarapap Rd.
Thonburi Bangkok 10600

19 January 2024

Subject Request for Data Collection

Dear President of Zhejiang University of Water Resources and Hydropower

Attachment 1. Questionnaires
2. Structured interview

Regarding Mr. He Lichuan with student code 6373104141, a doctoral student majoring in the Educational Administration program at Bansomdejchaopraya Rajabhat University. The thesis is entitled "Guidelines for Improving the Teaching Staff Construction of Innovation and Entrepreneurship Education in Application-Oriented Universities in Zhejiang". The thesis committee is as follows:

1. Associate Professor Dr. Jittawisut Wimuttipanya Advisor
2. Associate Professor Dr. Niran Sutheeniran Co-advisor
3. Assistant Professor Dr. Kulsirin Aphiratvoradej Co-Advisor

In this research, the researcher is required to collect data for the said research. Therefore, the researcher requested to collect the data to be used in the research.

Sincerely,

(Assistant Professor Dr.Kanakorn Sawangcharoen)
Dean of Graduate school
Bansomdejchaopraya Rajabhat University

Tel. (662) 4737000
Fax. (662) 4737000

Ref.No.MHESI 0643.14/84

Bansomdejchaopraya Rajabhat University
1061 Itsarapap 15 Itsarapap Rd.
Thonburi Bangkok 10600

19 January 2024

Subject Request for Data Collection

Dear President of Huzhou Normal University

Attachment 1. Questionnaires
2. Structured interview

Regarding Mr. He Lichuan with student code 6373104141, a doctoral student majoring in the Educational Administration program at Bansomdejchaopraya Rajabhat University. The thesis is entitled "Guidelines for Improving the Teaching Staff Construction of Innovation and Entrepreneurship Education in Application-Oriented Universities in Zhejiang". The thesis committee is as follows:

1. Associate Professor Dr. Jittawisut Wimuttipanya Advisor
2. Associate Professor Dr. Niran Sutheeniran Co-advisor
3. Assistant Professor Dr. Kulsirin Aphiratvoradej Co-Advisor

In this research, the researcher is required to collect data for the said research. Therefore, the researcher requested to collect the data to be used in the research.

Sincerely,

(Assistant Professor Dr.Kanakorn Sawangcharoen)
Dean of Graduate school
Bansomdejchaopraya Rajabhat University

Tel. (662) 4737000
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Ref.No.MHESI 0643.14/85

Bansomdejchaopraya Rajabhat University
1061 Itsarapap 15 Itsarapap Rd.
Thonburi Bangkok 10600

19 January 2024

Subject Request for Data Collection

Dear President of Jiaxing University

Attachment 1. Questionnaires
2. Structured interview

Regarding Mr. He Lichuan with student code 6373104141, a doctoral student majoring in the Educational Administration program at Bansomdejchaopraya Rajabhat University. The thesis is entitled "Guidelines for Improving the Teaching Staff Construction of Innovation and Entrepreneurship Education in Application-Oriented Universities in Zhejiang". The thesis committee is as follows:

1. Associate Professor Dr. Jittawisut Wimuttipanya Advisor
2. Associate Professor Dr. Niran Sutheeniran Co-advisor
3. Assistant Professor Dr. Kulsirin Aphiratvoradej Co-Advisor

In this research, the researcher is required to collect data for the said research. Therefore, the researcher requested to collect the data to be used in the research.

Sincerely,

(Assistant Professor Dr.Kanakorn Sawangcharoen)
Dean of Graduate school
Bansomdejchaopraya Rajabhat University

Tel. (662) 4737000
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Ref.No.MHESI 0643.14/86

Bansomdejchaopraya Rajabhat University
1061 Itsarapap 15 Itsarapap Rd.
Thonburi Bangkok 10600

19 January 2024

Subject Request for Data Collection

Dear President of Ningbo University of Engineering

Attachment 1. Questionnaires
2. Structured interview

Regarding Mr. He Lichuan with student code 6373104141, a doctoral student majoring in the Educational Administration program at Bansomdejchaopraya Rajabhat University. The thesis is entitled "Guidelines for Improving the Teaching Staff Construction of Innovation and Entrepreneurship Education in Application-Oriented Universities in Zhejiang". The thesis committee is as follows:

1. Associate Professor Dr. Jittawisut Wimuttipanya Advisor
2. Associate Professor Dr. Niran Sutheeniran Co-advisor
3. Assistant Professor Dr. Kulsirin Aphiratvoradej Co-Advisor

In this research, the researcher is required to collect data for the said research. Therefore, the researcher requested to collect the data to be used in the research.

Sincerely,

(Assistant Professor Dr.Kanakorn Sawangcharoen)
Dean of Graduate school
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Tel. (662) 4737000
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Ref.No.MHESI 0643.14/87

Bansomdejchaopraya Rajabhat University
1061 Itsarapap 15 Itsarapap Rd.
Thonburi Bangkok 10600

19 January 2024

Subject Request for Data Collection

Dear President of Taizhou University

Attachment 1. Questionnaires
2. Structured interview

Regarding Mr. He Lichuan with student code 6373104141, a doctoral student majoring in the Educational Administration program at Bansomdejchaopraya Rajabhat University. The thesis is entitled "Guidelines for Improving the Teaching Staff Construction of Innovation and Entrepreneurship Education in Application-Oriented Universities in Zhejiang". The thesis committee is as follows:

1. Associate Professor Dr. Jittawisut Wimuttipanya Advisor
2. Associate Professor Dr. Niran Sutheeniran Co-advisor
3. Assistant Professor Dr. Kulsirin Aphiratvoradej Co-Advisor

In this research, the researcher is required to collect data for the said research. Therefore, the researcher requested to collect the data to be used in the research.

Sincerely,

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Dean of Graduate school
Bansomdejchaopraya Rajabhat University

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Ref.No.MHESI 0643.14/88

Bansomdejchaopraya Rajabhat University
1061 Itsarapap 15 Itsarapap Rd.
Thonburi Bangkok 10600

19 January 2024

Subject Request for Data Collection

Dear President of Lishui University

Attachment 1. Questionnaires
2. Structured interview

Regarding Mr. He Lichuan with student code 6373104141, a doctoral student majoring in the Educational Administration program at Bansomdejchaopraya Rajabhat University. The thesis is entitled "Guidelines for Improving the Teaching Staff Construction of Innovation and Entrepreneurship Education in Application-Oriented Universities in Zhejiang". The thesis committee is as follows:

1. Associate Professor Dr. Jittawisut Wimuttipanya Advisor
2. Associate Professor Dr. Niran Sutheeniran Co-advisor
3. Assistant Professor Dr. Kulsirin Aphiratvoradej Co-Advisor

In this research, the researcher is required to collect data for the said research. Therefore, the researcher requested to collect the data to be used in the research.

Sincerely,

(Assistant Professor Dr.Kanakorn Sawangcharoen)
Dean of Graduate school
Bansomdejchaopraya Rajabhat University

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Appendix C

Research Instrument

Questionnaire

Dear teacher/administrator:

This questionnaire is to investigate the current situation of the teaching staff construction of innovation and entrepreneurship education in application-oriented universities in Zhejiang. The data collected in this questionnaire is only for my research paper and has no other purpose. We will only use the survey content for research purposes. We promise to strictly keep the answers you provide confidential. The answer you will give us next is of great significance for our research. Please provide a true answer based on your own real situation. There is no right or wrong answer, and everything that reflects your true situation is correct. Next, I hope you can spare your valuable time to fill out the questionnaire survey below. Thank you again for your cooperation.

Part I: respondent status (personal information)

1. Your gender

(1) Male

(2) Female

2. Your age

(1) From 20-30 years old

(2) From 31-40 years old

(3) From 41-50 years old

(4) Over 51 years old

3. The highest degree

(1) Bachelor's degree

(2) Master's degree

(3) Doctor's degree

4. Your professional rank

(1) Professor

(2) Associate professor

(3) Lecturer

(4) Teaching assistant

5. Your teaching identity

(1) Full-time teacher

(2) Part-time teacher

(3) Entrepreneurship Mentor in business

Part 2: Questionnaire: The status quo survey of the teaching staff construction level of innovation and entrepreneurship education in application-oriented universities in Zhejiang

5 express is very consistent

4 express is more consistent line

3 express is uncertainty

2 express is nonconformity

1 express is Very non-compliant

Item	The status quo of the teaching staff construction level of innovation and entrepreneurship education in application-oriented universities in Zhejiang	Level				
		5	4	3	2	1
	Composition of the teaching staff					
1	The number of innovation and entrepreneurship teachers in the university can meet the needs of innovation and entrepreneurship education					
2	The university has established a well-structured team of innovation and entrepreneurship education teacher in age					
3	The university has established a well-structured team of innovation and entrepreneurship education teacher in professional title					
4	The university has established a well-structured team of innovation and entrepreneurship education teacher in educational background					
5	The proportion of full-time and part-time teachers in innovation and entrepreneurship education is appropriate					

Item	The status quo of the teaching staff construction level of innovation and entrepreneurship education in application-oriented universities in Zhejiang	Level				
		5	4	3	2	1
	Professional qualities of the teaching staff					
6	You have systematically studied the theoretical knowledge of innovation and entrepreneurship					
7	You have rich practical experience in innovation and entrepreneurship					
8	You are capable of teaching innovation and entrepreneurship					
9	You have a high level of innovation and entrepreneurship guidance ability					
10	You often use various teaching methods such as project-based teaching, case-based teaching, participatory or experiential teaching in the classroom					
11	You have clear professional development goals and plans for engaging in innovation and entrepreneurship work					
	Management and assessment					
12	The university has established clear standards for the selection and employment of teachers in innovation and entrepreneurship education					
13	The evaluation and assessment standards for university innovation and entrepreneurship teachers are fair and reasonable					
14	The university’s evaluation and assessment methods for innovation and entrepreneurship teachers are scientific and effective					
15	The university's evaluation and assessment of innovation and entrepreneurship teachers have shown significant results					

Item	The status quo of the teaching staff construction level of innovation and entrepreneurship education in application-oriented universities in Zhejiang	Level				
		5	4	3	2	1
16	The university's management of innovation and entrepreneurship teachers is satisfactory					
	Teacher training					
17	The types of training in innovation and entrepreneurship education you receive each year are diverse and abundant					
18	You are satisfied with the practice and training opportunities provided by the university					
19	You are interested in the training content provided by the university					
20	Through training, your professional abilities and qualities have been greatly improved, and the training effect is significant					
	Supporting mechanism					
21	You are satisfied with your work environment					
22	You are satisfied with the salary and benefits as a innovation and entrepreneurship education teacher					
23	You are satisfied with the professional title evaluation and appointment/removal of innovation and entrepreneurship education teachers					
24	You are satisfied with the promotion channels and development space provided by the university for innovation and entrepreneurship education teachers					
25	Your university has established a comprehensive incentive mechanism for innovation and entrepreneurship education teachers					

Item	The status quo of the teaching staff construction level of innovation and entrepreneurship education in application-oriented universities in Zhejiang	Level				
		5	4	3	2	1
26	The supporting measures for the teaching staff construction of innovation and entrepreneurship education in the current national, social, and university policies are relatively complete					

Interview outline

1. Could you briefly introduce the current situation of the composition of the teaching staff in the innovation and entrepreneurship education in your university? What are your views and suggestions on optimizing the composition of the teaching staff?

2. Could you briefly introduce the professional quality of the innovation and entrepreneurship education teachers in your university. What are your views and suggestions on enhancing teachers' professional quality?

3. Could you briefly introduce the management and evaluation of innovation and entrepreneurship education teachers in your university. What are your views and suggestions for improving teacher management and evaluation?

4. Could you briefly introduce the training of innovation and entrepreneurship education in your university. What are your views and suggestions for promoting teacher training?

5. Could you briefly introduce the supporting mechanism of innovation and entrepreneurship education in your university. What are your views and suggestions on boosting the supporting mechanism for innovation and entrepreneurship education?

Original record of interviews

Interviewee 1

Question 1: As far as I know, the innovation and entrepreneurship education teachers in our university are divided into three categories: first, the number of full-time teachers like me, which is relatively small, there are only 8 teachers in total, under the management of the part-time teachers in the university, which is a large number of the academic administrators of the entrepreneurship university. Third, after-university mentors, mainly some entrepreneurs, with a large number of people. From the perspective of the total number of teachers, it should be able to meet the needs of the university teaching. After all, although this course is a required course, it is only 1 credit and 18 credit hours, which can only be completed in one semester. In terms of teacher age, I know that our 8 full-time teachers are just young, about 30-40 years old, part-time teachers do not know, the age should not be very old. In terms of education, the university now requires a master's degree or above, and gradually requires the teacher must be a doctor. There is certainly no academic requirement for off-campus tutors. In terms of professional title, I am a lecturer myself, and I am working hard to evaluate an associate professor. Other full-time teachers are also lecturers, there are many part-time associate professors, and very few professors, there are no professors among full-time teachers.

When it comes to optimizing the teaching staff, my suggestion is to encourage full-time teachers to improve their education and professional level; second, to introduce one or two academic leaders to lead us to conduct scientific research and produce results.

Question 2: When it comes to the professional quality of teachers, our professional teachers are basically graduated from business majors, and have relatively solid theoretical knowledge and accomplishment of innovation and entrepreneurship. However, many part-time teachers are engineering graduates, or other non-business majors, who have not fully learned the entrepreneurship theory, and their theoretical foundation is relatively weak. In practice, because most of the teachers are basically trained, basically have no experience to the enterprise. As far

as I know, out of our eight professional teachers, only one teacher has been in the enterprise for two years, while the other teachers have either not been in the enterprise or for a short time of no more than three months. Therefore, there is no problem in this course in class, but if we really want to ask some enterprises how to solve the actual problems, we can not answer or can only answer according to the description in the book. In class, we will now use the case method, scenario setting and so on to innovate teaching, but these scenarios and cases are basically second-hand cases described in the textbook, with no first-hand cases. So the details are incomplete.

With regard to the suggestions of improving teachers' professional quality, I think the first is to improve the professional knowledge and level of part-time teachers, and take certain examinations; the second is to strengthen university-enterprise cooperation, so that we teachers have more opportunities to go deep into the enterprise and understand the actual operation and operation of the enterprise, so that we can have a target in class.

Question 3: In terms of teacher management and evaluation, our full-time teachers belong to the Entrepreneurship College, and the university is responsible for the daily management and evaluation. Part-time teachers belong to their respective secondary colleges, which are responsible for their year-end evaluation. Off-campus tutors do not have specific evaluation, and only have a cooperative relationship with the university. Students go to their enterprises to learn about business management during internships. The evaluation of teachers, the unified standard of the whole university is adopted. Only if our teachers lead the students to participate in the innovation and entrepreneurship competition, there will be certain rewards, but it is very difficult to obtain the ranking in the national competition.

When it comes to the suggestions of teacher management and evaluation, I think we should establish an evaluation system that focuses on practical teaching ability, pays attention to teachers' innovation and breakthrough, and takes into account the assessment of scientific research level. In terms of professional title evaluation and employment, teachers of innovation and entrepreneurship education should not pay too much attention to the number of papers as teachers of other

disciplines. Instead, they should focus on practical teaching achievements, personal innovation and entrepreneurial achievements, and taking students to participate in the competition, and give consideration to the scientific research achievements. Promote the close combination of teachers' personal career development with innovation and entrepreneurship education, and enhance the enthusiasm of teachers to participate in entrepreneurship.

Question 4: In terms of teacher training, we have teacher training every year, but the personal feeling is that the form is greater than the substance. These training either focus on the current political training, or focus on the general theoretical knowledge, to our classroom practical significance, not too much targeted. The training of part-time teachers is even less rare. Basically, they have a pre-job training before class, and then occasionally participate in some general training with us, which has no effect at all.

For teacher training, my suggestion is that the training should be targeted, understand the real needs of our teachers in innovation and entrepreneurship education, formulate corresponding training plans, invite experts in this field to give lectures, and invite some business people to tell us about the actual operation of enterprises.

Question 5: In terms of the support mechanism of innovation and entrepreneurship education, I feel that it has been greatly improved compared with the past. At present, the government and universities attach great importance to innovation and entrepreneurship education, and the government has made great efforts in policy guidance and the establishment of competitions. However, because innovation and entrepreneurship education is included in the assessment of colleges and universities, the universities also attach great importance to the establishment of a special college and the university leaders are personally responsible, the scale has expanded a lot and made a lot of achievements. Enterprises also began to actively contact with us to strengthen the cooperation with us.

As for the suggestions, I think more incentive policies should be introduced to protect the rights and interests of innovation and entrepreneurship education teachers, increase their enthusiasm, and devote themselves to teaching.

Interviewee 2

Question 1: As I am a part-time teacher, I don't know much about the composition of teachers in innovation and entrepreneurship education. Mainly full-time teachers and part-time teachers, the number of full-time teachers should not be much. As part-time teachers, the university of Entrepreneurship was recruiting teachers in the whole university. I was interested in this aspect, so I applied. They thought I was a doctor, and then I became a part-time innovation and entrepreneurship education teacher with two classes a week, and the teaching task was not heavy.

For advice, because I don't know much about the overall situation, I can't talk too much. I'll just talk about what I know. I think we should set up a teacher access system. Most universities now require a teacher to be a doctor, so this is the first requirement. I know that some part-time teachers are counselors, who all have a master's degree and do student management work. Strictly speaking, they are not qualified to engage in teaching work. If they can all come to the class, it can only mean that the course is not strict, the level is not high.

Question 2: The overall professional quality of the teachers in universities should be uneven. For example, AS I study business administration, I have a relatively comprehensive grasp of innovation and entrepreneurship theories. But I know that many part-time teachers are non-business majors, and their professional level is certainly not high. I come to class just to mix classes and cannot teach students anything. And we generally lack practical experience. Most teachers have no been to business. For example, during my doctoral study, in order to do a project, I have no in-depth understanding of the enterprise. After all, many things should be kept confidential. Without practical experience, then teaching or guiding students to start a business is certainly not perfect.

In terms of suggestions, I think one is to introduce the teacher access system as I said, to screen out those teachers who are not qualified and introduce more professional teachers; the other is to build an industry-university-research platform to let teachers have more opportunities to go deep into and understand enterprises, so as to better guide students.

Question 3: The management of innovation and entrepreneurship education teachers in our university adopts multi-head management. Because full-time teachers and part-time teachers respectively belong to different secondary colleges. For example, I belong to business university, I just have to class on time and submit my grades at the end of the semester. Since my performance appraisal is in my business university, I certainly pay more attention to the tasks and requirements of my own college. I just need to complete the innovation and entrepreneurship course, and I will not spend too much time to study.

I think they should be assessed in multiple projects and in multiple aspects, so as to be objective, just and fair. Secondly, in the assessment, the quantity and quality are the same, not only the teaching performance as the guide, nor only the number of scientific research papers, but the teaching performance and innovation and entrepreneurship results should be included in the assessment and evaluation indicators, and the teaching and scientific research requirements for innovation and entrepreneurship mentors should be appropriately relaxed. In this way, teachers can not only be encouraged to participate in innovation and entrepreneurship education, but also respect the work of innovation and entrepreneurship mentors. Third, considering the periodicity of innovation and entrepreneurship education, the evaluation period of innovation and entrepreneurship mentors can be extended, and the employment period can be strengthened or the assessment method of result management can be adopted to carry out the evaluation. Fourth, enhance teachers' sense of responsibility and formulate an elimination mechanism.

Question 4: In terms of teacher training, I think the university is far from enough. For example, for part-time teachers, there is no mandatory pre-job training, but individuals should apply for training according to their personal wishes. According to my understanding, this training is also a mere formality, telling some basic teaching norms, which has no substantial help to us. There is not much promotion or special training. Generally, the Ministry of Education has a training plan and gives several places to our university, and then the university will give priority to full-time teachers in the university. If there are extra places, it will be allocated to part-time teachers. There are few training organized in the university, mainly some well-known alumni

entrepreneurs or experts coming to give lectures and ask us to audit to increase our popularity. These lectures did not help us very much.

I think colleges and universities according to the present situation of innovation entrepreneurship education teachers and future development needs, phased, hierarchical, multi-channel, comprehensive construction training system of teachers, such as teacher orientation, basic training, ability promotion training, backbone training, etc., through online, sending exchange, credentials the exercise through various channels, many way actively encourage teachers to participate in talent training.

Question 5: In terms of support mechanism, in order to solve the employment problem of college students, the state has attached great importance to innovation and entrepreneurship education in recent years. It has introduced a lot of encouraging policies and led the holding of many innovation and entrepreneurship competitions, creating a good atmosphere for innovation and entrepreneurship for the whole people. Colleges and universities also attach great importance to establishing entrepreneurship colleges and innovation and entrepreneurship guidance teams, organizing students to participate in competitions, and rewarding the students and instructors who have won the rankings. However, due to various reasons, the deep-seated problems have not been solved, such as the continuous incentive mechanism for teachers has not been established.

In terms of suggestions, I think the government's special policies and supporting measures are an important support for the construction of entrepreneurial teachers. The government can give more preferential policies to entrepreneurial teachers, build a policy and regulatory framework for the construction of teaching staff, and increase special support. The government can first determine the identity of entrepreneurship teachers from the legal level, To improve the social status and salary and treatment of entrepreneurial teachers; Then give more financial support to the development of entrepreneurial teachers, National projects and programs to increase entrepreneurship education, Provide an authoritative platform for domestic teachers to exchange and grow, Should also expand the coverage of backbone training opportunities for entrepreneurship teachers, We will introduce more

accreditation, training or examinations for national entrepreneurship teachers; last, The government should call on and drive all social stakeholders to assume their social responsibilities, In addition, preferential policies such as tax reduction and exemption, preferential development policies and image publicity have been formulated to encourage enterprises, entrepreneurship foundations and other social institutions to participate in the construction of entrepreneurship teachers. In order to ensure that the special policies for the construction of entrepreneurial teachers can be implemented, the government needs to strengthen a series of supporting measures. For example, corresponding policies and regulations, special departments of entrepreneurship education, the distribution of rights and responsibilities of entrepreneurship education, relevant system construction of teacher development, and the formulation of specific incentive measures and preferential policies for enterprises that support entrepreneurship education.

Interviewee 3

Question 1: We have 7 full-time teachers. In order to ensure the normal development of entrepreneurship education, the university has established a stable "entrepreneurship mentor database". Through the combination of in-university training and external introduction, we will cultivate and organize innovation and entrepreneurship teachers. The number of "innovation and entrepreneurship mentor database" should not be less than 100 per year, the number of after-university mentors should not be less than 60% of the total, and the teacher-student ratio should be controlled at about 1:20. For freshmen, entrepreneurship teachers are mainly selected from the university, and they are required to have at least entrepreneurship teacher qualification certificate or college teacher qualification certificate. For sophomore and junior students, the teachers are mainly composed of mentors and external experts from the enterprises settled in the Pioneer Park. There are a total of 212 entrepreneurial teachers, including 150 after-university teachers, coming from entrepreneurs and professional consulting companies, accounting for 71%. The university encourages entrepreneurial teachers to actively guide students, help students build reasonable entrepreneurial teams, grant personnel engaged in

entrepreneurship teaching more funds and research, and enjoy more rights to use, dispose of and profit from innovative achievements.

In terms of suggestions, I think the first step is to improve the certification system for entrepreneurship teachers. The existing teacher qualification certification has some defects: first, the qualification system for entrepreneurship teachers has not been established; second, the qualification system for entrepreneurship teachers is not specified; third, the qualification system for part-time entrepreneurship teachers; fourth, the qualification setting for entrepreneurship teachers is not perfect. So it needs to be more refined. Secondly, vigorously introduce and cultivate professional teachers. A considerable number of part-time teachers in our university are still administrative staff and counselors, who are obviously not professional. Because they are part-time teachers, they cannot spend too much energy on their own improvement in innovation and entrepreneurship education, so it is necessary to introduce and train more professional teachers.

Question 2: The vast majority of teachers in entrepreneurship education in universities are counselors and administrative personnel, and nearly 50% of entrepreneurship teachers have management and economics backgrounds, while their professional background does not meet the requirements of the construction of entrepreneurship education teachers. In the case of a serious shortage of full-time entrepreneurship teachers, the university has integrated a number of counselors and administrative personnel who are interested in entrepreneurship education, expanded the teaching staff, and ensured that the number of teachers in entrepreneurship education basically meets the basic requirements of teaching. At the same time, the vast majority of teachers after entrepreneurship training, initially have the teaching qualification of entrepreneurship education. However, in fact, only 22% of the teachers really have the experience of entrepreneurship. Entrepreneurial teachers have not personally experienced some problems and challenges in the process of entrepreneurial activities, and have learned some experience from what they have seen and heard. In this sense, the professional level of entrepreneurship education teachers is not very high. There is more room for improvement. Under the condition of limited teaching conditions, entrepreneurial teachers use teaching methods,

discussion method and heuristic as much as possible, pay attention to mobilizing the enthusiasm of students, guide them to open their thinking, and create a harmonious atmosphere of interaction between teachers and students. At the same time, the university requires entrepreneurial teachers to constantly improve their teaching effectiveness. In terms of teaching content, according to the order of entrepreneurial consciousness-entrepreneurial skills-entrepreneurial practice. In terms of teaching methods, "experiential", "open" and "flipped classroom" teaching are actively adopted.

In terms of suggestions, I think that first of all, teachers should take the initiative to enhance their enthusiasm and strengthen their education and teaching ability. Summarize the experience, strengthen the research on entrepreneurship education, actively explore the theoretical and practical problems of entrepreneurship education, participate in the application and subject research of entrepreneurship education projects, and improve their own research ability of entrepreneurship education. Through the existing research results, compare the actual work of entrepreneurship education, find out the gaps and shortcomings, and constantly reflect and improve. Secondly, teachers should strengthen the communication with other entrepreneurial teachers. By sharing entrepreneurial education experience, they can complement each other's strengths and learn from each other's strengths. In addition, teachers should actively strive for entrepreneurial practice opportunities, enrich their entrepreneurial experience and enhance their entrepreneurial level through cooperation projects, taking temporary posts in enterprises and starting their own businesses.

Question 3: university leaders attach great importance to entrepreneurship work, and the "top project" is earnestly implemented. The secretary of the Party Committee and the principal of the university are the leader of the employment leading group, and the secretaries of each branch are the group members, and the graduates are arranged. In 2016, the university of Entrepreneurship was established, which is fully responsible for the teaching, practical training and competition of innovation and entrepreneurship education. The university of Entrepreneurship focuses on innovation in the system and mechanism, and implements the management mode of "council + council". The "council" is composed of competent

government departments, industry associations, well-known enterprises and universities, and is the decision-making level of the university of Entrepreneurship. Under the "Council", there is a "council" to operate and manage the specific affairs of the university of Entrepreneurship. The chairman of the first council is the deputy secretary of the Party Leadership Group and deputy director of the Municipal Education Bureau, and 11 representatives of the government, industry, enterprises and universities, including the deputy director of the Municipal Employment Bureau, the deputy secretary of the Communist Youth League and the secretary general of the Municipal Tourism Association, serve as the vice chairman. In terms of teacher management, in view of the particularity of teachers in innovation and entrepreneurship education, they are still managed separately, that is, full-time teachers are managed by the Entrepreneurship College, and the teaching arrangement of part-time teachers is proposed by the Entrepreneurship university, and arranged with the secondary colleges and the teachers themselves. In performance appraisal, the full-time teachers are responsible for the university of Entrepreneurship, and the part-time teachers are responsible for the secondary college.

In terms of suggestions, I think we should strengthen performance appraisal and strengthen incentives and constraints. First, based on the actual situation of entrepreneurial teachers, formulate scientific assessment indicators and reward and punishment system, and introduce clear implementation rules. Second, the university can organize the teaching supervision departments, teaching management departments and departments to conduct a comprehensive evaluation of the professional ethics, teaching attitude and teaching methods of entrepreneurship education teachers through various ways, such as in-class lectures, students, peers and self-evaluation. At the same time, the evaluation results will be timely feedback to the teachers, and the "entrepreneurial teacher database" will be established to provide the actual basis for the renewal or dismissal. Third, link the evaluation results with rewards and punishments, and implement the salary distribution mechanism of "excellent labor and excellent salary".

Question 4: At present, the training of entrepreneurship teachers in the university is not on the right track and lacks standardization. Only a few teachers can go out to attend formal national training, while the rest are in-university training. On-university training is more formal. there is no opportunity to go to enterprise to practice, and the enthusiasm of teachers is not high. According to statistics, the average teacher participates in the training for about 1-2 times in a year, and the training level basically stays in the university-based training. The training mode is relatively fixed, and it is not regular and normal, so it is difficult to stimulate the enthusiasm of the trained teachers.

In terms of suggestions, I think colleges and universities should allocate a certain amount of funds for the training of innovation and entrepreneurship education teachers every year, so as to ensure that every teacher has the opportunity to get training and opportunities to improve their level. In addition, the training content should be more targeted, more practical. Consider using alumni resources to invite well-known alumni entrepreneurs to give lectures in the university. We should also supervise the training effect, and urge teachers to earnestly grasp the training opportunities and improve their own level.

Question 5: In terms of the guarantee mechanism, the government has given us great support. Some departments in the city participate in the management of the Entrepreneurship College, and allocate funds to ensure the development of innovation and entrepreneurship education. In addition, it also guides enterprises to cooperate with us to build a platform for industry, education and research. In terms of teacher guarantee, in terms of salary performance and professional title evaluation, because there are many departments involved, we do not have too many preferential policies for innovation and entrepreneurship education teachers. But incentives are being developed to encourage them to start teaching.

In terms of suggestions, I think first of all, we should strive for more policy and financial support from countries, provinces and cities. It is best to set up separate special funds for the construction of entrepreneurship education teachers. Part of the funds shall be separately listed in the government financial budget for the training and training of entrepreneurial teachers. The training funds are used for the

construction of entrepreneurship management, entrepreneurship science and other disciplines and majors. Secondly, our colleges and universities should actively make use of national policies, fully tap the social capital that can be relied on and expanded, and serve the construction of entrepreneurial teachers. Colleges and universities should seek the support of industrial enterprises, and jointly build a team of entrepreneurial teachers.

Interviewee 4

Question 1: The composition of innovation and entrepreneurship education teachers in our university is as follows: first, there are 6 full-time teachers belonging to the university of Innovation and Entrepreneurship; the second is part-time teachers belonging to other secondary colleges, which are more than 200; third, there are more than 200 business mentors, about 100. Education is basically a master's degree or above. Undergraduate course should have basically, the possibility individual older teacher or undergraduate degree. Now the requirement of education is getting higher and higher, even if the master comes in, he will try to read a PhD, so that the future development. On the professional title, the lecturers are in the majority, about half, and there are also many associate professors and professors, but less, there are about 10 professors. There are also some teaching assistants, mainly as counselors who work as part-time teachers. I feel that the number of teachers should be able to meet the requirements of university innovation and entrepreneurship education teaching and training.

In terms of suggestions, I think we can introduce 1 or 2 academic leaders of innovation and entrepreneurship, so as to build a more professional team and lead us to conduct scientific research together and achieve better results. In addition, the number of off-campus tutors can be appropriately increased, especially the university resources should be used to hire some entrepreneurs, venture capitalists, technical experts and government personnel with both practical management, entrepreneurial experience and certain theoretical literacy to give students better guidance.

Question 2: In terms of professional quality, I think our full-time teachers are competent. We have no problems in either theoretical knowledge or teaching ability. The only weakness may be that we have no experience in an enterprise and are not very clear about the actual operation of the enterprise. But this content can be found out to students from hired off-campus tutors. The words of the part-time teachers should be uneven. Those who have been engaged in teaching for more than 7 years and who have systematically learned innovation and entrepreneurship should also be competent, but for some administrators and counselors, they will be reluctant. Their non-business professional background and the lack of time and energy of these two shortcomings restrict their professional quality.

In terms of suggestions, I think the first thing is to strictly standardize the access mechanism and establish the certification standards for entrepreneurship education. For the appointment of teachers to have educational background and professional requirements, not everyone can serve as innovation and entrepreneurship education teachers. Secondly, teachers themselves should strengthen learning, innovate teaching methods, and actively communicate and share teaching experience with other teachers.

Question 3: In terms of management and evaluation, in principle, it is managed and evaluation by the Entrepreneurship College. However, for part-time teachers, the university of Entrepreneurship can only evaluate this course. If they find incompetent, they will no longer appoint the teacher to this course, which will have no impact on the overall performance of the teacher. In the selection and employment of part-time teachers, the form of voluntary application, and then reviewed by the Entrepreneurship College, and finally decide whether to hire. Generally to apply, our college will hire, no special requirements and restrictions. So more counselors and administrators come to be part-time teachers.

In terms of suggestions, I think we should strengthen the supervision and management of teachers, and strictly standardize the teaching discipline and routine. In addition, when assessing the workload of entrepreneurial teachers, it cannot be assessed according to the traditional evaluation indicators. The weight of theoretical research should be appropriately reduced, and the work of guiding students'

entrepreneurial practice and participating in enterprise practice should be converted into teaching workload according to a certain proportion. It is also necessary to establish a perfect reward and punishment mechanism, reward teachers with outstanding teaching, and eliminate and exit mechanism for teachers with poor teaching.

Question 4: In terms of teacher training, the main reason is that the university has this kind of online network education training for teachers, and it also regularly organizes teachers to participate in the training of some provincial entrepreneurship mentors or some training of some entrepreneurship competitions organized by some companies. At present, it is mainly in-university training. The university will invite some experts to tell us some knowledge about entrepreneurship, but I think this content is still a little empty, lack of specific practical guidance, not grounded enough, and the harvest is not very big.

Suggestions are best to have the kind of training to the enterprise, can let us contact something new, not just some books.

Question 5: In terms of support mechanism, the overall atmosphere of innovation and entrepreneurship in the university is good. A lot of money has been spent on the construction of hardware facilities, and considerable achievements have been made. For example, the training base and business incubation park have been established. Most of the incentives for innovation and entrepreneurship education are mainly based on improving material treatment and lack of spiritual incentives. Although material incentive is important, the marginal benefit of money is diminishing, and the effect of simply improving material award on improving enthusiasm is very limited. Moreover, there is no obvious preferential policy for the professional title promotion that teachers are concerned about.

In terms of suggestions, I think that on the basis of improving the hardware facilities, we should increase the investment in the soft environment. For example, a special fund will be set up for teacher training and competition awards, some honorary awards will be added, and the achievements of innovation and entrepreneurship education will be included in the secondary professional title evaluation.

Interviewee 5

Question 1: After more than 10 years of construction, our university has established a team of innovation and entrepreneurship education teachers with orderly staff, high education teachers and high professional titles as the main body and high teaching level. Currently, there are 9 full-time teachers, 138 part-time teachers and 85 after-university tutors. Among them, all the teachers have master's degree or above, nearly 40% have doctor's degree, and nearly 70% are associate senior or above. The existing teachers can fully meet our requirements. The improvement of the teaching staff also promotes the vigorous development of innovation and entrepreneurship education, with remarkable results. Our university's college students' science and innovation competition ranks the top 100 in China and the third in the province. The quantity and quality of entrepreneurial bases and mass maker Spaces are among the best in the province.

In terms of suggestions, I think we can further improve the degree of innovation and entrepreneurship education teachers and increase the proportion of doctors. In addition, the academic background of teachers should be enriched, so that more teachers from different academic backgrounds can join the teaching staff of innovation and entrepreneurship education. More importantly, we should introduce academic leaders, set up teams, strive for more national projects or lead students to achieve excellent results in national competitions.

Question 2: Our teachers because of highly educated more, in the scientific research ability and led to guide students participate is stronger, in classroom teaching, most can use case method, situational method, project teaching method and other advanced teaching ideas and mode, but there are also a small number of teachers because is part-time, time and energy is limited, not enough attention to teaching. Innovation and entrepreneurship education is a comprehensive and practical emerging discipline. Most of the teachers enter universities after graduation. They do not have much experience in entrepreneurship practice and are relatively weak. We are also carrying out university-enterprise cooperation with many enterprises in the city to build a platform for industry, university and research, to make up this short board for teachers.

In terms of suggestions, I think that first of all, when making semester teaching plans, the university of Entrepreneurship should take into account the characteristics of college students and the requirements of the syllabus, formulate clear teaching objectives and teaching plans, carry out regular teaching inspection and supervision, and standardize the teaching of teachers. Secondly, we should encourage and support teachers to lead teams to participate in innovation and entrepreneurship competitions, communicate more than other universities, understand the latest trends and trends, and promote the improvement of teaching level. In addition, universities should guide teachers into the enterprises, make relevant plans, regularly arrange teachers into the enterprises, and cooperate closely with the enterprises for common development.

Question 3: In terms of management evaluation, the university has set up a leading group for innovation and entrepreneurship education with the principal as the group leader and the university leader in charge as the deputy group leader. It has independently set up an Innovation and Entrepreneurship College to coordinate the entrepreneurship and entrepreneurship education work of entrepreneurship teaching and entrepreneurship practice. In the field of teacher management, because there are quite a few part-time teachers, there is the phenomenon of multiple management. The university is also actively exploring how to strengthen the management of part-time teachers. Performance evaluation of teachers is an important means to promote teachers to improve their teaching. But how to evaluate teachers scientifically and fairly is also a difficult point. At present, we adopt the unified evaluation standard of the whole university, and there is no special preferential policy for teachers in innovation and entrepreneurship education. Of course, we also set up separate performance points. If teachers lead the team to win national awards or win national projects, there will be corresponding rewards.

In terms of suggestions, I think colleges and universities should study and formulate entrepreneurial evaluation systems of "diversified evaluation subjects", "systematization of evaluation content" and "rationalization of empowerment evaluation". First of all, establish a set of three-party teaching evaluation and feedback mechanism based on "student evaluation, entrepreneurship education

experts, and entrepreneurship education teachers' mutual evaluation". Secondly, to establish a differentiated assessment and evaluation mechanism. Finally, the evaluation content should reflect the humanization and diversification. Colleges and universities should break with the traditional evaluation direction of data-based and reporting, change the "cold" data reporting, and integrate critical inspection with inclusive observation.

Question 4: Our university attaches great importance to teacher training, and has pre-job training for new teachers. Every year, teachers are also provided with various training programs, such as promotion training, backbone training, special training, etc. We also regularly invite experts to do internal centralized training for teachers, and require teachers to participate in KBY, SYB and other training programs organized by the state. Teachers attend an average of more than 2,3 training sessions each year. Of course, due to the large number of part-time teachers, their training opportunities are relatively few, and most of them participate in the universal training, which is not particularly targeted.

In terms of suggestions, I think the university should build a diversified teacher training platform, with the training content differentiated and more targeted, which the tutors can actually use in teaching, research and entrepreneurial practice. In addition, colleges and universities should train innovation and entrepreneurship mentors, which mainly includes entrepreneurship knowledge, curriculum development and design, entrepreneurship and innovation research, personal ability development, etc., so as to promote the development of teacher system. In addition, colleges and universities should formulate specific training effect evaluation system, track and manage the training of trainees, list the training requirements and assessment standards for innovation and entrepreneurship education teachers, so as to achieve clear rewards and punishments, and further improve the effect of talent training.

Question 5: The university attaches great importance to the innovation and entrepreneurship education work, and has established an innovation and entrepreneurship education committee, with the principal as the director and the university leader in charge as the deputy director, to lead the innovation and

entrepreneurship education work of the whole university. The university of Innovation and Entrepreneurship has been established, taking the lead and responsible for the innovation and entrepreneurship related work of the university. There are 5 full-time staff for innovation and entrepreneurship education, 207 m^2 of office space, and 7734 m^2 of special space for education work of Innovation and Entrepreneurship College. The government has also vigorously supported the development of innovation and entrepreneurship education by issuing policy documents, allocating special funds, and matchmaking for university-enterprise cooperation. More and more enterprises are cooperating with the university, and the cooperation between the two sides is developing in depth, and more and more achievements have been transformed. In order to promote the development of innovation and entrepreneurship education, the university has also formulated and implemented some incentive measures to support and encourage teachers to devote themselves to the teaching and scientific research of innovation and entrepreneurship.

In terms of suggestions, I think first, we should give full play to the role of existing policies. On the one hand, we should encourage entrepreneurial teachers to strengthen theoretical research and participate in entrepreneurial practice in enterprises. On the other hand, we should actively introduce successful entrepreneurs, entrepreneurs and entrepreneurial experts from the society as part-time entrepreneurship teachers, so as to ensure the combination of full-time and part-time construction of entrepreneurship education teachers and a reasonable structure. Secondly, the government should further delegate power and give universities due autonomy. The independent running of colleges and universities will vigorously promote the development of the training of entrepreneurial teachers and greatly improve the construction level of entrepreneurial teachers. Finally, colleges and universities should integrate the campus resources, attract social forces to participate, and form a joint force in the construction of entrepreneurial teachers.

Interviewee 6

Question 1: I am a teacher in the university of Engineering, majoring in mechanical manufacturing. I came to be a part-time teacher in the university of Innovation and Entrepreneurship because we usually deal with enterprises in engineering. The part-time job of innovation and entrepreneurship education is just a bridge that can seamlessly connect teaching and practical training, so I applied for this teaching position. Many teachers in our university of engineering have taken part-time classes in the university of Entrepreneurship, basically for this reason. I don't know much about other part-time teachers. I think they will choose part-time jobs only because they are beneficial to their own development. When applying, the university of Entrepreneurship has no special requirements for academic qualifications and professional titles, so it is relatively easy.

In terms of suggestions, because I mainly focus on technology and professional things itself, I don't pay much attention to other things, so I can't say too much advice. I just think that the scale of selecting teachers should be more strict. The recruited teachers should at least have the professional background related to innovation and entrepreneurship education, rather than solving the problem of insufficient workload for some teachers. For example, I feel that some ideological and political professional counselors or administrators should not be recruited too much.

Question 2: Our part-time engineering teachers have no problems in terms of professional technology, and no problem with professional guidance for students, but they do not have much experience in the operation and management of enterprises, so we will not provide students with guidance in this aspect. In terms of teaching, we generally focus on the explanation and practical application of professional knowledge, and we talk relatively little about the operation of the company. After all, there are specialized skills, and we are really not good at this field. I think the full-time teachers or business background teachers will be more detailed, which is just complementary to us.

I think because innovation entrepreneurship education course has comprehensive and practical characteristics, can consider to improve teaching methods, not a teacher is responsible for all aspects of the course, but curriculum modularity, theory part of teaching to a teacher, practice part to another teacher, entry to another teacher, this can play each teacher expertise, more conducive to talent training.

Question 3: In terms of teacher selection, our university is relatively relaxed. As long as the university teachers or teaching staff declare, they will generally be employed as part-time teachers. This freedom has both advantages and disadvantages. The advantage is that they can recruit teachers from different disciplines and professional backgrounds. When they need professional knowledge of a certain subject, they can quickly find relevant teachers and provide professional knowledge and guidance. The disadvantage is that the professional ability and teaching level are uneven. Some part-time teachers are not correct in teaching attitude, and their time and energy investment can not meet the requirements. In terms of teacher evaluation, we are assessed in accordance with the unified assessment method formulated by the university. If you take the students to win the competition, there are additional rewards, but this is more difficult.

In terms of suggestions, I think the assessment should not be simple and uniform, only one scale, but should adopt classified evaluation to be combined with hierarchical evaluation. Teacher evaluation standards and workload calculation are different for different positions. For these teachers, special allowances should be set up to improve their enthusiasm.

Question 4: In terms of teacher training, the university will also organize us to participate in some relevant training every year, and will also invite some experts to give lectures. However, most of these training and lectures are not targeted, just about some common sense things, which does not help us very much. Therefore, after hearing several times, we are often willing to participate in the event. It is better to spend this time on our own research or other things. And these training is basically in the university, outside the university training is basically no. We also want to go out to attend targeted training, but we have rarely done so. I think it should cost more of

this outside training, so this opportunity is mainly given to full-time teachers, and we are not part-time teachers.

In terms of suggestions, I think universities should strive for more funds for teacher training and provide part-time teachers with opportunities to go out to study and communicate. If not due to the lack of funds, we should also provide a national training and exchange platform, so that we can learn what we want to learn, and it will be more convenient to understand the latest developments in the industry.

Question 5: The overall atmosphere of innovation and entrepreneurship education is still good. The state, local governments and universities all pay more attention to it. Every year, they will organize various competitions, and there will be rewards for winning the ranking. The government has also actively connected universities and enterprises to build a platform for industry, education and research, and the willingness to cooperate between universities and enterprises has increased a lot than before. We have also made some achievements to help the development of enterprises, and our own students and teachers have benefited a lot from it. However, I feel that these supporting policies and financial expenditures are mainly used for the improvement of hardware and students' rewards, which is still obviously insufficient for the construction of the teaching staff. For example, the incentive of teachers is far from enough, and teachers need more help and support from universities in terms of professional title evaluation and personal development.

In terms of suggestions, I think on the one hand, the university should provide more funding to teachers in scientific research and practical training, so that teachers can concentrate on scientific research; on the other hand, it should give more support to some teachers to start their own businesses, and their management and assessment should be more flexible, and their development should not be limited due to the workload requirements of the university. In addition, we can also provide them with some policy and financial support, and when they succeed in the business, they will also feed back the university.

Interviewee 7

Question 1: As a teacher in the university of Ecology, I am a part-time teacher of innovation and entrepreneurship education mainly because I have scientific research projects and need to often go to enterprises, and often take students to practice and participate in innovation and entrepreneurship competitions. It is more convenient to serve as a teacher of innovation and entrepreneurship education. I am not very clear about the composition of the whole innovation and entrepreneurship education faculty, but I just know that the university of Entrepreneurship has full-time teachers, which are not many, and then part-time teachers and off-campus entrepreneur mentors, with a large number of 2,300. Part-time teachers are mainly teachers from business universities, universities of Engineering and our university of Ecology, and some counselors and administrators will also serve as part-time teachers. Generally are highly educated, after all, the university has higher and higher requirements for teachers, master's degree can only serve as a counselor, can not become a teacher. The original teachers' universities also required them to upgrade their education and study for a doctorate. I feel that there is no problem for the number of teachers to meet the needs of teaching and practical training.

In terms of suggestions, I believe that on the basis of maintaining the size of the existing teaching staff, the education of teachers should be improved, the number and proportion of counselors and administrative staff should be appropriately reduced, and several academic leaders should be introduced to lead teachers to build academic teams and win national projects and awards.

Question 2: In terms of professional quality, we should see from which Angle. If we want me to lead the team for practical training or cooperate with enterprises to carry out ecological and environmental protection projects, there is no problem. But if I had to teach students entrepreneurship theory or business operation, then I can only copy the book knowledge. After all, a lot of times, our professional background limits our knowledge. Other part-time non-business teachers are basically the same. It is certainly ok to work in his own major, but it is not realistic

to make others proficient in all aspects. Of course, we should still understand and master some basic entrepreneurial theory knowledge.

In terms of suggestions, I think teachers should first correct their attitude and actively learn entrepreneurial knowledge and skills through various ways and ways. Innovation and entrepreneurship education teachers are relatively young, especially those counselors, if they are likely to become experts in this field. In addition, it is to change the traditional "indoctrination" teaching mode, and gradually adopt the "guidance" and "heuristic" teaching form, so that students can start their own businesses. While teaching entrepreneurship courses, it is best to learn with the real case experience around them.

Question 3: The university has a relatively loose management and evaluation of our part-time teachers. As long as we complete the teaching plan arranged at the beginning of the semester, we can get the corresponding workload. However, this may also have some disadvantages, such as part-time teachers will focus their energy and time on their main business, while paying less attention to innovation and entrepreneurship courses and dealing with it. As far as I know, there are still many such teachers. This can not be entirely attributed to the teachers, because our part-time teachers are not evaluated in the entrepreneurship college, but in our own secondary college, which must first ensure the workload required by our college, and then the workload of part-time work.

In terms of suggestions, I think the evaluation results will be linked to rewards and punishments, and the salary distribution mechanism of "excellent labor and excellent pay" will be implemented. In order to use the teaching funds reasonably, the remuneration of entrepreneurial teachers can be divided into two parts. One part is the class hour fee paid according to the title of teachers and the other part is the performance reward to reward the entrepreneurial teachers with high professional level, strong teaching ability and deeply liked by students. Part-time teachers with outstanding contributions and excellent professional ability may be allowed to participate in the annual evaluation and assessment, and shall be given the right to compete fairly with full-time teachers.

Question 4: Every year, we will participate in the innovation and entrepreneurship education related training organized by the university. In addition, the university will also invite some experts to the university to give lectures. However, in my opinion, most of these training and lectures are some regular, universal things, not strong targeted, or not systematic enough. Just 1,2 hours of training, in fact, there is not too much content, can not learn too much things. So we're not really willing to participate. And we want to participate in the systematic training, because to stay in the field for a week or even more than a month, it is basically unlikely to participate. It is funds do not give reimbursement, it is difficult to leave for two. So it is mainly the in-university training.

In terms of suggestions, I want the university to set up special training funds, so that teachers can have the opportunity to go out to study at least once a year and spend a week or longer.

Question 5: In terms of the guarantee mechanism, I think what the university does is far from enough. For example, this working environment is not good. The university has a university of entrepreneurship, with a fixed office and teaching and training venues, but this office is limited to full-time teachers, part-time teachers only have a large classroom, there are 40,50 desks and chairs, used for teaching plans, students' homework and examination papers, it is too shabby. We don't usually go there. If you want to rest during the break, there is no place to rest, only to find a chair on the podium. So I generally do not go to the entrepreneurship university, in addition to pay the results or take the textbook need to go to once, other time basically do not go. The incentive policy for teachers is also not effective. This is mainly that the set conditions are difficult to achieve, so they lose their meaning.

In terms of suggestions, I think the university or the entrepreneurship university should provide a good office space for the part-time teachers, such as an office for 5 or 6 people, so that we can also have a sense of belonging. In addition, the incentive policies should be more flexible and operational.

Interviewee 8

Question 1: As a part-time teacher from business university, I don't know much about the overall situation of innovation and entrepreneurship education in our university, so I can only talk about what I know. Teachers are mainly full-time teachers, part-time teachers and off-university tutors. The part-time teachers are mainly teachers from business universities, engineering colleges and universities of Ecology, as well as teachers and counselors from other colleges. In terms of education, I think it should be a master's degree or above, which is also the requirement of the university. In terms of age, I think the counselors may be relatively young, basically less than 30 years old. Other teachers should be between 30 and 50 years old, and those who are too old should not be part-time teachers. The professional title should be mainly lecturers and associate professors, professors are generally very busy, and do not come back to do part-time teachers. Overall, the teaching staff should be pretty good.

In terms of suggestions, I think if we want to improve the level of teachers, we should reduce the recruitment of counselors and administrators. Many of them are neither professional, nor do they have much time for teaching and research. In addition, to find ways to let the teachers with a master's degree to read a doctor, to improve their education.

Question 2: I have been teaching books for more than 20 years, and I certainly have no problem in teaching and professional quality. However, as far as I know, some doctors may have the problem of high vision, that is, they have received strict training in scientific research and academic aspects and are relatively strong, but they may not be very good at teaching, leading team practice and organizing students to participate in competitions. On the one hand, they do not have much experience, on the other hand, they may not be able to do it. In this way, the teaching effect, competition results and other aspects may not be ideal. Some counselors are too young, and graduated from non-normal majors, and have no teaching experience at all, and the teaching effect may not be very good.

In terms of suggestions, I think adding teaching method training, collective lesson preparation, unified teaching plan, mutual observation and learning, which can quickly improve the teaching ability and level of young teachers.

Question 3: The university does not have special management for our part-time teachers. Like other teachers, the whole university will uniformly check the teaching standards, and the university of Entrepreneurship will not come to the class or check, as long as we submit the student performance book at the end of the semester according to the requirements. As for teacher evaluation, the year-end performance evaluation of our part-time teachers is in the secondary college, rather than in the university of Entrepreneurship. Therefore, the relationship between entrepreneurship College and our part-time teachers is relatively loose, which is also the reason why many teachers are willing to work part-time jobs.

In terms of suggestions, I think we should implement classified flexible management, that is, the teachers of theory course teaching, practice teachers and teachers who lead the team to participate in the competition should be classified assessment, not using the same standard. In addition, if some teachers want to start a business or develop new product development with enterprises, they should implement flexible management, and do not make too many requirements for their assessment, but stop issuing performance bonuses.

Question 4: In terms of teacher training, there are also many training programs, such as pre-job training, professional training and teaching training, and experts come to give lectures to us here. However, I feel that these training is not targeted enough, and its practicality is not very strong. For example, I have attended three training sessions, one focusing on national policies, one about teaching norms, and one on matters needing attention in innovation and entrepreneurship competitions. But I feel that this is not systematic enough, not deep enough. In addition, there are too few training opportunities out, basically not our part-time teachers.

In terms of suggestions, I think we should understand the needs of teachers and conduct targeted training. In addition, we paid to help us open an account on the national training platform, so that we can learn independently on the platform.

If it is possible to increase the training funds, please give us the opportunity to go out to study and communicate.

Question 5: In terms of supporting the mechanism, first of all, the working environment is not very friendly to our part-time teachers. There was no independent office for us, no teacher lounge, and we had to solve a lot of things by ourselves. In terms of salary and promotion, there is no special policy, which to the unified standard of the whole university. Unless the teachers lead the team to win the national competition, there will be material rewards and bonus points. But it's too hard to get this one.

In terms of suggestions, I think first of all, we can improve the working environment, provide teachers with independent offices, and provide more humanized educational affairs, and provide us with more help. In addition, the university should find ways to strive for the national or provincial special support funds for teachers' incentives.

Interviewee 9

Question 1: The teachers of innovation and entrepreneurship education in our university can be roughly divided into four categories: first, general education teachers, who are generally counselors, university youth League committee or employment guidance center teachers, and are mainly responsible for the innovation and entrepreneurship general education courses of the whole university. The second is guidance teachers, usually entrepreneurs or people with rich social experience and entrepreneurial experience. Their main responsibility is to provide guidance to students in the practice process and cultivate their innovative and entrepreneurship ability. Third, professional teachers, generally those who work in the university of economics and management, industry and commerce have professional discipline background, and their research direction is responsible for the teachers of employment and entrepreneurship related projects. They usually serve as teachers of general elective courses and offer courses related to innovation and entrepreneurship education for their students. Fourth, management service teachers, generally by the management service personnel of the entrepreneurship college and

employment guidance center. They provide students with entrepreneurship assistance, such as consulting students on employment and entrepreneurship policies, organizing innovation and entrepreneurship competitions, providing employment and entrepreneurship project management and other related services. In general, the proportion of high degree and professional title is very high, 70% have master's degree or above, 95% have master degree or above, and 68% are associate professor or above. After 10 years of construction, we have established a reasonable structure, excellent quality of the teaching team.

As for suggestions, I think while stabilizing the existing teaching staff, we can make appropriate use of alumni resources to hire some alumni entrepreneurs who love their Alma mater and support the development of the university as innovation and entrepreneurship education mentors of our university, so that they can share their entrepreneurial experience with the younger students.

Question 2: Most of our teachers have high education and high professional titles, so their professional quality is fine. And we conducted the classification of teachers, let them engaged in their good aspects, such as business background of the teacher in theory teaching, engineering teacher engaged in practice guidance, and poor level counselors are engaged in general class teaching, so play their expertise, and avoid their respective short board, can maximize the teaching effect, achieve the teaching purpose. Of course, there will also be some small problems. For example, some part-time teachers may focus on their main business, and there may be some perfunctory teaching and guidance for innovation and entrepreneurship, which can be improved by strengthening teaching management and supervision.

As for the suggestions, I think that on the one hand, teachers should establish the awareness of lifelong learning and active learning, learn more from excellent teachers, and improve their own level by undertaking more scientific research projects. On the other hand, universities can improve the level of teachers through various means, such as strengthening teaching management, providing more opportunities for learning and training, and introducing incentives.

Question 3: We have a standard process for teacher selection. Generally, part-time teachers need to submit applications, introduce their resumes and strengths, which are reviewed by us. After passing, only through pre-job training, can they officially become our part-time teachers or mentors. We also have strict regulations for their teaching and practical training guidance, which they must abide by. For part-time teachers, although their annual assessment is not here with us, we will also have our own assessment methods and conduct internal assessment on them. If they rank at the bottom for two consecutive years, we will no longer hire them as our part-time teachers.

In terms of suggestions, I think because of the wide source of part-time teachers, they challenge our management. Therefore, we should strengthen the daily management and supervision, and establish the corresponding assessment mechanism and reward and punishment mechanism, to achieve the survival of the fittest, to ensure high-level teaching.

Question 4: We have many forms of training, including pre-job training, on-the-job training, professional training, universal training and other forms. We also invite some experts to give lectures to the teachers every year. And we will also organize teachers to participate in national training programs to improve their level. In addition, we are also implementing the practice system of teachers into enterprises, so that teachers have more rich practical experience. But the biggest difficulty we encounter in the training is the problem of funding. Training costs money, especially off-campus training, and it costs more. universities alone can not be guaranteed.

In terms of suggestions, I think the national and local governments should allocate special training funds to universities, so that teachers can have more opportunities to learn and train, and effectively improve their own ability and level. universities should also find ways to get more funds through university-enterprise cooperation for teacher training.

Question 5: We have set up an entrepreneurship college, where teachers have their own offices, practical training venues, and students have practical workshops and activity centers, etc. The working environment is still good. We now implement the unified standard for the whole university, and there is no separate

standard for innovation and entrepreneurship education teachers. After all, the university of Entrepreneurship is also a subsidiary of the university, not an independent entity, and does not have separate personnel and financial autonomy. But in the future, we also want to try to let the entrepreneurship university operate independently, but this is very difficult to achieve.

In terms of suggestions, I think teachers can be encouraged to start their own businesses or strengthen cooperation with enterprises to jointly develop new products and technologies, and improve their salary and position through production. In addition, the university of Entrepreneurship gives full play to its own advantages and participates more in government or enterprise projects, and part of the remuneration can be used to improve the welfare benefits of teachers.

Interviewee 10

Question 1: When it comes to the composition of teachers in innovation and entrepreneurship education, let me talk about myself first. My major used to be ideological and political, but I came to university, engaged in employment education work. Later, the university established the university of Innovation and Entrepreneurship, and I became a full-time teacher. We now have 7 full-time teachers, who are responsible for the teaching of the general education course of the whole university. With two credits, 2 classes a week. None of our full-time teachers specialize in innovation and entrepreneurship education, because this concept was actually put forward in 2014 and began to be promoted in universities in 2015. It has a strong comprehensive and practical, mainly related to entrepreneurship, at present, no university in China has opened this major. Of our seven full-time teachers, three used to be engaged in employment education, and the other four were teachers transferred from the business university. In addition to full-time teachers, there are more than 100 part-time university teachers and about 80 after-university mentors, mainly entrepreneurs or corporate executives. Off-campus tutors do not look at their education, only whether they have the experience and identity of managing the enterprise. Most of them are just names and don't have much practical work. When the students practice the training, ask the students to contact them to provide some

employment or entrepreneurship guidance. Some part-time teachers in the university will also take some theoretical lessons, but they are mainly responsible for taking students to practice, organizing students to participate in innovation and entrepreneurship competitions, and so on. In general, the existing faculty can meet the needs of innovation and entrepreneurship education.

In terms of suggestions, I think we teachers should be encouraged to take a PhD, especially young teachers should go to take a PhD to improve their education. In addition, our own scientific research ability is not very strong, so we need to introduce some academic leaders to lead us to do scientific research and apply for projects.

Question 2: Although I am education professional master, but for many years engaged in employment guidance, for social development needs and how to choose a career and how to employment is more experienced, can provide students with a lot of employment guidance and help, in leading innovation competition also has a lot of experience, so is competent for the job. Several of our professional teachers are very competent in teaching guidance. The teachers from the four business universities are a little stronger in theoretical knowledge and have a good understanding of entrepreneurship and business operations. I am not particularly clear about the part-time teachers, but they have a good professional background and have no problem with professional guidance. Some part-time teachers are relatively poor. But they are young and can learn while teaching, and they have accumulated enough experience to be competent for the job.

In terms of suggestions, I think innovation and entrepreneurship education is mainly to guide students to find jobs. It requires more contact with society and enterprises, rather than just staying in the ivory tower of universities. The best way is to implement the system of teachers into the enterprise, stipulating that both full-time teachers or part-time teachers should stay to the enterprise for a period of time, actually understand the operation of the enterprise, so as to provide better guidance for students.

Question 3: In terms of teacher management, our full-time teachers belong to the university of Innovation and Entrepreneurship, and the university of Innovation and Entrepreneurship is responsible for the daily management and year-end performance assessment. Part-time teachers belong to their respective secondary colleges, which are not assessed by our innovation and Entrepreneurship college. We are only responsible for the assessment of their course. As long as they complete the corresponding workload, there is no teaching accident, generally we do not have other requirements for them. For after-university tutors, there are no requirements.

In terms of suggestions, I think we should establish a fast and effective teaching supervision and feedback mechanism to ensure the quality of teaching. As far as I know, because they are part-time teachers, some part-time teachers have perfunctory behavior, and do not pay attention to teaching or guidance, and do not fulfill their responsibilities. Some teachers go to start a business or jointly develop products with enterprises, which can use a flexible assessment mechanism, but if they are only teaching or leading a team to practice, they should be serious and responsible, and do their best to do a good job.

Question 4: There are many training opportunities we get every year, and there are all kinds of training. I have to attend about 10 training sessions for more than a year, but I am all too busy. But these training is mainly on campus, and not targeted, some are even forced, not only can not learn things, but also a waste of time. Especially some general things, like me, such as an old teacher, there is no need to participate in it.

In terms of suggestions, I think the training should be more practical and targeted, and the trainees should be classified. For example, some training is suitable for young teachers, so just ask them to participate. Some training is suitable for which professional background of teachers, then let that kind of teachers to participate. There is no need for all to participate. This is a waste of time, and it is also ineffective. In addition, it is best to have a systematic training, for an in-depth study of a topic.

Question 5: Working environment, it is better. We have separate offices, and the classrooms are equipped with multimedia and other teaching equipment for our teaching. Pioneer park, science and technology park, student entrepreneurship space

and so on have been established, and there are also about 40 practice bases. The overall atmosphere is good. However, there is no special treatment or special policy in the salary and professional title evaluation that teachers are most concerned about, which is a unified standard for the whole university. The main reason is that the university of Innovation and Entrepreneurship is not an independent entity and cannot operate and manage it independently. This reduces the enthusiasm of teachers to some extent.

In terms of suggestions, I think that on the one hand, the government and universities should increase their support and fully guarantee the funds. On the other hand, we can explore more autonomy for innovation and entrepreneurship colleges, allowing them to generate income and decide the use of income generating funds, so as to fully mobilize the enthusiasm of teachers.

Interviewee 11

Question 1: Our university has been equipped with excellent teachers for innovation and entrepreneurship education. There are 9 full-time teachers, 175 part-time teachers and 102 after-university tutors. The number of teachers is among the best among similar universities in Zhejiang Province. In terms of educational background and professional titles, there are 116 teachers with doctoral degrees and 102 associate professors. We are still improving the education background of teachers and formulating policies to encourage teachers to pursue their PhD. In recent years, we have participated in the innovation and entrepreneurship competition and won many times, including 5 national first prizes, 21 second prizes, and more than 100 provincial awards, which shows that our teaching staff has a high level and excellent professional ability.

In terms of suggestions, I think in addition to continuing to improve teachers' education, professors should also be encouraged to work part-time or lead teams, and make full use of their experience and resources to cultivate excellent talents.

Question 2: Our teachers are good in terms of professional quality. When recruiting teachers of innovation and entrepreneurship education, we give priority to recruiting famous teachers with high education or rich teaching experience. With their

solid professional quality, these teachers can provide students with scientific and accurate guidance. In terms of teaching, full-time teachers will prepare lessons collectively, unify the teaching plans, and achieve good teaching results. At the same time, we have also formulated corresponding measures to encourage teachers to improve their teaching level and professional ability.

In terms of suggestions, I think the improvement of teachers' professional quality depends on themselves on the one hand, and on the environment on the other hand. Therefore, we first try to use the form of collective lesson preparation to gather wisdom; in addition, we need to build an interactive platform for teachers, where teachers can learn and obtain resources, so as to quickly improve their teaching ability.

Question 3: We have strict standards and procedures for the selection and recruitment of part-time teachers and after-university tutors, in order to ensure the quality from the source and promote the healthy development of innovation and entrepreneurship education. We will review and even interview the application teacher, and meet the requirements will become our part-time teacher. On the evaluation of teachers, but also in strict accordance with the evaluation method formulated by the university. The Academic Affairs Office will also send people to attend random lectures and spot checks from time to time to ensure the standard of daily teaching. Of course, innovation and entrepreneurship education has its particularity, which is a difficult problem for how to manage and evaluate part-time teachers. We are also investigating, and strive to formulate special management and evaluation methods, so as to mobilize the enthusiasm of teachers, improve the quality of teaching.

In terms of suggestions, I think measures should be formulated as soon as possible to adopt classified management and classified evaluation system for innovation and entrepreneurship education teachers. Moreover, we should improve the evaluation system for teachers in innovation and entrepreneurship education to comprehensively and dynamically evaluate the achievements of entrepreneurship teachers. We should also enhance teachers' sense of responsibility and formulate the elimination mechanism. Let teachers make clear their responsibility for innovation

and entrepreneurship education, and strictly persuade teachers to resign from those who fail the assessment.

Question 4: In terms of teacher training, we have a variety of training programs, and provide teachers with a full range of training, such as teacher induction training, basic training, ability improvement training, backbone training, etc. We can actively encourage teachers to participate in talent training through online and offline training, overseas exchanges, temporary training and other channels. Of course, we mainly focus on on-campus training. After all, the funds are limited and the number of teachers is large, so it is impossible to provide every teacher with the opportunity to go out for training.

In terms of suggestions, I think although we provided various training programs, some teachers did not study hard and dealt with them. Therefore, it is necessary to strengthen the supervision and inspection of the training effect, so that teachers can take the training seriously, learn from things, and effectively improve their own ability and level.

Question 5: The university provides organizational guarantee, work guarantee and funding guarantee for innovation and entrepreneurship education. In terms of organization, the leading group of innovation and entrepreneurship education, with the principal as the group leader and the deputy group leader, is fully responsible for the major matters of innovation and entrepreneurship education, and the university of Innovation and Entrepreneurship is responsible for the specific affairs. At work, the university of Innovation and Entrepreneurship has a full-time staff responsible for handling daily affairs. In terms of funds, the university will have a special fund allocated to the university of Innovation and Entrepreneurship every year for the development of innovation and entrepreneurship education. In terms of the salary and professional title evaluation that teachers are concerned about, the university has also introduced some relevant incentive measures to encourage teachers to cooperate with enterprises through horizontal topics to increase their income. In terms of professional title, if teachers have outstanding achievements, they will also be included in the bonus points and get the promotion advantage.

In terms of suggestions, I think universities can take more flexible and detailed measures to motivate teachers. In particular, we should make good use of social resources, build a good platform for industry, university and research, and make full use of this platform to create more value.

Interviewee 12

Question 1: As a part-time teacher, I do not particularly understand the overall situation of the innovation and entrepreneurship education. I study mechanical manufacturing, and many teachers in our university of Engineering have part-time jobs in the university of Entrepreneurship, because we deal with enterprises more, and students have to go to enterprises for internship, so it is quite suitable for us to do part-time teachers. We will lead the team to practice, organize students to participate in the innovation and entrepreneurship competition, organize students to start their own business or lead the team to start their own business and so on. I know that several part-time teachers are just like me, with a doctorate degree and an associate professor title. There should not be many full-time teachers in the university, about 6 or 7 people. After all, in my opinion, innovation and entrepreneurship education is not a real subject in a strict sense. It comes from past employment guidance. Many of their full-time teachers are former employment instructors and have no strict requirements for their professional background.

In terms of suggestions, I think the recruitment of teachers should not only depend on academic qualifications, but also look on whether they have rich social experience and experience to enterprises. This course is very practical, simply find some high education or counselor is not good to do this thing.

Question 2: In terms of professional quality, for example, I have a doctoral degree, and I have no problems in professional guidance, team leading and internship, and organizing students to participate. As for the explanation of the theory class, because there is no class, there is no involved. Most of the other part-time teachers should be similar to me. Counselors may be poor, after all, they are young, and many of them are also non-business majors. They are certainly mainly scripted in theory teaching and lack of practical experience.

In terms of suggestions, I believe that innovation and entrepreneurship education teachers should take professional identity as the premise, actively learn entrepreneurial knowledge and skills, and improve their own teaching level. There is also the theory teacher and practice teacher collocation, learn from each other, let the students learn the strengths of each teacher.

Question 3: It was relatively easy for me to hire teachers. After I submitted my application, I quickly agreed. I think the main focus is on my high education and engineering background. The university's management and evaluation of our part-time teachers is also relatively loose, as long as we complete the corresponding workload, and there is no too many requirements for us.

In terms of suggestions, I think the first thing to do should appropriately tighten the recruitment of teachers and standardize the access mechanism. Secondly, it is necessary to improve the evaluation system of innovation and entrepreneurship education teachers, and comprehensively and dynamically evaluate the achievements of entrepreneurship teachers. The existing assessment methods focus too much on short-term results, while innovation and entrepreneurship sometimes produce results in the short term. The period should be extended or moderately relaxed.

Question 4: Every year, the university requires us to participate in some training on innovation and entrepreneurship education, in addition, the university will invite some experts to give lectures. But for me, most of these training and lectures are not targeted or systematic. And the Internet to see some want to participate in the training, the university does not give funds reimbursement, also can not go.

In terms of suggestions, I think one is that the university should set up special training funds, so that teachers can have the opportunity to go out to study at least once a year. Second, open a national online training platform account to provide various training programs required by teachers.

Question 5: In my opinion, the working environment still needs to be improved. The university of Entrepreneurship has a fixed office and training space, but this office is limited to full-time teachers and no part-time teachers. How should we give our part-time teachers with an office, so that we also have a sense of identity

and belonging. In terms of salary and professional title evaluation, I belong to the college of Engineering, and the college of Engineering gives me performance pay and professional title evaluation, which has nothing to do with the university of Entrepreneurship. At most, when evaluating the title, if the leader wins the award, there will be a little bonus.

In terms of suggestions, I think we should first provide the part-time teachers with a good office space, including their own office, and the office should not be too crowded. Secondly, formulate additional incentive measures to improve teachers' enthusiasm.

Assessment Form

Item	Guidelines for improving the teaching staff construction of innovation and entrepreneurship education in application-oriented universities in Zhejiang	Suitability					Feasibility				
		5	4	3	2	1	5	4	3	2	1
	Optimizing composition of the teaching staff										
1	Priority should be given to top-level design to clarify development goals, and formulate an overall plan for the teaching staff construction of innovation and entrepreneurship education										
2	Innovate the mechanism for introducing teachers and broaden the channels for introducing talents										
3	Encourage young teachers to pursue doctoral degrees and cultivate doctoral teachers with solid entrepreneurial theories to reserve high-level, specialized teaching staff										
4	Establish a suitable mix of full-time and part-time teaching staff with a multi-disciplinary background										
	Enhancing professional qualities of the teaching staff										
5	Based on the recognition of their professional identity, teachers should actively learn knowledge of innovation and entrepreneurship education to improve their teaching level										
6	Teachers should innovate the teaching mode and curriculum assessment mode according to the characteristics of innovation and entrepreneurship disciplines, and increase the proportion of practical teaching and practical ability assessment										

Item	Guidelines for improving the teaching staff construction of innovation and entrepreneurship education in application-oriented universities in Zhejiang	Suitability					Feasibility				
		5	4	3	2	1	5	4	3	2	1
7	Fully implement the system of teachers entering enterprises for practice to enhance the practical teaching ability of teachers in innovation and entrepreneurship education										
8	Build an interactive communication platform for teachers of innovation and entrepreneurship education to strengthen knowledge sharing among them										
	Improving management and assessment										
9	Strictly regulate the admission mechanism and establish qualification certification standards for innovation and entrepreneurship education teachers										
10	Adopt a classification management and evaluation system for innovation and entrepreneurship education teachers										
11	Improve the evaluation and assessment system for teachers of innovation and entrepreneurship education to comprehensively and dynamically assess the achievements of them										
12	Establish a fast and effective supervision and feedback mechanism to ensure teaching quality										
	Promoting teacher training										
13	Establish a specialized and normalized mechanism for teacher training, and include teacher training in the scope of evaluation and assessment										
14	Expand the channels and forms of teacher training, and improve the preciseness and effectiveness of training										
15	Create an online training platform and provide teachers										

Item	Guidelines for improving the teaching staff construction of innovation and entrepreneurship education in application-oriented universities in Zhejiang	Suitability					Feasibility				
		5	4	3	2	1	5	4	3	2	1
	with various training programs they need										
16	Establish specific training effectiveness evaluation systems, specify the training requirements and assessment standards， track and manage the training of participants to improve effects of training										
	Boosting supporting mechanism										
17	Provide special funding for the construction and support of innovative and entrepreneurial education teaching staff										
18	Improve the external environment for innovation and entrepreneurship teachers to implement innovation and entrepreneurship education										
19	Develop a comprehensive incentive system for innovation and entrepreneurship education teachers that is in line with the actual situation of their universities										
20	Enhance the cooperation between universities and enterprise to boost the cultivation of innovation and entrepreneurship education teachers										

Reliability Test

Dimension	Cronbach's Alpha coefficient	Number of items
The teaching staff construction of innovation and entrepreneurship education	.906	26

Validity Test

Metric of sufficient KMO sampling		.930
Bartlett sphericity test	Approximate Chi-square	3952.349
	df	325
	Sig.	.000

Appendix D

The Results of the Quality Analysis of Research Instruments

The Results of the Quality Analysis of Research Instruments

	The guidelines for improving the Level of Educational Technology Literacy of Teachers in Universities in Guangxi	IOC	Validlity
	Composition of the teaching staff		
1	The number of innovation and entrepreneurship teachers in the university can meet the needs of innovation and entrepreneurship education	1	valid
2	The university has established a well-structured team of innovation and entrepreneurship education teacher in age	1	valid
3	The number of full-time teachers in innovation and entrepreneurship education at your university is sufficient	-1	invalid
4	The number of innovation and entrepreneurship practice teachers in your university is sufficient	-1	invalid
5	The university has established a well-structured team of innovation and entrepreneurship education teacher in professional title	1	Valid
6	The university has established a well-structured team of innovation and entrepreneurship education teacher in educational background	1	Valid
7	The proportion of full-time and part-time teachers in innovation and entrepreneurship education is appropriate	1	Valid
	Professional qualities of the teaching staff		
8	You have systematically studied the theoretical knowledge of innovation and entrepreneurship	1	Valid
9	You have rich practical experience in innovation and entrepreneurship	1	Valid
10	You are capable of teaching innovation and entrepreneurship	1	Valid
11	You have a high level of innovation and entrepreneurship guidance ability	1	Valid

	The guidelines for improving the Level of Educational Technology Literacy of Teachers in Universities in Guangxi	**IOC**	**Validlity**
12	You often use various teaching methods such as project-based teaching, case-based teaching, participatory or experiential teaching in the classroom	1	Valid
13	You can judge the direction and trend of innovation and entrepreneurship from a professional perspective	-1	invalid
14	You have clear professional development goals and plans for engaging in innovation and entrepreneurship work	1	Valid
	Management and assessment		
15	The university has established clear standards for the selection and employment of teachers in innovation and entrepreneurship education	1	Valid
16	The evaluation and assessment standards for university innovation and entrepreneurship teachers are fair and reasonable	1	Valid
17	The university’s evaluation and assessment methods for innovation and entrepreneurship teachers are scientific and effective	1	Valid
18	The university's evaluation and assessment of innovation and entrepreneurship teachers have shown significant results	1	Valid
19	The evaluation of innovation and entrepreneurship teachers by your university is a multi-party evaluation	-1	invalid
20	universities will give innovation and entrepreneurship teachers special treatment in their assessment and evaluation	-1	invalid
21	The university's management of innovation and entrepreneurship teachers is satisfactory	1	Valid
	Teacher training		
22	The types of training in innovation and entrepreneurship education you receive each year are diverse and abundant	1	Valid

	The guidelines for improving the Level of Educational Technology Literacy of Teachers in Universities in Guangxi	**IOC**	**Validlity**
23	You are satisfied with the practice and training opportunities provided by the university	1	Valid
24	You are interested in the training content provided by the university	1	Valid
25	Through training, your professional abilities and qualities have been greatly improved, and the training effect is significant	1	Valid
	Supporting mechanism		Valid
26	You are satisfied with your work environment	1	Valid
27	You are satisfied with the salary and benefits as a innovation and entrepreneurship education teacher	1	Valid
28	You are satisfied with the professional title evaluation and appointment/removal of innovation and entrepreneurship education teachers	1	Valid
29	The ratio of effort to return for innovation and entrepreneurship teachers is reasonable	-1	invalid
30	The university's policies and investment in innovation and entrepreneurship education make me feel very hopeful for future endeavors	-1	invalid
31	You are satisfied with the promotion channels and development space provided by the university for innovation and entrepreneurship education teachers	1	Valid
32	Your university has established a comprehensive incentive mechanism for innovation and entrepreneurship education teachers	1	Valid
33	The supporting measures for the teaching staff construction of innovation and entrepreneurship education in the current national, social, and university policies are relatively complete	1	Valid

Appendix E

Certificate of English

BANSOMDEJCHAOPRAYA
RAJABHAT UNIVERSITY

This is to certify that

Mr.Lichuan He

Achieved BSRU English Proficiency Test (BSRU-TEP) level

C2

Given on 3rd October 2020

(Assistant Professor Dr Kulsirin Aphiratvoradej)

Director

Appendix F

The Document for Accept Research

มหาวิทยาลัยมหาจุฬาลงกรณราชวิทยาลัย
วิทยาเขตนครศรีธรรมราช
๓/๓ ม.๕ ต.มะม่วงสองต้น อ.เมือง จ.นครศรีธรรมราช ๘๐๐๐๐
โทร. ๐๗๕-๓๔๒๘๙๘ โทรสาร ๐๗๕-๓๔๕๘๖๒

อว.๘๐๒๗ / ๑๘๗

๖ สิงหาคม ๒๕๖๗

เรื่อง รับรองการลงบทความวิจัยเพื่อตีพิมพ์ในวารสารมหาจุฬานาครทรรศน์

เรียน นายเหอ ลี่ชวน

ตามที่ **นายเหอ ลี่ชวน และรองศาสตราจารย์ ดร.จิตตวิสุทธิ์ วิมุตติปัญญา รองศาสตราจารย์ ดร. นิรันดร์ สุธีนิรันดร์ และผู้ช่วยศาสตราจารย์ ดร.พัชรา เดชโฮม** ได้ส่งบทความวิจัยเรื่อง **"กลยุทธ์การพัฒนาโครงสร้างคณาจารย์ในหลักสูตรนวัตกรรมและการเป็นผู้ประกอบการของมหาวิทยาลัยที่เน้นการประยุกต์ใช้ในมณฑลกวางสี"** เพื่อพิจารณาตีพิมพ์ในวารสารมหาจุฬานาครทรรศน์ มหาวิทยาลัยมหาจุฬาลงกรณราชวิทยาลัย วิทยาเขตนครศรีธรรมราช ซึ่งได้รับการคัดเลือกเข้าสู่ฐานข้อมูล ของศูนย์ดัชนีการอ้างอิงวารสารไทย (ศูนย์ TCI) ได้ถูกจัดกลุ่มคุณภาพวารสารประจำปี พ.ศ.๒๕๖๒ ให้เป็น วารสารที่มีคุณภาพกลุ่มที่ ๒ (TCI ฐาน ๒) และอยู่ในฐานข้อมูล TCI จนถึง ๓๑ ธันวาคม ๒๕๖๗ โดยจะดำเนินการจัดพิมพ์ในฉบับต่อไปตามระยะเวลาที่ได้กำหนดไว้ และวารสารมหาจุฬานาครทรรศน์ ได้รับบทความวิจัยของท่านเป็นที่เรียบร้อยแล้วนั้น

ในการนี้ วารสารมหาจุฬานาครทรรศน์ มหาวิทยาลัยมหาจุฬาลงกรณราชวิทยาลัยวิทยาเขตนครศรีธรรมราช ขอรับรองว่าบทความของท่านได้ผ่านตอบรับเพื่อพิจารณาบทความตีพิมพ์เผยแพร่ในปีที่ ๑๑ ฉบับที่ ๑๑ (พฤศจิกายน ๒๕๖๗) นี้ ซึ่งภายหลังจากนี้บทความจะผ่านการตรวจสอบความถูกต้องทางวิชาการโดยกองบรรณาธิการวารสารฯ และผู้ทรงคุณวุฒิต่อไป

จึงเรียนมาเพื่อโปรดทราบและดำเนินการต่อไป

เรียนมาด้วยความเคารพ

ปุญญาดา

(นางสาวปุญญาดา จงละเอียด)
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