ENTREPRENEUR TRAINING DEVELOPMENT MODEL FOR UNDERGRADUATE STUDENTS AT LIUZHOU INSTITUTE OF TECHNOLOGY

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Thesis	**Entrepreneur training development model for undergraduate students at liuzhou institute of technology**
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ABSTRACT

The objective of this research was to develop an entrepreneurship training model for undergraduate students at Liuzhou Institute of Technology. The initial step involves identifying key components of the training model through interviews with three CEOs, three innovation and entrepreneurship coaches, and three course instructors. The second step entails evaluating these components and constructing the model with input from seven CEOs, seven innovation and entrepreneurship coaches, and seven course instructors. In the third step, the model is assessed by three entrepreneurship experts, three modeling experts, and three human resources specialists. Finally, the fourth step involves implementing the model with 50 students. Data analysis methods include frequency, percentage, median, quartile, mean, and standard deviation.

The results of this research were findings significant obtained. The entrepreneurship training model comprises nine main components: Training Objective, Content, Method, Instructor, Environment, Practice, Policy, Evaluation, and Continuous Learning, along with 66 sub-components such as fostering innovative thinking and enhancing entrepreneurial intent. Experts unanimously endorsed the model. Post-implementation, the entrepreneurship rate among students increased from 1.7% in

2023 to 3.6% in 2024. Additionally, the number of awards won in the China College Students' Entrepreneurship Competition at the provincial level or above rose from 21 in 2023 to 61 in 2024, indicating a positive impact of the training model.

Keywords: Elements of Entrepreneur Training, Entrepreneur Training Model, Liuzhou Institute of Technology

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Chapter 1
Introduction

Rationale

Amidst the rapid development of global information technology and the continuous drive of economic innovation, the world economy is gradually transitioning into an era of innovation and entrepreneurship. In the new wave of technological revolution, it is foreseeable that the nation mastering technological innovation industries will lead the new development engines. The genesis and practical transformation of innovative technology fundamentally rely on talented individuals.

Surveying the contributions of high-tech entrepreneurship in various countries to their economies, it becomes evident that university students' entrepreneurial abilities are pivotal to the success of innovation-driven economic development. Consequently, governments across the globe have uniformly elevated entrepreneurship education, particularly aimed at university students, to a considerable stature, incorporating it into the national educational strategy. The United States was an early adopter of entrepreneurship education in universities. In the 21st century, the U.S. government further emphasized the cultivation of entrepreneurial skills in university students (Li Shichun,2011). European Union (EU) countries consider education and training as crucial methods for instilling entrepreneurial spirit and skills in the new generation, This, in turn, augments EU economic vigor and bolsters European competitiveness, augmenting EU economic vigor and bolstering European competitiveness (European Commission, 2001).

In the face of a globalized innovation and entrepreneurship economy, China stands at an unprecedented crossroads of opportunities and challenges. As the demographic dividend wanes, labor costs escalate, and the advantages of labor-intensive industries diminish, China is undergoing a shift from extensive development while confronting the environmental ramifications. Therefore, in 2012, China proposed the implementation of an innovation-driven development strategy to expedite the transition from cost-efficiency to innovation-driven advantages, seeking novel sources

of momentum for sustained development (China Commission,2012). This new source of momentum is rooted in innovative technology and entrepreneurial talent.

Since 1999, China has introduced entrepreneurship education. On May 5, 2010, the Ministry of Education issued the Opinions on Vigorously Promoting Innovation and Entrepreneurship Education in Higher Education Institutions and Encouraging Independent Entrepreneurship among University Students. It pointed out that university students are one of the most innovative and entrepreneurial groups, and conducting entrepreneurship education in higher education institutions and actively encouraging university students' independent entrepreneurship are important measures to implement entrepreneurship-driven employment and promote the full employment of university graduates. In 2012, China proposed an innovation-driven development strategy to accelerate the transition to innovation-driven advantages, seeking new sources of momentum for sustained development (Li Keqiang, 2012). The 2014 Summer Davos Forum emphasized the significance of entrepreneurship and encouraged nationwide entrepreneurial endeavors (Li Keqiang, 2014). This momentum was further solidified by the inclusion of mass entrepreneurship and innovation (Chinese Government Work Report, 2015). However, the outcomes of China's university entrepreneurship education over the past two decades have been less significant. According to the Michael Page 2023 China Graduate Employment Report, the self-employment rate of university graduates from 2018 to 2022 averaged at 1.42%, with a success rate of 2-3% (Mycos Research Institute, 2022), significantly lower compared to developed countries. In contrast, the entrepreneurship rate among American university students reached a notable 20.1% (Zhao Shufan, 2017), and the global average success rate of student entrepreneurship stands at approximately 10% (Chen Qingsong, 2018).

Evidently, the current model of university entrepreneurship education in China seems to fall short in adequately meeting the pressing demand for high-quality entrepreneurial talent in a rapidly changing societal landscape. The current focus on entrepreneurial steps and skill training neglects project practice, market realities, fostering innovative thinking, interdisciplinary collaboration, and problem-solving abilities, leading to a certain discrepancy between the education provided and the multidimensional, high-level innovative talents demanded by society. The

entrepreneurial capabilities of Chinese university students fail to meet the demand for high-quality entrepreneurial talent during China's economic transformation.

Therefore, China's university entrepreneurship education requires a thorough examination and targeted reform. It is imperative to avoid solely emphasizing the short-term effectiveness of skill-based entrepreneurship education and instead promote entrepreneurship education based on competency, with a long-term perspective. This approach will genuinely elevate the innovative and entrepreneurial abilities of university students, enabling them to become high-quality laborers essential for China's development of an innovative and entrepreneurial economy.

This presents new requisites for universities, necessitating a more effective utilization of their talent cultivation and societal service functions. Adjustments in talent cultivation objectives, methods, and approaches must align with the requirements of the era.

Research Question

What does the entrepreneur training model for undergraduate students at Liuzhou Institute of Technology?

Research Objectives

1. Major Objective

Entrepreneur training Development model for undergraduate students at Liuzhou Institute of Technology.

2. Specific Objectives

2.1 To study the elements of Entrepreneur training model for undergraduate students at Liuzhou Institute of Technology.

2.2 To evaluate elements and create the entrepreneur training model for undergraduate students at Liuzhou Institute of Technology.

2.3 To evaluate the entrepreneur training model for undergraduate students at Liuzhou Institute of Technology.

2.4 To implement the entrepreneur training model for undergraduate students at Liuzhou Institute of Technology.

Scope of the Research

Content (s)

The study is divided into five chapters.

Chapter one is the introduction. This paper expounds the importance and necessity of researching and developing the entrepreneur training model for undergraduate students.

Chapter two is literature review. This chapter mainly summarizes and analyzes the literature on entrepreneurship research at home and abroad and the mode of training student entrepreneurs. The human capital theory and the entrepreneurial process theory of Timmons provide a solid theoretical foundation for a development of Chinese students' entrepreneurial model.

Chapter three is the research methodology. This study will adopt the qualitative and quantitative mixed research method. This study will first use the expert interview method to obtain the existing entrepreneur training model for undergraduate students at Liuzhou Institute of Technology, and build a new entrepreneur training model for undergraduate students. The quantitative analysis method is adopted to determine the validity of the collected data.

Chapter four is result of analysis. Using expert interviews, expert evaluate, Course experiment to collect data and analyze the data, a new entrepreneur training model for undergraduate students at Liuzhou Institute of Technology is obtained, and empirical research is carried out according to the new model to evaluate the effectiveness of the model.

Chapter five is conclusion, discussion and recommendations. Based on the main conclusions and problems of the empirical research on the entrepreneur training model for undergraduate students at Liuzhou Institute of Technology, this chapter puts forward some suggestions on cultivating student entrepreneurs.

Population and the Sample Group

Population

CEOs: CEOs of startup companies who have registered and served as the legal representative for a significant duration.

Teachers of Innovation and Entrepreneurship Courses: Teachers engaged in innovation and entrepreneurship education within higher education institutions.

Innovation and Entrepreneurship Coaches: Individuals holding entrepreneurship mentor certificates, with experience guiding students in innovation and entrepreneurship competitions and projects.

Experts in the Field of Entrepreneurship: Experts with entrepreneurial experience and qualifications in entrepreneurship guidance.

Experts in the Field of Modeling: Experts with relevant work experience and qualifications in the field of modeling.

Human Resources Experts: Professionals working in human resources in higher education institutions or businesses, holding advanced qualifications.

Students Engaged in Innovation and Entrepreneurship Education and Practice: Students from Liuzhou Institute of Technology who participate in innovation and entrepreneurship-related courses and competitions.

The Sample Group

The sample groups in this study are divided into the following four groups, each employing different data collection methods. For the first group, data will be collected using the semi-structured interview method. For the second and third groups, expert data will be collected using a Research Evaluation Form and analyzed using a five-point scale. As for the fourth group, data will be collected using course experiment methods and questionnaire surveys:

The first group includes 3 CEOs of entrepreneurial companies, 3 innovation and entrepreneurship course teachers, 3 Innovation and entrepreneurship coach.

1. The selection criteria for CEOs of entrepreneurial companies are: having registered a startup company and operated it as the legal representative for more than 8 years.

2. The selection criteria for innovation and entrepreneurship course teachers are: engaged in teaching in the field of innovation and entrepreneurship for over 8 years, and having guided students in participating in innovation and entrepreneurship competitions or projects.

3. The selection criteria for Innovation and entrepreneurship coach are: holding entrepreneurship mentor certificates, having guided students in participating in innovation and entrepreneurship competitions and practical projects, having more than 8 years of work experience in entrepreneurship guidance.

The second group comprises 7 CEOs of entrepreneurial companies, 7 innovation and entrepreneurship course teachers, 7 Innovation and entrepreneurship coach.

1. The selection criteria for entrepreneurial enterprise CEOs are: holding positions as company leaders, having entrepreneurial experience for more than 8 years, and showing positive development trends.

2. The selection criteria for experts teaching innovation and entrepreneurship courses are: having over 10 years of experience teaching innovation and entrepreneurship courses.

3. The selection criteria for Innovation and entrepreneurship coach are: holding certificates of entrepreneurship guidance experts at or above the provincial level, serving as judges for innovation and entrepreneurship competitions at or above the provincial level, guiding multiple student entrepreneurial projects with successful implementations, having more than 8 years of work experience in entrepreneurship guidance.

The third group consists of 3 entrepreneurship experts, 3 modeling experts, and 3 HR specialists.

1. The selection criteria for entrepreneurship experts are: Having more than 10 years of relevant work experience, possessing a national-level entrepreneurship guidance certificate, leading students to win awards in national-level entrepreneurship competitions, and having personal entrepreneurial experience.

2. The selection criteria for modeling experts are: Having more than 10 years of relevant work experience, holding a senior professional title, having qualifications to supervise doctoral students, and having research achievements in modeling.

3. The selection criteria for HR specialists are: Having more than 10 years of relevant work experience, holding a national senior human resources professional qualification, and being familiar with recruitment work in universities.

The fourth group consists of 50 students from the Entrepreneurship Experimental Class at Liuzhou Institute of Technology. These 50 students come from various majors and grades across the university. The selection criteria are as follows:

1. Having studied and passed the Fundamentals of Innovation and Entrepreneurship course.

2. Having obtained approval for regional-level innovation and entrepreneurship training program projects.

3. Having participated in the China Internet+ Innovation and Entrepreneurship Competition and received awards at or above the provincial level.

Location

Guangxi province

Time

10/2023 - 07/2024

Advantages

1. Provide critical educational support for the realization of innovation-driven strategies.

China's economic development has entered a new normal cycle, industrial development is at a historical crossroads of three phases superimposed, traditional industries such as manufacturing are facing enormous pressure from industrial restructuring and upgrading, economic growth has entered a downward curve, and the development model is in urgent need of transformation and upgrading. To meet the requirements of scientific and technological innovation and sustainable development, the reserve of innovative talents must become the key point to promote the innovation strategy, to cope with the urgent challenge of the shortage of high-quality innovative and entrepreneurial talents in the talent structure.

2. To provide systematic solutions to the growing employment problem.

College students are an important reserve of national human capital. To realize the innovation-driven strategy, it is necessary to stimulate the innovative vitality and entrepreneurial enthusiasm of college students, make them become the key driving force to promote social and economic development, and provide

systematic solutions to the increasingly severe employment problem. To alleviate the employment contradiction of college graduates, the government has actively introduced policies to support entrepreneurship education in colleges and universities and encourage college students to start their own businesses, to create more opportunities and jobs for the society while solving their own employment problems. College students' participation in entrepreneurship is an important means to enhance their comprehensive quality and improve their social survival ability, and it is also an effective way to promote employment and relieve the pressure of social employment through entrepreneurship.

3. Guide Chinese college students to carry out entrepreneurship effectively based on specific research.

Under the guidance of a series of policies and the active promotion of colleges and universities, the entrepreneurial enthusiasm of Chinese college students is rising day by day, but the entrepreneurial situation of Chinese college graduates is not ideal. To improve the ability of college students to start their own business, increase the proportion and success rate of college graduates to start their own business, and train more innovative talents for the national economic transformation, it is necessary to conduct a systematic study on college students' entrepreneur training model, and put forward effective suggestions and countermeasures. Therefore, the research around this topic has important theoretical and practical significance for the people's livelihood employment project, for the stability of the social situation, and for the formation of new impetus for economic development and transformation.

Definition of Terms

Entrepreneur Training is referring to the educational programs, courses, and activities designed to equip individuals with the knowledge, skills, and mindset necessary to start, manage, and grow a successful business venture. This type of training aims to cultivate entrepreneurial competencies such as business acumen, innovation, leadership, and strategic thinking. Entrepreneur training programs often cover various aspects of business, including marketing, finance, risk management, and effective communication. The goal is to empower individuals to navigate the

challenges of entrepreneurship, identify opportunities, and contribute to economic development through the establishment and growth of their enterprises.

Entrepreneur Model is an entrepreneur model refers to a conceptual framework or representation that outlines the key elements, characteristics, and factors associated with successful entrepreneurship. This model serves as a guide or blueprint for understanding the entrepreneurial process, including the skills, traits, and behaviors essential for individuals to thrive as entrepreneurs. The entrepreneur model may encompass aspects such as business strategy, innovation, risk management, leadership, and the ability to identify and capitalize on opportunities. It provides a structured approach for analyzing and developing the competencies required for effective entrepreneurial endeavors, serving as a valuable resource for aspiring and existing entrepreneurs seeking guidance in their business pursuits.

The Entrepreneur Training Model refers to a structured framework or system designed to facilitate the learning and development of individuals aspiring to become successful entrepreneurs. This model outlines the objectives, content, methods, instructors, environment, evaluation of effectiveness, and duration of training, as well as any subsequent learning support. It encompasses the essential components needed to equip individuals with the knowledge, skills, and mindset required for entrepreneurship. The model aims to provide a comprehensive and effective approach to training, covering areas such as business strategy, financial management, marketing, innovation, and leadership. It serves as a guide for educators, trainers, and institutions in designing and implementing programs that empower aspiring entrepreneurs to navigate the challenges of starting and managing their own businesses.

Research Framework

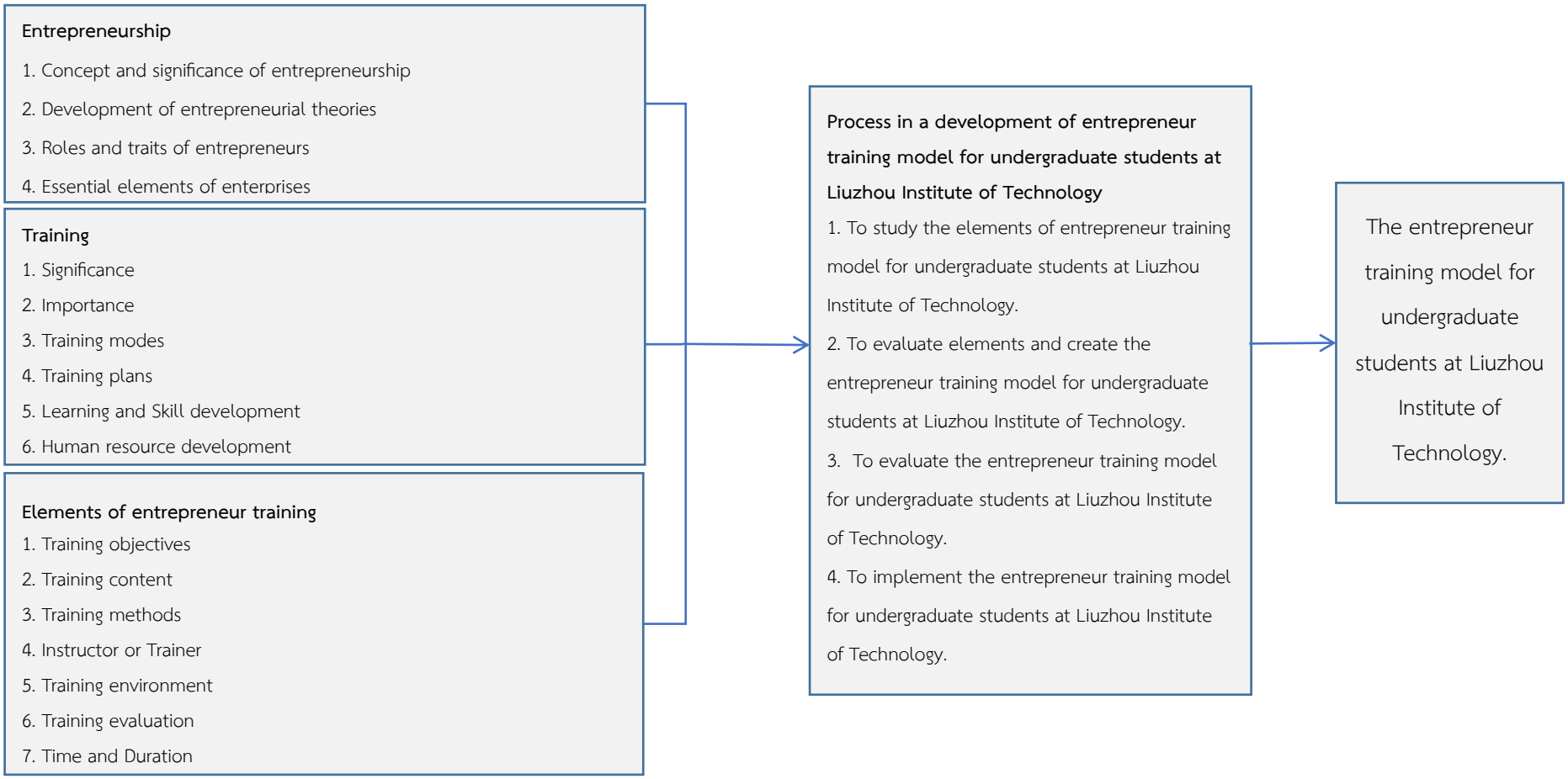


Figure 1.1 Research Framework

Chapter 2

Literature Review

Research topics is entrepreneur training development model for undergraduate students at Liuzhou Institute of Technology.

This chapter will be divided into four main sections. Firstly, the first section will explore the basic concepts of entrepreneurship, including the definition and significance of entrepreneurship, the development of entrepreneurial theories, the roles and traits of entrepreneurs, and the essential elements of entrepreneurial capabilities. The second section will focus on the importance of training, covering its significance, importance, modes, plans, learning and skill development, and human resource development. The third section will analyze the elements of entrepreneur training in detail, specifically including training objectives, training content, training methods, instructors or trainers, training environment, training evaluation, and the time and duration of training. The fourth section will provide a summary, summarizing the main findings of this paper, discussing the limitations of the research, and providing suggestions for future research. The references cited in this chapter will be listed in the appendix.

The researcher has studied the concepts and related theories and presented on the following topics

1. Concept of Entrepreneurship
   - 1.1 Concept and significance of entrepreneurship
   - 1.2 Development of entrepreneurial theories
   - 1.3 Roles and traits of entrepreneurs
   - 1.4 Essential elements of enterprises
2. Concept of Training
   - 2.1 Significance
   - 2.2 Importance
   - 2.3 Training modes
   - 2.4 Training plans

2.5 Learning and Skill development

2.6 Human resource development

3. Concept of Elements of entrepreneur training

3.1 Training objectives

3.2 Training content

3.3 Training methods

3.4 Instructor or Trainer

3.5 Training environment

3.6 Training evaluation

3.7 Time and Duration

4. Related research

Concept of Entrepreneurship

1. Concept and significance of entrepreneurship

1.1 The definition of entrepreneurship

The definition of the term entrepreneurship can be expressed in various ways in English. For instance, when referring to entrepreneurial companies, terms such as venture and start-up are commonly used. When referring to entrepreneurs themselves, the term entrepreneur is used. Entrepreneurship can be described as the activity of entrepreneurial endeavors, and it also carries connotations related to identity, abilities, and spirit. Some translate entrepreneurship as entrepreneurial spirit, but a more precise translation is entrepreneurial mindset. In academic and professional contexts, entrepreneurship is generally used to represent the concept, and this usage is widely accepted in the international academic community. In this paper, which focuses on entrepreneur training models, the term entrepreneur is used.

Regarding the essence of entrepreneurship, it manifests as the continuous process of establishing new enterprises. Based on existing research literature, many scholars abroad have explored entrepreneurship. Professor Jeffry Timmons, renowned as the father of entrepreneurship education at the Babson College, emphasized that entrepreneurship encompasses more than just founding new companies, raising

necessary funds, and creating employment opportunities. It also extends beyond the domains of breakthroughs, innovations, and creations. Entrepreneurship is influenced by opportunities but also requires entrepreneurs to develop well-planned entrepreneurial activities, possess exceptional leadership abilities, and master the art of balancing relationships. Additionally, entrepreneurship effectively stimulates people's creative desires and positively contributes to human development. Justin Tan views entrepreneurship as an activity that opens up markets by connecting products that fulfill human desires with those desires. Ronstadt's research characterizes entrepreneurship as the dynamic process of wealth creation by individuals who are willing to commit their time, resources, and assets to provide products or services with value, using the necessary skills and resources obtained and allocated by entrepreneurs, even if these products or services are not necessarily new or unique. Stevenson's research suggests that entrepreneurship is the process of pursuing and exploiting opportunities by concentrating unique resources without considering existing resources. Davidsson et al. (2001) define entrepreneurship as the process of establishing new enterprises. Gartner (1990) used the Delphi method to explore the concept of entrepreneurship, concluding that entrepreneurship mainly involves two aspects: the personal characteristics of entrepreneurs, including personality traits, innovativeness, uniqueness, venturing into new ventures, and seeking development; and the behavioral outcomes of entrepreneurship, understood as value creation, profit pursuit, becoming business owners and managers, and creating organizations.

Morris (2010) argues that the essence of entrepreneurship should be understood from three dimensions: innovation, risk-taking, and forward thinking, and action, with these three dimensions being interrelated. Shane and Venkataraman (2000) propose that entrepreneurship involves identifying and exploiting profitable opportunities. Herron and Peters (2004), in their book Entrepreneurship, suggest that entrepreneurship is the process of creating valuable new entities and obtaining satisfactory monetary and independent rewards. This process relies on the investment of time, effort, and the assumption of material, economic, and social risks. Singh (2001) emphasizes that entrepreneurship involves creating a new enterprise and considers the subject pursuing entrepreneurial opportunities as a viable, profit-seeking potential

new venture. MJ. Dollinger (2008) defines entrepreneurship as the process of creating innovative organizations or organizational networks for profit or growth under conditions of risk and uncertainty. It involves innovation, economic organization, and growth under conditions of risk and/or uncertainty. Baron and Shane (2005) perceive entrepreneurship as a field dedicated to understanding how opportunities for creating new things, new products or services, new markets, new production processes or raw materials, and new ways of organizing existing technologies arise, are identified, or created by specific individuals, how they use various means to exploit or develop them, and subsequently generate various outcomes. From a process perspective, entrepreneurship includes stages such as opportunity recognition, deciding to proceed and integrating necessary resources, starting a new business, establishing success, and reaping rewards. In summary, entrepreneurship is a dynamic process of creating an organizational management system for the purpose of meeting the needs of product innovation and marketing innovation.

Currently, there is no unified understanding of the concept of entrepreneurship within the academic community in China. Many scholars have defined entrepreneurship from different perspectives, which can generally be categorized into five viewpoints:

Opportunity-Value Perspective: This perspective posits that entrepreneurship aims to realize the value of market opportunities, whether by seizing opportunities to develop new products or engaging in service innovation. For example, researchers like Yu Yihong et al. (2001) argue that entrepreneurship is a process of seeking and seizing market opportunities to smoothly realize their potential value, achieved through the creation of new products and services. Song Keqin (2006) suggests that entrepreneurship is a process where entrepreneurs create value through the supply of products and services, requiring the discovery and identification of business opportunities and effective organization of related resources.

Wealth-Purpose Perspective: This viewpoint contends that entrepreneurship is a business activity aimed at generating profits. For instance, scholars like Fu Shouqing and Li Jun (2004) assert that entrepreneurship is a business activity undertaken by individuals or groups to establish new enterprises legally and engage in paid operations

for profit. Rao Jianxin (2004) suggests that entrepreneurship is an economic activity aimed at establishing new businesses, with the purpose of creating value and requiring the innovative integration of various economic elements.

Organizational Innovation Perspective: This perspective includes both product innovation and the establishment of new organizations within the scope of entrepreneurship. It encompasses the creation of new companies from scratch and the revitalization of existing troubled companies. For example, Li Qianwen and Zhang Yuli (2004) argue that entrepreneurship within existing companies will become a key area of focus in academia. Internal entrepreneurship activities are often initiated by employees who possess the willingness and entrepreneurial spirit, with employees and companies jointly sharing the achievements of employee entrepreneurship and addressing the risks faced during the entrepreneurial process. External entrepreneurship, as the name suggests, involves entrepreneurial activities outside the current company, employing different development strategies from the parent company and effectively allocating new resources through the establishment of independent business units. Additionally, Zhang Jian et al. (2003) suggest that entrepreneurship not only involves expanding business scope but also includes the establishment of new organizations and the realization of new combinations of various related resources through innovative means.

Core Elements Perspective: This viewpoint emphasizes that resources are crucial for the success of entrepreneurship, and only by innovatively combining the various resources needed for entrepreneurship can success be achieved. However, scholars differ in their understanding of the importance and number of these core elements. This perspective can be categorized into several sub-views:

Two Essential Elements of Entrepreneurship: For example, Lei Lin (2001) argues that entrepreneurship is a process in which entrepreneurs create value by utilizing human and capital resources. In this process, entrepreneurs provide useful products or services to consumers, earning profits and promoting the development of their businesses.

Three Essential Elements of Entrepreneurship: Scholars like Jing Yunxiang (2006) suggest that the success of entrepreneurship depends on many factors, but the most critical factors are whether entrepreneurs can master the three elements of capability, opportunity, and resources.

Four Essential Elements of Entrepreneurship: This perspective considers the core elements of entrepreneurship to be entrepreneurs, technology, capital, and the market. For example, Chen Dezhi (2001) believes that although entrepreneurship is influenced by various factors, these four elements are the core elements of entrepreneurship and should be closely monitored by entrepreneurs.

Risk Management Perspective: This viewpoint sees entrepreneurship as an innovative activity, and research on entrepreneurship should focus on managing entrepreneurial risks. As the uncertainty associated with innovation increases, so does the risk faced by entrepreneurs. For instance, researchers like Lin Qiang et al. (2001) argue that entrepreneurship is a high-risk innovative activity within the management process of a company. Therefore, theoretical research on entrepreneurship should prioritize attention to risk prevention from the perspective of entrepreneurs and their investors. Wang Yanrong (2004) suggests that a crucial task for entrepreneurs and investors is to understand entrepreneurial risks and take effective measures to mitigate or reasonably avoid them.

1.2 The Role of Entrepreneurship in Economy and Society

Acs, Zoltan. (2006) points out that although traditional economic development analyses often focus on large corporations, small entrepreneurial firms make significant contributions to the overall economy through innovation and enhancing competition. He argues that entrepreneurial activities not only drive technological advancement and optimize economic structures but also directly stimulate economic growth by creating job opportunities and increasing productivity.

Cumming, D., Johan, S., & Zhang, M. (2014) explored the impact of entrepreneurial activities on various economic indicators across countries, including per capita GDP, unemployment rates, the proportion of exports to GDP, and the number of patents per capita. The study found that entrepreneurial activities have a significant positive effect on economic growth, particularly in increasing per capita GDP and the

proportion of exports, as well as in boosting the number of patents, while also effectively reducing unemployment rates.

Moheb Zaki, I., & Rashid, N. H. (2016) explored the economic role of entrepreneurship in emerging countries, arguing that entrepreneurship actively drives economic growth by creating new business opportunities and jobs. Particularly in emerging countries, given the abundant youth labor force and the prevailing middle to low-income levels, entrepreneurship has become a focal point of policy direction. Moreover, both international and regional media have also identified entrepreneurship as a crucial driver of economic growth.

Dhaliwal, A. (2016) extensively explores the multifaceted impacts of entrepreneurship on economic development. He argues that entrepreneurship is not only a crucial driver of economic growth but also effectively promotes employment, stimulates capital formation, and fosters balanced regional development through innovation and seizing market opportunities. Entrepreneurial activities, by introducing innovations, contribute to the optimization of economic structures and industrial upgrading, while also enhancing the overall economic vitality of society by creating new job opportunities and extending industrial chains.

The study by Vatavu, S., Dogaru, M., Moldovan, N.-C., & Lobont, O.-R. (2022) shows a strong positive correlation between entrepreneurship and GDP growth. Specifically, cultural and social norms, early-stage entrepreneurial activities, physical and service infrastructure, as well as taxation and bureaucratic systems, are all significantly linked to GDP growth.

Thurik, R. (2007) notes that although the rise of entrepreneurship is not synchronized across different developed countries, entrepreneurship has become a significant driver of economic growth. Particularly, entrepreneurship profoundly impacts economic modernization and the formulation of economic policies by fostering the development of knowledge and innovation.

Carland, JoAnn C. & Carland, James W. (2004) highlighted in their research that while large corporations were once seen as the main drivers of economic growth, the innovation and flexibility of small businesses play a more significant role in modern economic development. They emphasized that entrepreneurship positively impacts

the economy by creating job opportunities and fostering the development of social and natural capital.

In discussions about the impact of entrepreneurship on the economy and society, several scholars emphasize that entrepreneurship not only fuels economic growth but also brings extensive benefits to society through fostering innovation and competition. Entrepreneurial activities enhance the vitality and adaptability of the economy by creating jobs, optimizing economic structures, and advancing technological progress. Furthermore, entrepreneurship stimulates the building of social capital, strengthens economic balance between regions, and helps narrow development gaps.

From these perspectives, it is evident that the importance of entrepreneurship in modern economic systems is increasing. It acts not only as a catalyst for economic growth but also as a key factor in social progress. Based on this, my view is that future economic policy-making should place greater emphasis on nurturing and supporting the entrepreneurial spirit, particularly in the educational system and through policy incentives. By increasing investment in entrepreneurship education and creating a more favorable policy environment for entrepreneurial activities, we can further unleash entrepreneurial potential and drive economic and social development towards greater prosperity and inclusiveness.

1.4 The Relationship between Entrepreneurship and Innovation

Zhao, Fang. (2005) explores the relationship between entrepreneurship and innovation. The study shows that entrepreneurship and innovation are complementary, and their combination is crucial for organizational success and sustainability. Entrepreneurship leverages innovation to expand business scope and promote growth, while innovation realizes its economic value through entrepreneurial activities.

Nooteboom, B., & Stam, E. (2008) discussed the relationship between entrepreneurship and innovation. They emphasized that although entrepreneurship and innovation play key roles in economic growth, entrepreneurship does not arise spontaneously; it needs to be fully developed within an appropriate institutional and

policy environment. Entrepreneurship is typically seen as an activity that drives innovation by identifying and exploiting market opportunities.

Kardos, Mihaela. (2012) demonstrates that innovative SMEs are considered key drivers of innovation and competitiveness, forming an essential part of achieving sustainable development. Entrepreneurial activities enhance the competitiveness and market adaptability of enterprises through innovation, thereby promoting sustainable economic development. The study emphasizes that the synergy between innovation and entrepreneurship is of significant importance for the continuous development of the economy and society.

Sahut, Jean-Michel, & Peris-Ortiz, Marta. (2013) argue that although these two concepts have independent research fields, they are closely related. Entrepreneurship is seen as the process of achieving innovation by creating new combinations of resources. Small businesses, due to their flexibility and capacity for innovation, are often the best environments for entrepreneurship and innovation. Innovation can be incremental or radical, and entrepreneurship drives sustainable economic and social development through innovative activities.

Wennekers, S., van Stel, A., Carree, M., & Thurik, R. (2010) point out that entrepreneurship identifies and exploits market opportunities through innovation, and these two elements are inseparable. Their research shows that innovative SMEs are not only key drivers of innovation but also essential components of economic development. Entrepreneurial activities enhance the competitiveness and market adaptability of enterprises through innovation, thereby promoting sustainable economic and social development.

Gerlach, Anne. (2003) explores the innovative role of sustainable entrepreneurs in implementing sustainable development. She points out that sustainable entrepreneurship involves not only innovative practices towards environmental and social goals but also the process of identifying and realizing these innovations within a business context. Based on the perspectives of the above authors, it is evident that there is a close interdependent relationship between entrepreneurship and innovation. Entrepreneurial activities identify and exploit market opportunities through innovation, enhancing the competitiveness and market

adaptability of enterprises, thereby promoting sustainable economic and social development. Innovative SMEs play a crucial role in this process, becoming significant forces in driving economic growth and achieving sustainable development.

Given these viewpoints, I believe that future research and policies should focus more on providing support and resources for innovative entrepreneurship. Particularly, by optimizing the entrepreneurial environment and policy framework, we can further stimulate the innovative potential of SMEs. Additionally, the education system should strengthen the integration of entrepreneurship and innovation, cultivating talents with innovative thinking and entrepreneurial spirit to drive broader economic and social progress.

2. Development of Entrepreneurship Theories

2.1 Classic Entrepreneurship Theories

Baumol, W. J. (1967) proposed the relationship between business behavior, value, and growth, and emphasized the key role of entrepreneurs in driving economic growth and innovation. Baumol's research provides important theoretical support for subsequent studies on entrepreneurial behavior and entrepreneurship theory, highlighting the unique position and role of entrepreneurs in a market economy.

Baumol, W. J. (1968) discussed the importance of entrepreneurship in economic theory and pointed out the lack of attention to entrepreneurs in traditional economic models. Entrepreneurs play an indispensable role in the economic system by identifying and exploiting market opportunities, thereby driving innovation and economic growth. However, traditional economic theory has limitations in explaining entrepreneurial behavior and activities, and Baumol calls for more in-depth research on the position and role of entrepreneurs in economic theory.

Kirzner, I. M. (1973) proposed the theory of entrepreneurial opportunity, emphasizing that entrepreneurs drive market equilibrium and dynamic economic development through keen observation and grasp of market opportunities. He argued that entrepreneurs play the role of discovering profit opportunities in the market, and this "alertness" is the core of entrepreneurial behavior.

Pfeffer, J., & Salancik, G. (1978) proposed the Resource Dependence Theory in their book "The External Control of Organizations: A Resource Dependence

Perspective," where they discussed in detail how organizations depend on resources in their external environment and manage these dependencies to survive and succeed. This is the earliest form of the entrepreneurial resource dependence theory.

Morris, M. H., Lewis, P. S., & Sexton, D. L. (1994) proposed a theoretical framework for the entrepreneurial process, detailing the various stages of entrepreneurial activities. They argued that the entrepreneurial process includes opportunity recognition, resource acquisition, entrepreneurial management, and growth and exit strategies. This theoretical framework views entrepreneurial activities as a dynamic input-output process, emphasizing the challenges and strategies entrepreneurs face at different stages. Through this perspective, Morris and his colleagues systematically demonstrated the complexity and diversity of the entrepreneurial process, providing an important theoretical foundation for understanding and researching entrepreneurial activities.

Casson, M. (1982) believes that entrepreneurs are individuals who excel in judgment and decision-making, capable of identifying and exploiting opportunities in uncertain market environments. Entrepreneurs drive dynamic market changes and economic development by coordinating resources and managing risks. His research emphasizes the unique role of entrepreneurs in resource allocation and market innovation, highlighting that their decision-making ability and market sensitivity are key factors to their success.

2.2 Contemporary Entrepreneurship Theories

Stevenson, H. H. & Gumpert, D. E. (1985) explored the core elements of entrepreneurship, emphasizing the unique ability of entrepreneurs to identify and exploit opportunities. They pointed out that entrepreneurs achieve innovation and value creation by pursuing opportunities under conditions of limited resources. The entrepreneurial process is characterized by dynamism and uncertainty, requiring entrepreneurs to adapt flexibly to challenges and effectively utilize resources to seize market opportunities. Their research provides an important theoretical foundation for understanding the behavioral characteristics and decision-making processes of entrepreneurs, highlighting the crucial role of entrepreneurial spirit in driving economic development.

Moore, J. F. (1993) proposed the concept of the business ecosystem, emphasizing that companies operate within an interdependent network, similar to natural ecosystems. Companies must continuously adapt to environmental changes and leverage the resources and relationships within the ecosystem to achieve innovation and growth. Moore's theory provides a new framework for understanding the complex relationships and competitive dynamics among companies, pointing out that successful companies need not only compete in the market but also collaborate with other companies to jointly build and maintain a healthy business ecosystem. This is the earliest form of the entrepreneurial ecosystem theory.

Leadbeater, C. (1997) explored the rise of social entrepreneurs and their crucial role in addressing social issues. He emphasized that social entrepreneurs are dedicated to solving social and environmental problems through innovative business models and practices, rather than merely pursuing economic profit. Social entrepreneurs have the ability to influence policy changes and social structures, driving positive social change through creative solutions and collaboration. His insights provide an important theoretical foundation and practical guidance for the theory of social entrepreneurship, highlighting the significance and potential of social entrepreneurs in modern society.

Blaug, M. (1998) emphasized that over time, entrepreneurs have gradually come to be seen as the core driving force of economic growth and innovation. By analyzing the viewpoints of different economic schools, Blaug demonstrated how entrepreneurship theory has evolved and gained more recognition and attention in modern economics.

Cooper, A. C., Woo, C. Y., & Dunkelberg, W. C. (1988) studied entrepreneurs' perceptions of successful opportunities and found that entrepreneurs generally exhibit a higher degree of success optimism. Their research provides valuable insights into the psychological factors at play in entrepreneurial behavior, emphasizing the positive and negative impacts of optimistic bias during the entrepreneurial process. These findings are crucial for analyzing entrepreneurs' decision-making processes and entrepreneurial motivations.

Klein, P. G. (2008) evaluated the methods of opportunity discovery and proposed a more comprehensive framework that links entrepreneurship to broader issues of economic organization. He argued that traditional opportunity discovery theories have limitations and that entrepreneurial judgment should be central to understanding entrepreneurial activities. The Austrian School's subjective analysis of capital heterogeneity indicates that entrepreneurial opportunities are essentially subjective, resulting from the imagination and judgment of entrepreneurs rather than existing as objective entities.

2.3 Comparison and Evaluation of Different Theories

Van Praag, C. Mirjam (1999) explores the contributions of several renowned economists to entrepreneurship theory. These classic views include Cantillon's description of the entrepreneur as a risk-taker and arbitrageur, Say's emphasis on the entrepreneur's coordinating role in production and distribution, Marshall's focus on the importance of the entrepreneur in business management, and Schumpeter's portrayal of the entrepreneur as an innovator and driving force of the economic system. These classic perspectives have laid the foundation for the development of modern entrepreneurship theory and demonstrate the critical role of entrepreneurship in the economic system.

Tiryaki, Ahmet (2005) critically analyzes the Neoclassical theory (mainly Marshall's perspective), Schumpeter's innovation theory, and the Neo-Austrian theory primarily proposed by Kirzner. Tiryaki points out that Marshall's analysis emphasizes market equilibrium under perfect competition conditions while neglecting the roles of innovation and change. Schumpeter views entrepreneurs as the driving force behind innovation and economic development, with his theory of "creative destruction" highlighting the revolutionary role of entrepreneurs in advancing economic progress. Kirzner, on the other hand, sees entrepreneurs as alert arbitrageurs who push the market towards equilibrium by discovering and exploiting profit opportunities.

Short, Larry., & Dunn, Paul (2009) analyzed the viewpoints of Cantillon, Schumpeter, and Kirzner. Cantillon described entrepreneurs as risk-takers and arbitrageurs, Schumpeter emphasized that entrepreneurs are the driving force behind innovation and economic system transformation, and his "creative destruction" theory

highlights the crucial role of entrepreneurs in advancing economic progress. Kirzner viewed entrepreneurs as alert arbitrageurs who push the market towards equilibrium by discovering and exploiting profit opportunities.

Through reading and analyzing the literature, we find that classical theories mainly include:

1. Entrepreneurial Opportunity Theory, which emphasizes that entrepreneurs create value by identifying and exploiting opportunities in the market.

2. Resource Dependency Theory, which focuses on the importance of acquiring and managing resources in the entrepreneurial process, stating that effective resource utilization is crucial for entrepreneurial success.

3. Entrepreneurial Process Theory, which describes the phased process of entrepreneurial activities from opportunity discovery to establishing a business, emphasizing the challenges and decisions entrepreneurs face.

Modern entrepreneurial theories are more diverse and comprehensive, including:

1. Ecosystem Perspective, which emphasizes the interaction of entrepreneurs with their environment and the role of ecosystems, including the impact of policies, markets, and socio-cultural factors.

2. Behavioral Economics, which primarily studies the decision-making behaviors, risk preferences, and cognitive biases of entrepreneurs, providing insights into their behavioral patterns in uncertain environments.

3. Social Entrepreneurship, which focuses on entrepreneurial activities aimed at solving social problems and enhancing social welfare, emphasizing social impact and sustainable development.

In my opinion, based on trends in entrepreneurial theory research and development, new directions in entrepreneurial theory might focus on the following three areas:

1. Technology-Driven Innovation: With rapid technological advancements, entrepreneurs increasingly rely on technological innovation to address real-world problems and needs.

2. Sustainable Entrepreneurship: This research direction emphasizes environmental protection and social responsibility, striving for long-term sustainability and creating social value in entrepreneurial activities.

3. Globalization Perspective: This perspective considers opportunities in global markets and transnational cooperation, enabling entrepreneurs to seek resources and markets globally rather than being limited by geographic location.

3. The Role and Characteristics of Entrepreneurs

3.1 Definition and Classification of Entrepreneurs

In the early stages of research on entrepreneurship, both the academic community and relevant institutions mainly focused on exploring the fundamental question of who constitutes an entrepreneur.

In Western academia and the business world, an entrepreneur is considered as someone who organizes and manages a business or enterprise and can effectively bear its associated risks. The term entrepreneur encompasses two main meanings:

Founder: This typically refers to leaders who have recently established or are about to establish new enterprises.

Business Owner: This refers to leaders who are responsible for the management and decision-making within existing businesses.

The concept of entrepreneurs was first introduced into economics by the French economist Cantillon (1755). He defined entrepreneurs as individuals who fully exploit market opportunities that have not been discovered by others, thereby achieving profits and making significant achievements. J. B. Say (1836) noted that entrepreneurs are agents of economic activity, transferring economic resources from lower-productivity areas to higher-productivity areas, resulting in greater returns. Knight (1921), in his doctoral dissertation Risk, Uncertainty, and Profit, viewed entrepreneurs as decision-makers facing uncertainty, requiring them to bear entrepreneurial risks due to future uncertainties. Schumpeter (1934), in his seminal work The Theory of Economic Development, considered entrepreneurs as innovators, highlighting five types of innovation: introducing new products, introducing new production methods, opening up new markets, securing new sources of raw materials or semi-finished

products, and creating new organizations. Kirzner (1973), in his book Competition and Entrepreneurship, argued that what distinguishes some individuals as entrepreneurs is their ability to keenly identify market opportunities, a skill not possessed by most people. Casson (1982), in The Entrepreneur: An Economic Theory, emphasized that entrepreneurs excel in coordinating and utilizing scarce resources and are adept at making rational decisions. Mahoney & Michael (2005) pointed out that entrepreneurs include not only high-ranking employees within organizations but also all employees with entrepreneurial insight and creativity, thereby expanding the scope of entrepreneurship to encompass all employees.

Li Zhineng et al. (2000) defined entrepreneurship as a process of creating novel products or services and realizing their potential value through the identification and capture of opportunities. They emphasized the innovative nature of entrepreneurs, linking entrepreneurs with entrepreneurial activities. In this sense, entrepreneurs are equivalent to business owners. Once entrepreneurs establish new enterprises through the utilization of new market opportunities and pursue business success, they can be considered entrepreneurs. Furthermore, developing a new venture within an existing company is also a form of entrepreneurship.

Lin Qiang et al. (2001) defined entrepreneurs from both broad and narrow perspectives. Narrowly, only core individuals participating in entrepreneurial activities can be called entrepreneurs. In contemporary society, the technological content of entrepreneurship continues to increase, making it difficult to conduct many entrepreneurial activities without the support of technical experts. Additionally, in practice, many entrepreneurial activities are initiated by experts with technical achievements. Therefore, these core technical experts should be considered entrepreneurs. Broadly, anyone participating in entrepreneurial activities can be regarded as an entrepreneur. Compared to entrepreneurs in the broader sense, narrow entrepreneurs face greater entrepreneurial risks but also have the opportunity for greater returns.

Wang Guanlong (2004) defined entrepreneurial talents as individuals who can create new ventures in society, showing greater enthusiasm, activity, creativity, and vitality compared to ordinary talents in society. Thus, a society's level of development

largely depends on the number of entrepreneurial talents it possesses. In contrast to ordinary talents in society, the defining characteristic of entrepreneurial talents is their innovativeness.

Zhang Xiangmin (2008) believed that entrepreneurial talents are comprehensive individuals who can organically integrate all available resources and are eager to pursue tangible results. Xiao Hongwei (2009) pointed out that entrepreneurial talents should not be equated with entrepreneurial-type talents. Those who have already engaged in entrepreneurial activities can be considered entrepreneurial talents. On the other hand, potential individuals with entrepreneurial spirit, skills, and abilities, who have not yet engaged in entrepreneurship, should be referred to as entrepreneurial-type talents. These individuals possess the awareness, knowledge, and skills required for entrepreneurship, and are capable of keenly identifying and effectively seizing entrepreneurial opportunities. Gong Huixiang et al. (2011) noted that, from a broad perspective, there are two types of entrepreneurial-type talents: one is entrepreneurs who can turn knowledge and technology into tangible economic benefits, and the other is those who have not actually engaged in entrepreneurship but possess entrepreneurial spirit, skills, and abilities, as well as capabilities in interpersonal communication, technology development, and organizational management.

In summary, entrepreneurship includes the establishment of new enterprises as well as secondary entrepreneurial activities within existing companies. Therefore, individuals who create new businesses and entrepreneurs with entrepreneurial spirit can both be considered entrepreneurs.

Carton, R. B., Hofer, C. W., & Meeks, M. D. (1998) discussed in detail the role of entrepreneurs in society and provided operational definitions of entrepreneurial traits. They pointed out that successful entrepreneurs typically possess the following key traits: innovation ability, risk tolerance, self-motivation, leadership skills, and adaptability.

Diandra, D., & Azmy, A. (2020) explored the definition of entrepreneurship and conducted an in-depth analysis of the characteristics of entrepreneurs. They pointed out that successful entrepreneurs typically possess a range of key traits,

including innovation ability, risk tolerance, self-motivation, and leadership skills. These traits enable entrepreneurs to identify and seize market opportunities, driving the development and growth of their enterprises.

Filion, L. J. (2021) believes that in addition to innovation ability, risk tolerance, self-motivation, and leadership skills, entrepreneurs should also possess adaptability. Understanding and cultivating these traits are crucial for supporting and developing future entrepreneurs.

McKenzie, B., Ugbah, S. D., & Smothers, N. (2007) explored the role of entrepreneurs in the entrepreneurial process, emphasizing the importance of individual-level traits in entrepreneurship. Venture capitalists often focus on certain behavioral characteristics of entrepreneurs when evaluating entrepreneurial proposals, highlighting the significance of entrepreneurs in the creation and future development of enterprises.

Prince, S., Chapman, S., & Cassey, P. (2021) argue that entrepreneurship should not be viewed merely as a manifestation of a set of fixed traits, but rather as a complex process involving the interplay of individual, environmental, and behavioral factors. The authors emphasize that existing literature often oversimplifies the definition of entrepreneurial traits, when in reality, the behavior and success of entrepreneurs are influenced by a variety of factors, including personal motivation, socio-cultural background, and economic conditions.

The perspectives from the aforementioned literature explore the key traits of entrepreneurs and analyze their roles in society and the economy. The literature generally agrees that successful entrepreneurs typically possess traits such as innovation ability, risk tolerance, self-motivation, and leadership skills, which enable them to identify and exploit market opportunities, thereby driving business development. Additionally, adaptability is also seen as a crucial trait for entrepreneurs, helping them to cope with rapidly changing market conditions.

However, Prince and others have pointed out that traditional definitions of entrepreneurial traits are often oversimplified. In reality, entrepreneurship is a complex process involving the interaction of personal, environmental, and behavioral factors. They emphasize that the success of entrepreneurship is influenced by a variety of

factors, including personal motivation, socio-cultural background, and economic conditions.

Based on these discussions, we can propose a new perspective: While certain core traits are essential for entrepreneurial success, assessing an entrepreneur's potential should involve a more comprehensive view, considering various factors beyond individual traits. For example, the level of support within the entrepreneurial ecosystem, ease of market access, and societal and cultural support for innovation and entrepreneurial spirit are all important factors that affect entrepreneurial success.

3.2 The key traits of an entrepreneur

The successful execution of entrepreneurial activities relies on the integration of various resources, including human capital, social capital, and organizational capital, among others. Among these, entrepreneurs, as a form of human capital, fundamentally determine whether entrepreneurship can achieve success. The personal qualities and characteristics of entrepreneurs directly influence entrepreneurial activities and their performance. Consequently, both domestic and international research on entrepreneurship has largely centered around the characteristics and qualities of entrepreneurs, yielding significant results.

In fact, foreign scholars began researching the qualities and characteristics of entrepreneurs as early as the 18th century. They extensively explored and dissected various concepts related to entrepreneurship from different perspectives. Looking at related research, foreign scholars and experts tend to define entrepreneurs using various qualities and characteristics, conceptualizing them. The term qualities refers to the potential characteristics of individuals that are causally linked to benchmarked outcomes. Specifically, qualities refer to the latent characteristics of individuals that differentiate those who excel from those who perform at an average level in a particular job.

For instance, Harvard University professor McClelland (1973) introduced the concept of qualities based on extensive empirical research, referring to potential characteristics of individuals that have causal connections with reference standards. Qualities, in this context, refer to the deep-seated characteristics that can distinguish individuals who excel in a particular job from those who perform at an

average level. French economist Richard Cantillon (1755) first introduced the term entrepreneur and defined it as someone who dares to venture into creating a new business and is willing to take responsibility. French economist Say (1800) provided a clear definition of entrepreneurs, describing them as agents who coordinate the relationship between capital and labor in economic activities and as individuals who create an enterprise or business. Frank Knight (1921) attributed the role of uncertainty decision-makers to entrepreneurs, asserting that entrepreneurs must bear the risks associated with the uncertainty of entrepreneurship.

In 1992, a research department in the United States conducted a survey involving thousands of top-level managers and executives of enterprises to investigate the qualities and competencies required of entrepreneurs. The survey identified the top 20 most important qualities and competencies and ranked them in order of importance, as shown in the table below:

Table 2.1 Entrepreneurs should have 20 qualities and abilities

1) Financial management experience and ability	11) Industry and technical knowledge
2) Communication and interpersonal skills	12) Leadership and management skills
3) The ability to motivate subordinates	13) Ability to cultivate and select subordinates
4) Vision and insight	14) Ability to build relationships with key clients
5) Self-motivation and self-breakthrough	15) Creativeness
6) Decision-making and planning skills	16) Organizational ability
7) Marketing capability	17) Delegate capabilities to subordinates
8) The ability to build relationships	18) Personal adaptability
9) The level of personnel management	19) Work efficiency and time management level
10) Ability to form a good corporate culture	20) Technology development trend forecasting ability

Numerous scholars from various disciplines such as economics, management, psychology, and sociology have conducted in-depth research on the qualities of entrepreneurs from their respective perspectives. For example, Schumpeter (1934) asserted that the essence and means of entrepreneurship are innovation, and entrepreneurial activities are aimed at achieving innovation. Therefore, entrepreneurs are fundamentally innovators who bear the responsibility of innovatively combining production factors.

Hornaday & Bunker (1970) explored the characteristics that a successful entrepreneur should possess from a psychological perspective in their publication Personnel Psychology. Kirzner (1978), drawing from both economic and psychological viewpoints, argued that only individuals with a sensitivity to profitable market opportunities are true entrepreneurs, while ordinary individuals lack this sensitivity. Drucker (1985) conducted research indicating that entrepreneurship is an action, not a personality trait, and that anyone who dares to make decisions has the potential to develop an entrepreneurial spirit and become an entrepreneur through learning.

Woodward (1988), taking a micro-level perspective, investigated the social networks of entrepreneurs and pointed out that the characteristics of an individual's social network can increase the likelihood of establishing a new enterprise. When entrepreneurs can fully and timely access the resources they need through their social networks, the probability of success increases. Therefore, many successful entrepreneurs invest a significant amount of time in building their personal social networks to facilitate the development of their new ventures.

Stevenson et al. (1994) emphasized the importance of management in entrepreneurship, stating that the entrepreneurial process is essentially a management process. Thus, the management competence of an entrepreneur plays a significant role in determining entrepreneurial success. Begley (1995) conducted research that identified unique characteristics of small business entrepreneurs compared to regular managers based on factors like company growth rates, founder status, and the age of the company. This provided a basis for distinguishing entrepreneurs from a large pool of managers.

Chen, Greene & Crick (1998) developed a self-perception ability model for entrepreneurs that could predict the probability of an individual becoming an entrepreneur, thereby distinguishing entrepreneurs from managers. Markman & Baron (2003) drew from the person-organization fit theory and introduced a unique Person-Entrepreneur Fit model. They believed that the higher the match between an individual's personality traits and the personality requirements of an entrepreneur, the more likely they are to succeed in entrepreneurship. By analyzing various distinctive characteristics of entrepreneurs, they identified several key influencing factors, including strong determination, self-perception ability, opportunity recognition skills, outstanding social skills, and a wealth of human and social capital.

In recent years, experts and scholars have gained a deeper understanding of the qualities of entrepreneurs. Deakins & Freel (2009) view entrepreneurs as organizers of business resources and production factors, acting as catalysts for economic change. More recently, Minitti (2010) proposed that the behavior of entrepreneurs is influenced by both individual characteristics and socio-economic factors. Therefore, the definition of entrepreneurs should encompass both aspects. Minitti's perspective injected fresh ideas into the study of entrepreneurial qualities.

It's evident that foreign experts and scholars hold diverse views on the qualities of entrepreneurs, indicating both their emphasis on researching entrepreneurial qualities and the differences in their understanding of the concept of entrepreneurs.

Furthermore, some scholars have conducted related research from the perspective of entrepreneurial competence. For example, McClelland (1987) emphasized the importance of the competence of entrepreneurs or entrepreneurial teams, suggesting that competence has a significant impact on their ability to gain a competitive advantage and achieve sustained entrepreneurial performance. Chandler & Hanks (1994) introduced the concept of entrepreneurial competence, defining it as the ability of entrepreneurs to identify, foresee, and exploit opportunities. This competence is considered a core competency of entrepreneurship and continues to improve as entrepreneurs become more familiar with the market. Bird (1992) proposed that entrepreneurial competence is a high-level comprehensive characteristic of

entrepreneurs, which includes personality traits, knowledge, and skills. Factors such as an entrepreneur's family background, accumulated experience, and training can influence their entrepreneurial competence.

Man & Chan (2002) argued that entrepreneurial competence includes not only high-level personal characteristics, knowledge, and skills but also all the entrepreneurial abilities that entrepreneurs need to successfully execute their work within an organization. Man conducted an empirical review of the literature on entrepreneurial competence and combined it with in-depth interviews with entrepreneurs. He proposed a competence model consisting of six aspects: conceptual competence, organizational competence, opportunity competence, strategic competence, relational competence, and commitment competence. This competence model has been widely applied in practice and validated across various cultural contexts.

Xin Baoping et al. (2005) conducted in-depth surveys of thousands of domestic entrepreneurial companies in China and identified the Top 10 Qualities of Chinese Entrepreneurs based on the richness of their samples. These qualities, ranked by importance, include entrepreneurial desire, perseverance, vision, networking, foresight, sensitivity, social connections, strategy, courage, and self-reflection ability.

Brage (2005), focusing on the collection of information by venture capital firms when assessing entrepreneurs, emphasized the importance of honesty, responsibility, diligence, judgment, and entrepreneurial spirit in evaluating entrepreneurs' qualities. He also proposed risk prevention measures for assessing entrepreneurial qualities, such as staged investment, active involvement in management with prior supervision, selection of appropriate investment tools, and determining suitable equity ratios.

Huang Jiangbo and Chen Shama (2006) explained the mechanisms that inspire the entrepreneurial motivation of young successful entrepreneurs from a sociological perspective, using the theory of behavioral motivation. They identified common characteristics and qualities among high-achieving individuals with high achievement motivation, including a strong drive for challenges, a strong desire for success, a creative and innovative mindset, and a strong sense of social responsibility,

among others. They also summarized the successful entrepreneurial experiences of these individuals.

3.3 The entrepreneurial ability model

Yao Xiaofang and Long Dan (2008) developed a quality model for technology-based entrepreneurs, consisting of four dimensions: basic qualities, thinking qualities, general competence qualities, and core competence qualities.

Zhang Xiangmin (2008) proposed that entrepreneurial talents should possess specific knowledge in a particular field, knowledge of entrepreneurship, market economic theory and knowledge, management theory and knowledge, as well as legal knowledge. They should also have teamwork awareness, innovative and creative spirit, adaptability, independent work capabilities, problem-solving skills, and a sense of social responsibility.

Mao Cuiyun et al. (2009) defined entrepreneurial qualities as the unique characteristics and abilities that entrepreneurs possess to achieve successful entrepreneurship. These qualities encompass an entrepreneur's internal psychological qualities, entrepreneurial skills, and basic knowledge in entrepreneurship.

Some scholars have also explored the entrepreneurial competence of university students. For example, Yang Guifang (2008) proposed that entrepreneurial university students should possess qualities in several areas, including ideological consciousness, psychological qualities, knowledge levels, and practical abilities. Yu Kefa (2008) suggested that university student entrepreneurs need five key qualities: entrepreneurial mindset, resource acquisition and integration abilities, entrepreneurial awareness and spirit, learning and innovation abilities, as well as knowledge related to business operations and product market development. Peng Lu (2008) conducted a survey of university students and proposed a model of entrepreneurial qualities, consisting of five dimensions: entrepreneurial qualities, spirit, awareness, abilities, and environmental control.

Additionally, some scholars have delved into the competence of entrepreneurs. For instance, Zhang Wei and Wang Chongming (2004), based on previous research results, expanded the dimensions of entrepreneurial competence by adding emotional competence and learning competence. They proposed an

entrepreneurial competence model comprising eight dimensions, as shown in the table below:

Table 2.2 8 dimensions of entrepreneurial ability model

Number	Entrepreneurial Competence	Dimension Characteristics
1	Opportunity Ability	The ability to identify and nurture market opportunities through various means.
2	Relationship Ability	The ability to interact with individuals and organizations, including establishing cooperation and trust through contracts or social relationships, communication and persuasion skills, and interpersonal skills.
3	Conceptual Ability	Reflects the conceptualization abilities in entrepreneurial behavior, including decision-making skills, benchmark analysis, mastering complex information, risk-taking, and innovation.
4	Organizational Ability	The ability to organize internal and external resources (people, finances, materials, and technological resources) of a business, including team building, leading subordinates, training, and monitoring skills.
5	Strategic Ability	The ability to set, evaluate, and implement company strategies.
6	Commitment Ability	The ability to drive entrepreneurship for sustainable operation.
7	Emotional Ability	The ability to understand personal emotional characteristics and effectively manage personal emotions when interacting with others or in stressful situations.
8	Learning Ability	The ability to actively learn from one's own experiences, the experiences of others, and key events, and to change one's behavior accordingly.

Zhong Lifeng and Shi Kan (2004), using the Key Behavioral Event Interview method, identified the competence characteristics of senior management personnel in Chinese family-owned enterprises. These characteristics specifically include self-efficacy, initiative, organizational orientation, opportunity recognition, leadership ability, information exploration, proactive learning, authoritative guidance, self-control, benevolence and care, and the ability to influence others.

Wang Fen and Ju Xiaoling (2007) argued that entrepreneurship is a process rather than a single event, comprising three stages: opportunity identification, opportunity development, and outcomes. Entrepreneurial competence includes eight aspects: opportunity, relationships, concept, organization, strategy, commitment, emotions, and learning.

Wang Hongjun and Chen Jin (2007), through empirical research involving questionnaires with technology entrepreneurs, developed a model of entrepreneurial competence for technology entrepreneurs. This competence model consists of eight elements: concept, commitment, opportunity, organization, strategy, relationships, emotions, and learning.

Ma Hongmin and Li Fei (2008), by analyzing the concept of entrepreneurial team competence, dimensional characteristics, the relationship between entrepreneurial team competence and entrepreneurial performance, and factors influencing the entrepreneurial environment, proposed a model depicting the characteristics and dimensions of entrepreneurial team competence and its relationship with entrepreneurial performance.

Mu Zhirong (2008) explored the competence characteristics of university student groups, dividing them into two parts: entrepreneurial qualities and entrepreneurial skills.

Li Mingzhang and Dai Jilin categorized university students' entrepreneurial competence into three dimensions: emotional competence, attitude, and professional knowledge.

Pu Qingping and Lv Peng (2011), using content analysis, revealed the characteristics of entrepreneurial competence among Chinese university students. These characteristics mainly include innovation, opportunity awareness, persistence, teamwork, knowledge and skills, honesty and integrity, and entrepreneurial intention.

Zeng Yuan and Hu Mingshan (2011) believed that university students' entrepreneurial qualities consist of four dimensions: entrepreneurial spirit, entrepreneurial knowledge, entrepreneurial ability, and entrepreneurial psychological traits.

4. Essential Elements of Enterprises

4.1 Definition and Classification of Enterprises

Osvalds, G. (2001) explored an enterprise is an organized system that includes both technical systems and organizational structures. It aims to integrate various aspects such as customer needs, systems engineering considerations, and enterprise-wide information to guide the design and operation of systems within the organization. Enterprise Architecture plays a crucial role in this process by providing frameworks and methodologies to develop and maintain architectural models that comprehensively describe the enterprise's elements and relationships.

McAfee, A. (2008) redefined the concept of enterprise by defining Enterprise 2.0 as the integration of online social networks and collaborative technologies into a company's business processes. Its purpose is to flatten and democratize communication between the company and its customers, partners, and employees.

The definition of enterprise types varies across different countries, influenced by each nation's legal system, economic development, and cultural background. In places like Europe and America, common types of enterprises include sole proprietorships, partnerships, limited liability companies, and corporations, each offering varying levels of financial protection and tax benefits. In China, the types of enterprises such as individual proprietorships, partnerships, limited liability companies, and joint-stock companies similarly reflect different approaches to handling risks, liabilities, and taxation. Understanding these fundamental classifications of enterprises aids entrepreneurs and investors in better strategic planning and decision-making, both domestically and internationally.

4.2 The Essential Elements of Enterprises

According to Henry Mintzberg (1989), the structure of an enterprise comprises five key elements: the strategic apex (top managers), middle line (middle management), operating core (basic operations staff), technostructure (experts optimizing workflows), and support staff (personnel providing indirect support services). These components form the fundamental framework of an organization, ensuring effective coordination and integration among various parts.

Galbraith, J. (1973) identifies five critical elements integral to the structure of complex organizations: strategy, structure, processes, rewards, and people. He highlights the need for alignment among these elements to enhance strategic adaptability and efficiency within organizations (Galbraith, 1973). This approach facilitates organizational responses to environmental changes and aids in achieving strategic goals effectively.

In his 1954 book, Drucker, P. (1954) outlined that the structure of an enterprise should include the following elements: objectives, organization, management, communication, and decision-making processes. Drucker emphasized the importance of setting clear objectives and believed that effective management should be based on these objectives and efficient communication mechanisms. He also suggested that the success of an enterprise depends on the capability of its management and the efficiency of the organization's decision-making processes.

4.3 Key Success Factors for Enterprises

According to the article published in Sustainability (2020), the key factors for business success encompass institutional development, technology and knowledge, consumer agency, market structure, funding, resources and infrastructure, as well as training and education. These elements are crucial for growth and development in the bioeconomy sector.

Sevilla-Bernardo, J., Sanchez-Robles, B., & Herrador-Alcaide, T. C. (2022) discovered through research that successful entrepreneurial ventures rely on several key factors, including creativity, CEO leadership, an effective business model, marketing strategies, and the composition and capabilities of the team. These factors collectively determine the success or failure of entrepreneurial projects.

This section primarily explores the fundamental elements and key success factors of enterprises. According to various scholars and studies, the structure of an enterprise includes technical systems and organizational structures, aiming to integrate aspects such as customer needs, systems engineering considerations, and enterprise-wide information to guide the design and operation of systems within the organization. Enterprise Architecture plays a crucial role in this process by providing frameworks and methodologies to develop and maintain architectural models that describe the enterprise's elements and relationships comprehensively.

Focusing on the elements of enterprise structure, Henry Mintzberg suggests that an enterprise consists of five key elements: the strategic apex (top managers), middle line (middle management), operating core (basic operations staff), technostructure (experts optimizing workflows), and support staff (personnel providing indirect support services). These components form the foundational framework of an organization, ensuring effective coordination and integration among various parts. Moreover, Galbraith emphasizes the need for alignment among five critical elements—strategy, structure, processes, rewards, and people—to enhance the organization's strategic adaptability and efficiency.

Regarding the key success factors for enterprises, research indicates that creativity, CEO leadership, an effective business model, marketing strategies, and the composition and capabilities of the team are crucial determinants of entrepreneurial project success or failure. Additionally, from a broader perspective, institutional development, technology and knowledge, consumer agency, market structure, funding, resources, and infrastructure, as well as training and education are also essential for business success.

Although these theories provide a broad perspective on business success, in practical application, enterprises need to flexibly adjust these principles to adapt to the constantly changing global market and technological environment. For instance, in today’s increasingly digital and networked world, enterprises may need to place greater emphasis on the role of information technology and cybersecurity, as well as on cross-cultural management capabilities in a globalized context. These new

challenges and demands may prompt updates and expansions to the existing business models and success factors.

Concept of Training

1. Significance

According to Al-Kassem, A. H. (2021), systematic training and development programs have a significant impact on enhancing employee skills, improving work efficiency, and promoting overall organizational performance. Effective training enhances employees' professional capabilities and innovative thinking, thereby directly influencing the organization's competitiveness and market performance. Training and development activities should not only focus on skill enhancement but also include fostering leadership and improving teamwork capabilities.

2. Importance

Karim (2012)’s research indicates that systematic training followed by performance evaluation significantly enhances employee job performance and overall business outcomes. Through targeted training, employees gain necessary skills and knowledge to better adapt to job demands and business changes. To maximize training effectiveness, organizations should conduct regular training needs analysis, implement outcome-based training, and adopt continuous evaluation and feedback mechanisms to ensure return on training investment.

Training is crucial for both organizational and individual growth. It not only enhances employee skills and increases work efficiency but also improves employee satisfaction and retention rates, helping businesses maintain competitiveness. Through systematic training, employees can better adapt to ever-changing job demands. Moreover, training assists organizations in compliance with regulations, risk management, and fosters innovation and teamwork. In summary, training serves as a bridge to drive mutual progress between organizations and employees, making it a key strategy for achieving long-term success.

3. Training modes

Hynes, B. (1996) points out that entrepreneurial training can adopt various modes, including classroom teaching, practical projects, case studies, entrepreneur lectures, and interdisciplinary collaboration. These diverse training methods can effectively develop students' entrepreneurial skills and innovative thinking, helping them identify and seize entrepreneurial opportunities in different fields. Particularly through practical projects and interdisciplinary collaboration, students can apply their knowledge in real-world settings, enhancing their ability to solve actual problems. Adopting diverse training modes not only enhances students' entrepreneurial skills but also stimulates their creativity and entrepreneurial spirit.

Han, G. (2022) argues that to effectively cultivate entrepreneurial talent, diverse training modes must be adopted. These modes include case-based teaching, simulation training, corporate internships, and interdisciplinary projects. Through case-based teaching, students can learn from both successful and failed entrepreneurial examples, understanding the critical decision points in the entrepreneurial process. Simulation training and corporate internships provide practical experience, allowing students to apply their knowledge in real-world settings. Interdisciplinary projects encourage students to think from different disciplinary perspectives, fostering their ability to solve complex problems comprehensively.

Rao, V., & Joshi, H. G. (2010) suggest that in addressing the growing unemployment problem in India, providing entrepreneurial training through distance education is an effective strategy. The distance training model is flexible and cost-effective, capable of reaching a wide range of learners, especially those unable to participate in traditional classroom training. Distance mode entrepreneurial training provides learners with the necessary knowledge and skills. This training model includes online courses, virtual lectures, interactive seminars, and digital learning resources, aiming to cultivate learners' creative thinking, design abilities, and business management skills.

4. Training plans

Katz, J. A. (2014) points out that successful entrepreneurial training programs need to comprehensively consider various factors, including curriculum design, teaching methods, practical opportunities, and evaluation mechanisms. Training programs should combine theoretical knowledge with practical application through diverse teaching methods such as case analysis, simulation exercises, entrepreneur lectures, and entrepreneurial projects to help learners fully understand the entrepreneurial process. The research also emphasizes that training programs should provide ample practical opportunities, such as internships, entrepreneurship competitions, and interdisciplinary projects, to encourage learners to apply what they have learned in real-world situations.

Klofsten, M. (2000) details the key elements of designing and implementing entrepreneurial training programs in a university environment. Klofsten points out that a successful entrepreneurial training program should include multi-level course design, ranging from basic theory to advanced applications, to meet the needs of different students. The training program should not only provide the transmission of entrepreneurial knowledge but also focus on developing practical skills. Specific methods include case studies, simulated entrepreneurial projects, entrepreneur lectures, and actual entrepreneurial practice.

Azim (2015) points out that an effective entrepreneurial training program should comprehensively combine theoretical knowledge with practical experience to fully enhance learners' entrepreneurial capabilities. The training program should include the following core elements: foundational theory courses, hands-on exercises, case analysis, entrepreneurship competitions, and mentor guidance. Foundational theory courses help learners grasp basic entrepreneurial concepts and management skills; hands-on exercises and case analysis provide opportunities to solve real business problems in authentic environments; entrepreneurship competitions stimulate innovative thinking and competitive spirit; and mentor guidance offers personalized advice and feedback to help learners continuously improve. The training program should be flexibly adjusted to meet the diverse needs and backgrounds of learners, thereby achieving optimal training outcomes.

5. Learning and Skill development

Shiel, M. (2005) explores the relationship between leadership, learning, and skill development. Shiel points out that leadership development is closely tied to continuous learning and skill enhancement. Effective leaders need to possess solid professional knowledge and management skills, and they must also engage in ongoing learning to adapt to the ever-changing organizational environment and challenges.

Jackson, D. (2015) asserts that work-integrated learning (WIL) plays a significant role in enhancing students' employability skills but also faces numerous challenges in its implementation. Effective skill development requires combining theoretical learning with practical work experience, providing students with real-world environments to apply and reinforce their knowledge. The main obstacles WIL encounters include a lack of employer engagement, a disconnect between academic learning and practical application, and insufficient resources and support. Jackson offers several best practice recommendations, such as strengthening collaboration between academic institutions and businesses, designing flexible and practical curricula, providing ongoing guidance and feedback, and creating a supportive learning environment.

6. Human resource development

The origins of human capital theory can be traced back to the 18th century. As early as 1776, Adam Smith, the founding figure of modern economics, pointed out in his seminal work An Inquiry into the Nature and Causes of the Wealth of Nations that the knowledge and skills individuals acquire through learning should be considered a part of their personal capabilities and also regarded as a component of societal wealth, constituting an integral part of the social fixed capital. However, following Adam Smith, only a few economists continued to explore this line of thought. Most, while recognizing labor (or human labor) as a factor of production alongside land and capital, still considered human beings as non-capital, restricting the concept of capital to non-human factors. It wasn't until the mid-20th century, with advancements in technology and high levels of productivity, that some economists began to systematically study human capital. Among them, Theodore W. Schultz, in his influential book Investment in Human Capital (1996), asserted, It is found that human

capital is the product of social organization and individual investment, and its quality depends entirely on the amount invested.

Human capital refers to the knowledge, skills, and abilities embodied in laborers. Schultz argued that capital can be divided into two aspects: human capital and physical capital. They share similarities in that both are formed through investment. However, they also differ; human capital, in contrast to physical capital, possesses characteristics such as high efficiency, a lagged effect, multiple effects, indirect effects, and easy transferability. Furthermore, ownership of human capital is generally not as transferable as that of physical capital. Human capital represents an investment in the quality of the population, with education being a crucial avenue in its formation.

Most experts in the West assert that education is a productive investment that plays a pivotal role in economic growth. This is because the key to economic growth lies in improving the quality of the workforce, which significantly enhances labor productivity. Education is the primary means to achieve this goal. They argue that the inherent abilities of populations and labor forces in different countries tend to be balanced and similar. However, disparities in the acquired abilities, which depend largely on postnatal development, lead to significant differences in the quality of the workforce among nations. These disparities in human capital primarily manifest as knowledge, skills, cultural refinement, entrepreneurial spirit, and creativity, all of which are closely intertwined with education. The knowledge and skills acquired through education represent a vital form of capital.

Based on the literature, systematic training and development programs have a significant impact on enhancing employee skills, work efficiency, and overall organizational performance. Effective training not only focuses on skill enhancement but also includes the cultivation of leadership and teamwork capabilities. Adopting diverse training modes, such as case-based teaching, simulation training, and corporate internships, can better meet the needs of different learners and integrate theory with practice. Additionally, leadership development is closely tied to continuous learning and skill enhancement, and work-integrated learning (WIL) plays a significant role in improving students' employability skills. Human capital theory emphasizes the crucial

role of education in forming a high-quality workforce, with the knowledge and skills acquired through education being an important form of capital.

With the rapid development of artificial intelligence and automation technologies, future training programs need to focus more on the cultivation of digital skills and technological literacy. Companies should incorporate emerging technologies such as programming, data analysis, and artificial intelligence into their training content, while also providing immersive training tools like virtual reality (VR) and augmented reality (AR) to adapt to the fast-changing modern work environment. This approach not only enhances employees' technical abilities but also increases their flexibility and competitiveness in future job markets.

Concept of Elements of Entrepreneur Training

1. Entrepreneur Training

1.1 The concept of entrepreneur training

Entrepreneur training is a form of training that focuses on cultivating innovative spirit and creative abilities, with the primary goal of nurturing creative talents.

The concept of entrepreneur training originated primarily in Western developed countries, where it emphasizes individual independence, proactiveness, and creativity. The awareness of entrepreneurship and practical aspects of entrepreneurship are also quite strong in Western developed countries. The concept of entrepreneur training was introduced to China in the late 1980s. In 1989, during the Facing the 21st Century Training International Symposium held by UNESCO in Beijing, the concept of entrepreneurial spirit and exploration training was first proposed and later translated as entrepreneur training. This concept can be defined as follows: first, it involves training individuals in activities and processes related to planning, enterprises, and business; second, it involves training psychological qualities such as entrepreneurial spirit, initiative, exploratory spirit, and risk-taking, which are essential for entrepreneurship (Wang Xianping, 2005). UNESCO defines entrepreneur training as follows: entrepreneur training, broadly speaking, refers to the cultivation of individuals with innovative capabilities. It is equally important for employees because employers

and individuals not only require employees to achieve success in their careers but also increasingly value employees' pioneering and adventurous spirit, entrepreneurship, independent work capabilities, as well as technical, social, and management skills.

In 1995, UNESCO elaborated a comprehensive concept of entrepreneur training in its Policy Document on Reforms and Development in Higher Training. It stated that entrepreneur training includes two aspects: job-seeking and creating new positions. In October 1998, during the World Conference on Higher Training, the World Declaration on Higher Training for the 21st Century: Vision and Action was adopted, further emphasizing that higher training should focus primarily on cultivating entrepreneurial skills and an entrepreneurial spirit. Graduates will no longer be merely job-seekers but will primarily become creators of job positions. At the Second International Vocational Training Conference held in Seoul in April 1999, UNESCO not only reiterated the importance of entrepreneur training but also emphasized the significance of entrepreneurial ability. In the main conference document, it stated, In order to meet the new challenges and changes of the 21st century, training and vocational training processes must be innovative, including entrepreneurial abilities. This ability is equally important for wage earners and those who are self-employed (Qu Dianbin, 2007).

China officially adopted the concept of entrepreneur training in its Education Revitalization Plan for the 21st Century, announced in January 1999. The plan called for strengthening entrepreneur training for teachers and students, encouraging them to independently establish high-tech enterprises. In 1999, the Central Committee of the Communist Youth League organized the first Challenge Cup National University Student Entrepreneurship Program Competition, which has since been widely held throughout the country. In January 2000, the Ministry of Education issued regulations stating that university students and postgraduates (including master's and doctoral students) could take a leave of absence while retaining their student status to establish high-tech enterprises. In early 2002, the Ministry of Education's Higher Education Department initiated entrepreneur training pilot programs at nine universities in China. These developments demonstrate that entrepreneur training has

garnered significant attention both nationally and internationally. Scholars from around the world have provided various typical definitions.

The Kaufman Foundation, a renowned entrepreneur training research institution in the United States, offers a practical definition of entrepreneur training: entrepreneur training is a process that imparts to trainees the concepts and skills to identify opportunities that others overlook and have the insight and confidence to act when others hesitate. Training content includes opportunity recognition in the face of risks and creating a business under the premise of resource integration, as well as introducing the enterprise management process, such as business planning and marketing (Shen Zhifang, 2007).

Zhou Qiujiang (2009) suggests that entrepreneur training, broadly speaking, aims to develop individuals with innovative capabilities. It enhances students' qualities and entrepreneurship abilities through a comprehensive curriculum, equipping them with pioneering spirit, adventurous spirit, entrepreneurship qualities, independent working ability, technical, social, and management skills. In a narrow sense, entrepreneur training in universities mainly targets student entrepreneurship and the cultivation of students' ability to establish businesses.

Xiong Lihang (2007) defines entrepreneur training broadly as a training philosophy and practice aimed at developing and improving the basic entrepreneurship qualities of university students, nurturing high-quality socialist modernization builders with innovative spirit and entrepreneurship abilities. In the field of higher training, entrepreneur training incorporates the essential requirements of entrepreneurship qualities into the foundation of university quality training, with unique functions and systems. Its main goal is to raise students' awareness and ability to engage in entrepreneurship, with the essence being to cultivate students' establishment of entrepreneurship awareness, the formation of initial entrepreneurial capabilities, and the mastery of basic skills.

Xu Shenglin (2013) defines entrepreneur training as the training of entrepreneurial spirit. He points out, entrepreneur training is not just about cultivating entrepreneurs; it is about teaching students how to independently acquire and create

new knowledge, effectively allocate their resources, and transform knowledge into tangible personal and social value, ultimately maximizing the utility of knowledge.

Zhang Chuang (2007) suggests that entrepreneur training, concerning young university students with certain scientific and cultural knowledge and vocational skills, aims to develop their entrepreneurship awareness, innovative spirit, entrepreneurial psychological qualities, and entrepreneurial skills. It guides them toward the path of self-entrepreneurship, creating employment opportunities and social wealth, and ultimately cultivating creative and pioneering talents for society.

In summary, this study defines entrepreneur training in higher education as follows: entrepreneur training is the training of high-quality socialist modernization builders with innovative spirit and entrepreneurship abilities, aimed at developing and enhancing the basic entrepreneurship qualities of university students. In the field of higher training, entrepreneur training incorporates the essential requirements of entrepreneurship qualities into the foundation of university quality training, with unique functions and systems. Its main goal is to raise students' awareness and ability to engage in entrepreneurship, with the essence being to cultivate students' establishment of entrepreneurship awareness, the formation of initial entrepreneurial capabilities, and the mastery of basic skills.

1.2 The essence of entrepreneur training

There are different understandings of the essence of entrepreneur training in the academic community. In the Philosophy of Training for the 21st Century presented in the conference report of the International Symposium on Education for the 21st Century held by UNESCO in Beijing in late November and early December 1989, entrepreneur training is described as the third passport for learning It emphasizes the issue of an entrepreneurship competency passport and calls for elevating entrepreneurship competency training to the same status as academic and vocational training passports.

Many experts and scholars have put forth various viewpoints, as discussed earlier. At its core, the author believes that entrepreneur training, also known as entrepreneurial training or self-employment-oriented training, is a form of training that cultivates and enhances people's survival skills. It is an extension and expansion

of the traditional concept of employment education in response to the increasingly severe issue of unemployment in the socio-economic context (Lu Lihua, 2006).

1.3 The Functions of entrepreneur training

The task of entrepreneur training is to reveal the objective laws of entrepreneurship, its characteristics, and essence. It introduces basic knowledge and skills related to entrepreneurship, helps students understand the significance of entrepreneurship, instills entrepreneurial awareness, fosters an entrepreneurial spirit, and updates their employment concepts. The aim is to encourage students to take action, be innovative, dare to face both success and failure, and venture into the world of entrepreneurship as potential entrepreneurs.

The goals of entrepreneur training are as follows:

Enhancing Basic Entrepreneurial Qualities: Entrepreneurial qualities encompass a wide range of attributes, including physical and intellectual qualities, non-intellectual qualities, knowledge, cultural level, learning ability, practical skills, observation skills, problem-solving skills, innovation, creativity, interpersonal skills, influence, management abilities, and personal characteristics. These qualities collectively define an individual's entrepreneurial abilities. Entrepreneurial qualities play a pivotal role in determining the level, quality, and effectiveness of business outcomes.

Transforming Employment Concepts and Fostering Entrepreneurial Awareness: Traditionally, many students have pursued stable, high-paying employment opportunities, influenced by the traditional belief that one should excel in academics to secure a good job. With the shift from elite training to mass training in China's higher education system, traditional employment concepts are being challenged. entrepreneur training helps students understand society and themselves, comprehend the current employment situation and labor market, cultivate proper career selection and entrepreneurial mindsets, and prepare psychologically for entrepreneurship.

Contributing to Economic Growth and Social Development: entrepreneur training not only benefits the development of entrepreneurial talent but also plays a crucial role in elevating the overall entrepreneurial competence of society. Research

indicates that societies with higher levels of entrepreneur training tend to have more flexible employment, higher levels of entrepreneurship, and better social and economic outcomes. Rapidly developing entrepreneurial talent can boost material and cultural standards of living while propelling social prosperity and progress. Entrepreneurial activities are seen as a driving force behind economic growth and development in knowledge-based economies, as observed in the United States.

Improving the Composition of Entrepreneurs and Economic Industry Structures: Economic growth naturally results in structural changes, and these changes drive further economic growth. The development of society depends on its people, and the development of the economy, industrial structures, and social structures require human impetus. Entrepreneurs, as leaders and core labor forces, exert significant influence on economic and industrial structures. entrepreneur training influences the quality of entrepreneurs, which, in turn, affects the composition of entrepreneurs and other economic factors. Training needs to serve both economic development and adapt to it. In essence, entrepreneur training molds the labor force structure, affecting other factors and economic and industrial structures.

Developed countries have identified nine key architectures closely related to entrepreneurial success: government policies, training and development, financial support, cultural and social norms, R&D transfers, government programs, business and professional infrastructure, physical infrastructure, and openness of internal markets. Among these, government policies, training and development, and financial support are the top three most crucial factors in entrepreneurship success across 20 surveyed countries. This underscores that entrepreneur training is one of the most critical factors affecting entrepreneurial success.

2. Elements of Entrepreneur Training

2.1 Training objectives

The expected outcomes or goals of entrepreneurial training, including the enhancement of knowledge, skills, and qualities, aiming to better adapt to the entrepreneurial environment.

Poizat, G., Durand, M., & Theureau, J. (2016) discussed the application and challenges of activity analysis in defining training objectives. Their research points out that by conducting a detailed analysis of work activities themselves, training needs and objectives can be more precisely defined, thus enhancing the effectiveness of training. The study emphasizes the importance of activity analysis in revealing implicit knowledge and skill demands, which is crucial for designing targeted training programs.

In his research, Wickramasinghe, V. M. (2006) discusses the relationship between the setting of training objectives and the transfer of training effects. The study highlights that clear training objectives are crucial for the effective transfer of training content in the workplace.

Kraiger, K., & Jung, K. M. (1997) found in their research how to effectively integrate training objectives with training evaluation criteria. Their study indicates that clearly and reasonably setting training objectives is a key step in improving the accuracy of training effectiveness evaluation. By aligning training objectives with specific evaluation criteria, training outcomes can be measured and evaluated more systematically, ensuring that training activities achieve the expected educational and developmental outcomes.

2.2 Training content

Specific topics, courses, or skills covered in training, including market research, business plan writing, etc.

Meyer, K. A., & Murrell, V. S. (2014) found in their research that training content not only focuses on technical operations but also emphasizes the transformation of teaching methods and strategies, aiming to help teachers effectively support and motivate students in virtual environments. Furthermore, these training activities often employ practice-oriented approaches such as workshops, peer learning groups, and case studies to promote teachers' deeper understanding and application of online teaching.

Wentland, D. (2003) points out that effective training content should closely align with the strategic goals of the organization. The training content includes three main aspects: skill enhancement, knowledge transfer, and behavioral change, aimed at enhancing employees' professional capabilities and promoting their contribution to

organizational goals. Additionally, Wentland emphasizes that training design needs to consider factors such as organizational resource constraints, employees' foundational skills, and their career development needs to ensure that the training is both practical and targeted.

Henry, P. (2001) argues that high-quality training content is one of the key factors for successful e-learning. Specific training content includes multimedia instructional materials, interactive learning activities, and personalized learning paths, all aimed at enhancing learning experiences and improving learning outcomes. Effective learning content should not only cover essential professional knowledge but also include elements that promote critical thinking, problem-solving skills, and self-directed learning. Additionally, he mentions that with technological advancements, learning platforms need continual updates and optimization of training content to maintain educational relevance and appeal.

2.3 Training methods

The ways used to impart knowledge and cultivate skills, including classroom training, field visits, case analysis, mentor guidance, etc.

Martin, B. O., Kolomitro, K., & Lam, T. C. (2014) research indicates that effective training methods should be selected based on training objectives, participants' backgrounds, and specific organizational needs. They discuss in detail various methods such as traditional face-to-face training, online learning, simulation training, and blended learning, and compare their effectiveness. The study finds that while each training method has its advantages, blended learning is particularly effective due to its ability to combine the benefits of face-to-face interaction and the flexibility of online learning. Additionally, the article emphasizes the importance of practice and feedback in any training method, highlighting that effective learning often requires continuous adjustment and improvement of training strategies through practical application.

Read, C. W., & Kleiner, B. H. (1996) evaluated various training techniques including case studies, role-playing, lectures, workshops, and simulation games. Their research indicates that while lectures are one of the most commonly used training methods, they are relatively less effective in changing behavior and enhancing skills. In contrast, case studies and role-playing are more effective in promoting learners'

critical thinking and decision-making skills due to their high level of engagement and practicality. Additionally, the study highlights that simulation games and workshops, which provide opportunities for hands-on practice, are particularly suitable for training complex skills and processes.

Clark, R. C. (2019) discusses various effective training techniques, including simulations, interactive learning, problem-solving training, and the importance of feedback. He argues that effective training not only requires attention to the design of training content but also involves selecting appropriate training methods to accommodate the needs of different learners. Additionally, he highlights that digital learning tools and virtual reality, as emerging technologies, can enhance training by adding more interactivity and realism, thereby improving learning outcomes and engagement.

2.4 Instructor or Trainer

The instructor or mentor who imparts knowledge and experience, typically an experienced professional, including on-campus teachers, entrepreneurial mentors, and experienced entrepreneurs.

Attwell, G. (1997) points out that with technological advancements and changes in market demands, teachers and trainers in vocational education and training need to continually update their skills and teaching methods. The research emphasizes that educators and trainers should not only act as knowledge transmitters but also as facilitators of learning, developers of skills, and guides for career development. Additionally, Attwell's educational framework suggests enhancing educators' and trainers' abilities in instructional design, technological application, and cross-cultural communication to adapt to new challenges in vocational education.

Lazar, G. (1993) proposes that teachers and trainers are not just conveyors of language knowledge but crucial roles in inspiring students' critical thinking and creative expression. For teachers and trainers, effectively integrating their own knowledge into the curriculum requires deep subject knowledge, flexible application of teaching strategies, and sensitive insight into student needs.

Mao, J. Y., & Brown, B. R. (2007) argue that in many contexts, while instructor-led training can offer more personalized guidance and immediate feedback, online task support demonstrates unique advantages in enhancing learners' self-directed learning abilities and technical application due to its flexibility and accessibility. Particularly in environments requiring large-scale training and standardized processes, online task support can effectively provide continuous learning resources and assistance without being limited by location and time constraints.

2.5 Training environment

The location and conditions where training activities take place, including on-campus theoretical classrooms, practical training bases, corporate internship bases, etc.

Facteau, J. D., Dobbins, G. H., Russell, J. E., Ladd, R. T., & Kudisch, J. D. (1995) explore how the overall perception of the training environment influences pre-training motivation and perceived training transfer. They point out that a positive and supportive training environment can significantly enhance participants' pre-training motivation and facilitate effective transfer and application of training content. The study provides a detailed analysis of various factors within the training environment, such as the quality of training facilities, relevance of training materials, supportive attitudes of trainers, and interaction among peers, all of which directly impact training outcomes. Additionally, the research finds that when participants perceive organizational commitment to training and receive necessary resources and support, they are more likely to recognize the value of training, leading to increased engagement and application of learned skills in work practices.

Orpen, C. (1999)’s research shows that various aspects of the training environment, such as the comfort of facilities, modernity of technology, relevance of training materials, and interaction style of trainers, directly influence learners' motivation and perception of training quality. A positive and encouraging training environment significantly enhances participants' engagement and satisfaction, whereas a negative or inadequately supportive environment may lead to low motivation and negative evaluations of training effectiveness. To improve training outcomes, organizations should prioritize optimizing the training environment, including improving

physical facilities, enhancing the quality of instructional interactions, and ensuring the timeliness and practicality of training content.

Pereira (2018) explores the development of virtual safety training environments using augmented reality (AR) technology. He points out that by creating virtual environments that simulate real work scenarios, AR technology can effectively enhance the immersion and interactivity of training, helping employees better understand and memorize safety operating procedures. Additionally, this technology enables training in potentially hazardous situations without risk, allowing employees to practice their response and decision-making skills in emergencies. Virtual safety training environments provide continuous feedback and assessment, which are crucial for enhancing employees' safety awareness and behavior change.

2.6 Training evaluation

The process of regularly assessing training outcomes, including exams, project evaluations, feedback reviews, etc.

Phillips, J. J., & Phillips, P. P. (2016) emphasize the importance of training evaluation. They point out that through systematic evaluation, organizations can determine whether training activities achieve their intended learning and business objectives. They have developed a four-level evaluation model including reaction evaluation, learning evaluation, behavior evaluation, and results evaluation, which help organizations measure the impact of training and ensure return on investment.

Kirkpatrick, J. D., & Kirkpatrick, W. K. (2016) propose the Kirkpatrick Four-Level Evaluation Model. The model consists of four levels: Reaction, Learning, Behavior, and Results. The first level, Reaction, focuses on participants' satisfaction and engagement with the training. The second level, Learning, assesses the increase in knowledge or skills after training. The third level, Behavior, examines the extent to which participants apply what they have learned to their work. The fourth level, Results, evaluates the impact of training on organizational goals. This model emphasizes the continuity of evaluation, from initial reactions to ultimate business outcomes, providing a structured approach to measure training effectiveness and help organizations ensure return on training investment.

Bezrukova (2016) reveals the effects of diversity training on enhancing workplace diversity awareness and behavior change. While diversity training can increase participants' knowledge and awareness in the short term, its effectiveness in changing long-term behavior and organizational culture is more complex and limited. Additionally, the effectiveness of training is influenced by various factors, including the design of the training, implementation methods, participants' attitudes, and organizational support.

2.7 Time and Duration

The duration of training and any subsequent learning support provided after training concludes, ensuring participants have sufficient time to master the required content.

Asadullah (2015) suggests that companies of different sizes and ownership types vary in the timing and duration of designing and implementing employee training programs. Larger enterprises tend to implement more systematic and longer-duration training projects, partly due to their greater resources and more mature human resource management systems. In contrast, small businesses may opt for shorter and more concentrated training methods due to resource constraints. Additionally, the study points out differences in training scheduling between state-owned enterprises and private enterprises; state-owned enterprises may conduct longer training sessions due to additional administrative requirements they face.

Pont-Grau (2023) examines the decisive role of training duration on the social integration of immigrants, and the results indicate that the duration of language training significantly affects improving immigrants' language proficiency and promoting their socio-economic integration. Longer periods of language training can effectively enhance immigrants' language fluency, thereby increasing their competitiveness in the labor market and their ability to engage socially. Additionally, the study finds that continuous language support and subsequent advanced training are crucial for supporting immigrants' long-term integration into new environments.

Based on the literature review and analysis above, we find that key elements of entrepreneurial training include clearly defined training objectives, practical training content covering areas such as market research and business planning, and diversified

training methods selected according to specific needs. Teachers and mentors play crucial roles in training by not only imparting knowledge but also stimulating learners' critical thinking and creative expression. A conducive training environment and systematic evaluation methods help ensure training effectiveness. Additionally, considerations such as adapting training schedules and providing ongoing support tailored to different sizes and types of enterprises, as well as the importance of language training for immigrant social integration, are critical in both research and practice. Future research could focus on the application of technology in training, strategies for cross-cultural and diversity training, the long-term impact of continuous learning support, and the exploration of innovative teaching methods to further enhance the effectiveness and impact of entrepreneurial training.

Related Research

The entrepreneurship training model has become an important research area widely recognized by both academia and practice in recent years. Numerous scholars have conducted in-depth studies on the effectiveness of entrepreneurship education and training, proposing various training models to enhance entrepreneurial capabilities and success rates.

Hynes (1996) studied methods for introducing entrepreneurship into non-business disciplines, emphasizing the importance of diverse training modes such as classroom instruction, practical projects, case studies, and entrepreneur lectures in cultivating students' entrepreneurial abilities. Azim and Al-Kahtani (2015) proposed an integrated model that highlights the critical role of foundational theoretical courses, practical exercises, case analysis, entrepreneurial competitions, and mentoring in entrepreneurship education, suggesting flexible adjustments to meet the needs of different learners. Klofsten (2000), through his research on entrepreneurship training programs at Swedish universities, pointed out the significance of multi-level course design, practical opportunities, and mentorship in entrepreneurship education, emphasizing the construction of interactive and supportive learning environments.

Furthermore, Rao and Joshi (2010) explored the effectiveness of entrepreneurship training through distance education, particularly as a flexible and cost-effective solution to address the growing unemployment issue in India. Jackson (2015) focused on the role of work-integrated learning (WIL) in enhancing students' employability skills, advocating for strengthened collaboration between academic institutions and enterprises, flexible curriculum design, and continuous guidance and feedback.

These studies provide valuable theoretical foundations and empirical support for the design of entrepreneurship training models. By integrating these research findings, more effective entrepreneurship training models can be developed to improve training outcomes and the entrepreneurial success rates of learners.

In China, the training model includes essential elements such as planning, organization and implementation, monitoring and evaluation, reflection, and improvement. It comprises both fundamental theory and practical application. Higher education institutions should vigorously cultivate students' entrepreneurial spirit, awareness, ability, and skills. This serves as the fundamental orientation and objective of the entrepreneur training model.

Therefore, we can understand the entrepreneur training model as follows: The entrepreneur training model is the process through which educational administrative departments and higher education institutions intervene, intervene, control, coordinate, guide, and provide services in entrepreneur training to achieve the goal of nurturing entrepreneurial talents. The main governing bodies are universities and educational authorities. entrepreneur training is a complex system that requires strong support, assistance, and participation from various sectors such as government, universities, society, and families. It also requires active involvement from individual students.

According to the study by Blesia, J. U., Iek, M., Ratang, W., & Hutajulu, H. (2021), an entrepreneurship model designed to enhance students' entrepreneurial skills was implemented in a higher education institution in Indonesia. This model includes elements such as curriculum design, lectures, mentorship, entrepreneurial practice, monitoring and evaluation, and follow-up services. This comprehensive

approach aims to effectively improve students' entrepreneurial abilities through practical action research.

According to the study by Olutuase, S. O., Brijlal, P., & Yan, B. (2023), a model was developed to stimulate entrepreneurial skills through entrepreneurship education in an African context. This model includes elements such as policies, institutions, objectives, values, capabilities, expertise, innovative thinking, entrepreneurial skills, and various teaching methods (including didactic, experiential, mentorship-apprenticeship, comprehensive university-industry collaboration, and case-based approaches). These elements work together to comprehensively enhance students' entrepreneurial skills and thinking abilities.

According to the study by An, H., & Xu, Y. (2021), the model for cultivating entrepreneurial talents through virtual entrepreneurship practice in higher education institutions includes key elements such as external environment, curriculum system, faculty team, and practice base. These elements work together to provide comprehensive entrepreneurial training for students, enhancing their entrepreneurial skills and practical abilities in real-world environments.

Liu, H., & Liu, W. (2021), their research found that the cultivation path for innovative and entrepreneurial talents includes key elements such as environment, policies, concepts, methods, content, faculty, and evaluation systems. These elements work together to provide comprehensive innovation and entrepreneurship education for university students, enhancing their entrepreneurial capabilities and innovative thinking in the new era

Zhao, X., & Wang, X. (2022) believe that the college entrepreneurship education system has a significant impact on the cultivation of applied innovative talents. Their study highlights that educational philosophy includes evaluation systems, domestic and international experiences, and educational goals. The educational model encompasses faculty, curriculum, and cultural atmosphere. The policy system includes practice platforms, entrepreneurship support policies, and legal regulations. The support system involves the environment, public opinion, and funding sources. These elements form a comprehensive educational system that can significantly enhance students' innovation abilities and practical skills.

Zhu, K. (2023) indicates that the cultivation of innovative applied talents in the international trade major is based on Outcome-Based Education (OBE) and the Iceberg Model. The study suggests that the system construction should include educational philosophy, cultivation objectives, and social responsibility. The curriculum design should encompass theoretical courses, virtual simulation platforms, project research, and competitions. The faculty team should consist of both internal and external teachers, employing mentorship-apprenticeship and co-creation models. Industry-education integration involves off-campus training bases, on-campus integration of specialization and innovation, and innovation and entrepreneurship laboratories.

Additionally, we analyzed and summarized research from other experts' papers, identifying the mainstream elements considered essential in entrepreneurship training models in current studies. The specific elements are listed in the table below:

Based on the analysis and synthesis of several expert papers, the current mainstream entrepreneurship training models include the following elements: entrepreneurial ideas, training objectives, training content, training methods, training teachers, training environment, effect evaluation methods, training time and follow-up studies, entrepreneurship competitions, entrepreneurship practice, and entrepreneurship policies. Training objectives and training content are unanimously recognized in all studies, indicating that they are the most critical components of entrepreneurship training models. Training teachers, training environment, and entrepreneurship policies are also widely acknowledged in most studies, highlighting their importance in effective entrepreneurship training. Elements with lower recognition include entrepreneurial ideas, entrepreneurship competitions, and training time and follow-up studies. Although these elements are not widely mentioned in some studies, they still form essential parts of entrepreneurship training models and can provide support and supplement the overall training effect.

Table 2.3 Related scholars to the entrepreneur training research elements analysis

The elements of entrepreneur training model	Dollinger, M. J.	Kirzner, I. M.	Blesia, J. U	Olutuase	An,H	Liu,H	Zhao,X	Zhu,K	Chu	Zhang	Li Yong	Wu Kaihe	Total
Entrepreneurial idea				√	√	√			√		√		5
Training objective	√	√	√	√	√	√	√	√	√	√	√	√	12
Training content	√	√	√	√	√	√	√	√	√	√	√	√	12
Training method	√		√	√	√	√			√	√	√		8
Training teacher	√	√	√		√		√	√		√	√	√	9
Training environment		√	√		√		√	√	√	√	√	√	9
Effect evaluation method	√	√		√	√	√		√			√	√	8
Training time and follow-up study		√		√		√		√	√			√	6
Entrepreneurship competition		√	√				√			√			4
Entrepreneurship practice		√		√	√	√			√	√	√	√	8
Entrepreneurship policy			√	√	√	√	√	√	√	√		√	9

Chapter 3
Research Methodology

This research objective is to develop entrepreneur training model for undergraduate students at Liuzhou Institute of Technology.

Step 1: To study the elements of entrepreneur training model for undergraduate students at Liuzhou Institute of Technology.

Step 2: To evaluate elements and create the entrepreneur training model for undergraduate students at Liuzhou Institute of Technology.

Step 3: To evaluate the entrepreneur training model for undergraduate students at Liuzhou Institute of Technology.

Step 4: To implement the entrepreneur training model for undergraduate students at Liuzhou Institute of Technology.

The 4 steps of the research process can be summarized as Figure 3.1.

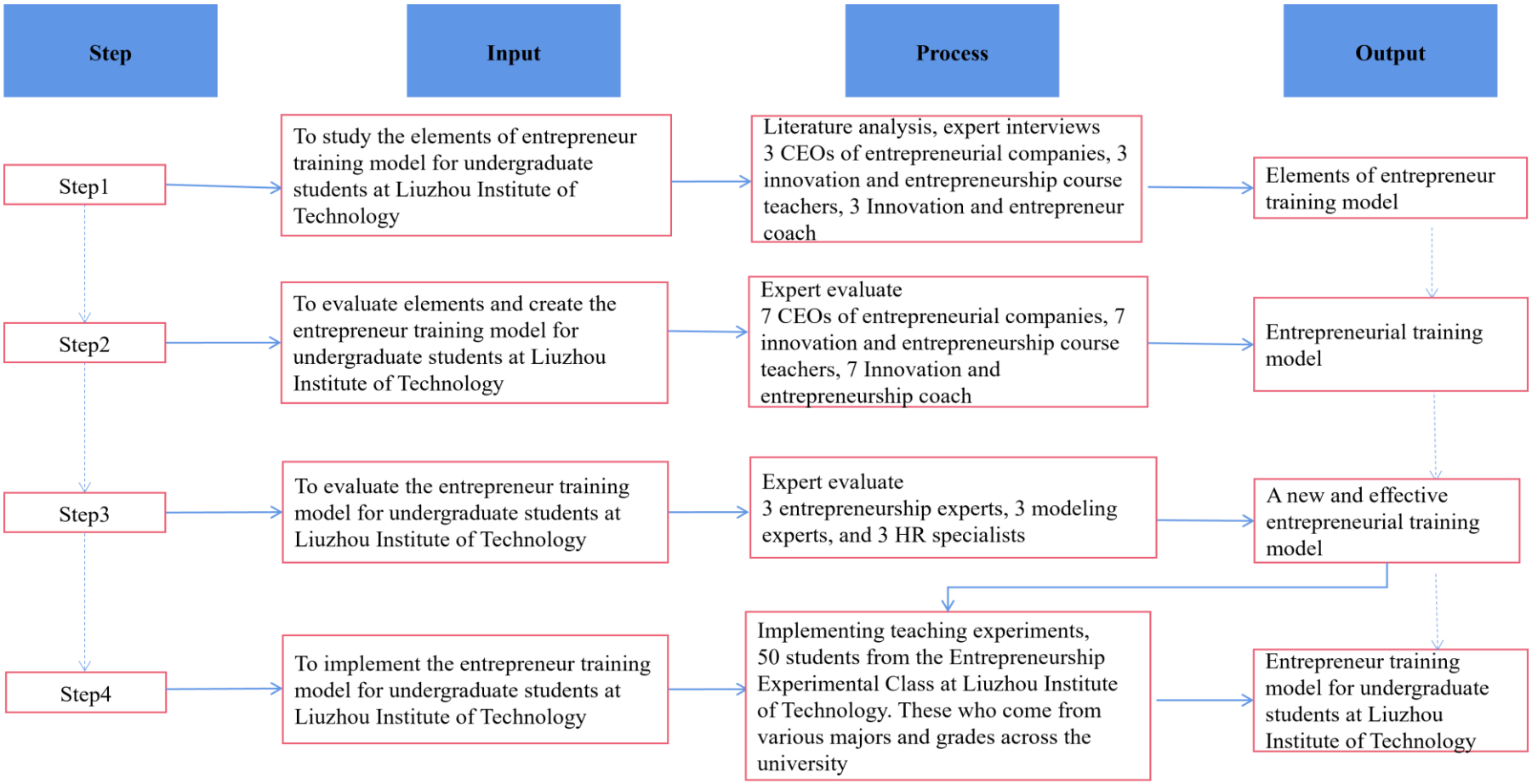
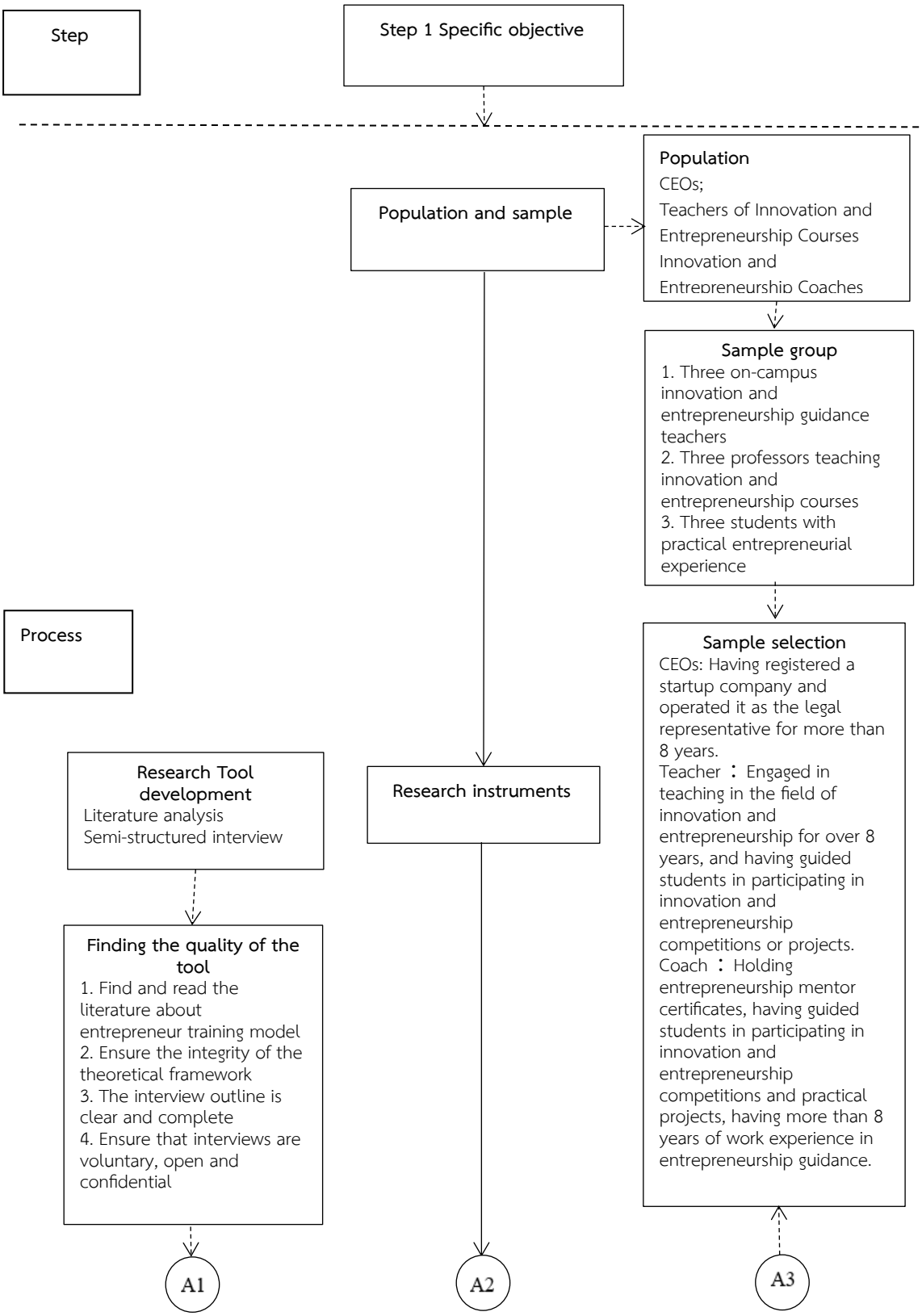


Figure 3.1 Research implementation Process

Step 1: To study the elements of entrepreneur training model for undergraduate students at Liuzhou Institute of Technology.



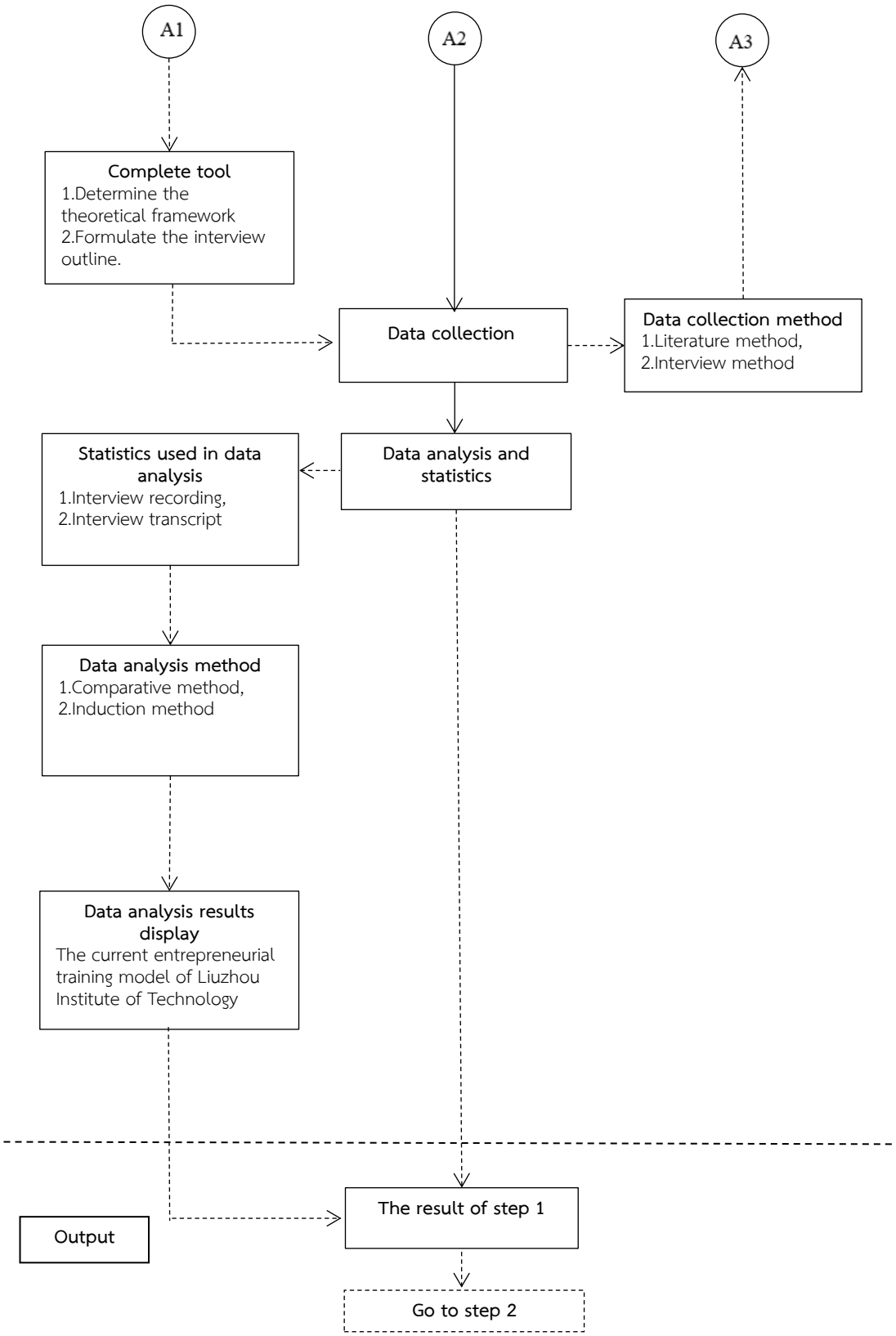


Figure 3.2 Details of the research process step 1

In this research study the researcher has defined the characteristics of the research informant group. research tools data collection and data analysis in each step as follows:

Step 1: To study the elements of entrepreneur training model for undergraduate students at Liuzhou Institute of Technology.

The population groups include 3 CEOs of entrepreneurial companies, 3 innovation and entrepreneurship course teachers, 3 Innovation and entrepreneurship coach.

1. The selection criteria for CEOs of entrepreneurial companies are: having registered a startup company and operated it as the legal representative for more than 8 years.

Number of 3 people

2. The selection criteria for innovation and entrepreneurship course teachers are: engaged in teaching in the field of innovation and entrepreneurship for over 8 years, and having guided students in participating in innovation and entrepreneurship competitions or projects.

Number of 3 people

3. The selection criteria for Innovation and entrepreneurship coach are: holding entrepreneurship mentor certificates, having guided students in participating in innovation and entrepreneurship competitions and practical projects, having more than 8 years of work experience in entrepreneurship guidance.

Number of 3 people

Research Instruments

The tools used in this research are literature analysis and Semi-structured interview.

The procedure for creating the tool is as follows

1. Read a large number of Chinese and foreign literatures on entrepreneur training models

2. Build a research framework of entrepreneur training model.

3. Make a semi-structured interview outline according to the research framework.

4. Invite experts to conduct interviews.

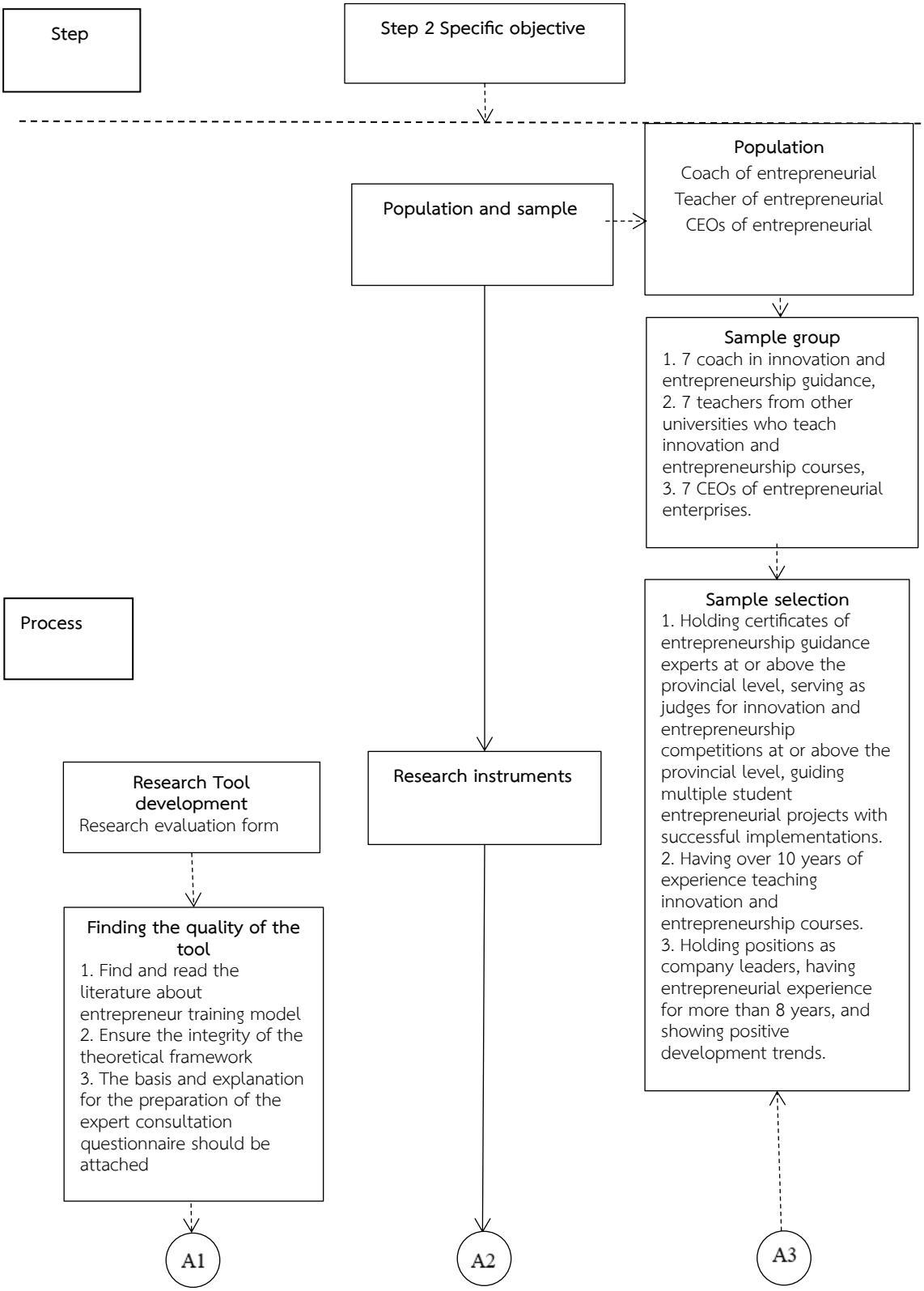
Data collection

In step one, audio and handwritten notes of in-depth interviews with experts are collected.

Data analysis and statistics used in data analysis

Based on the in-depth interview records of experts collected, the opinions of 9 experts were summarized according to the interview outline, and the opinions of experts were analyzed and summarized to obtain the current elements of entrepreneur training model for undergraduate students at Liuzhou Institute of Technology.

Step 2: To evaluate elements and create the entrepreneur training model for undergraduate students at Liuzhou Institute of Technology.



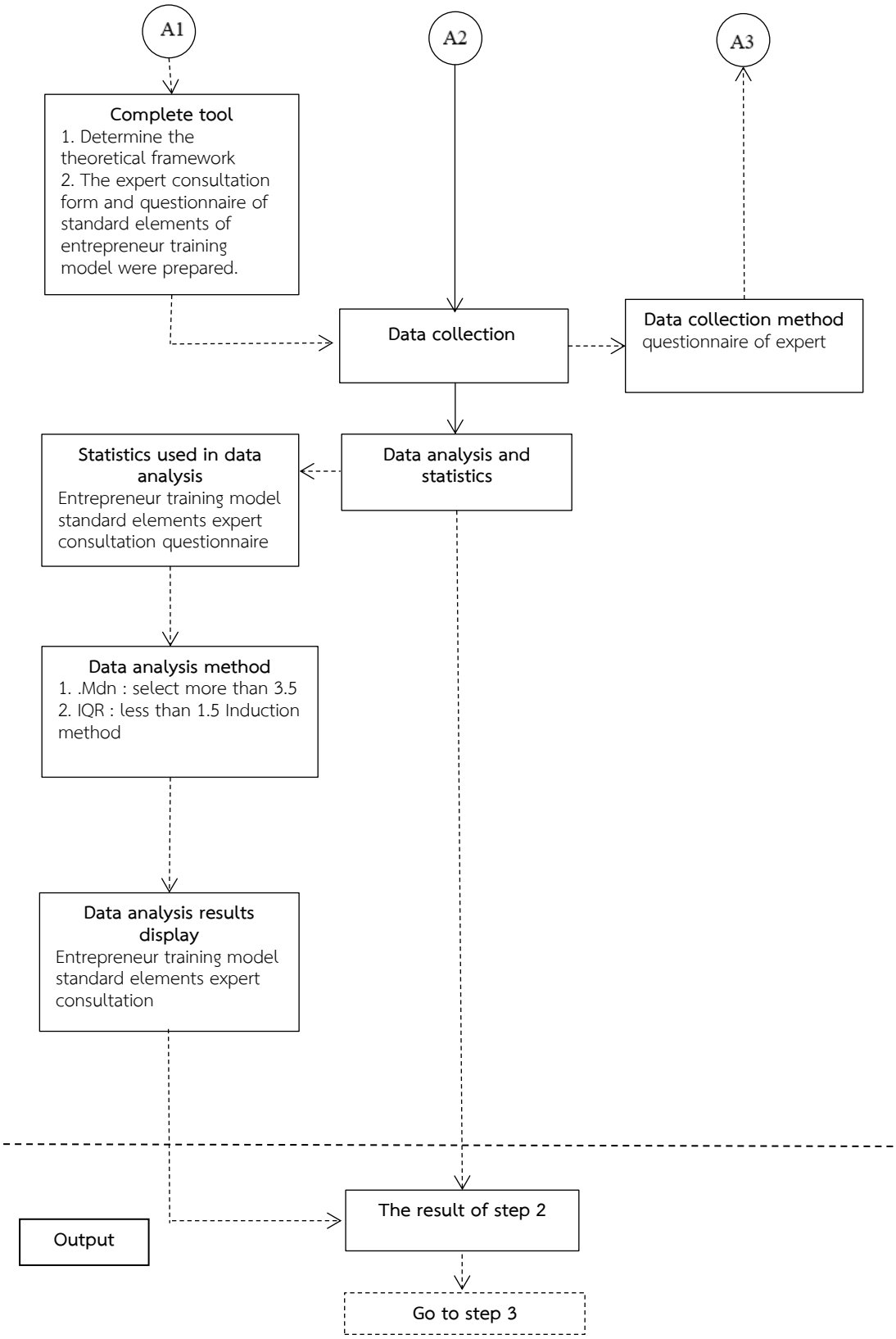


Figure 3.3 Details of the research process step 2

Step 2: To evaluate elements and create the entrepreneur training model for undergraduate students at Liuzhou Institute of Technology.

The population groups include 7 CEOs of entrepreneurial companies, 7 innovation and entrepreneurship course teachers, 7 Innovation and entrepreneurship coach.

1. The selection criteria for entrepreneurial enterprise CEOs are: holding positions as company leaders, having entrepreneurial experience for more than 8 years, and showing positive development trends.

Number of 7 people

2. The selection criteria for experts teaching innovation and entrepreneurship courses are: having over 10 years of experience teaching innovation and entrepreneurship courses.

Number of 7 people

3. The selection criteria for Innovation and entrepreneurship coach are: holding certificates of entrepreneurship guidance experts at or above the provincial level, serving as judges for innovation and entrepreneurship competitions at or above the provincial level, guiding multiple student entrepreneurial projects with successful implementations, having more than 8 years of work experience in entrepreneurship guidance.

Number of 7 people

Research Instruments

This step uses the expert interview method for research. The tool used is a questionnaire.

The procedure for creating the tool is as follows:

1. Through literature analysis, the theoretical framework of the standard elements of entrepreneur training model is established.

2. According to the theoretical framework of the standard elements of entrepreneurial training model, the expert consultation table of the standard elements of entrepreneurial training model is compiled.

3. Based on the expert consultation table of the standard elements of entrepreneurial training model, the questionnaire of expert consultation of entrepreneurial training model is compiled.

4. The research theoretical basis, theoretical framework, expert consultation form, expert consultation questionnaire and filling guide will be packaged as the data sent to the experts.

5. A total of three rounds of expert consultation will be conducted, and the above four points will be repeated in each round of consultation.

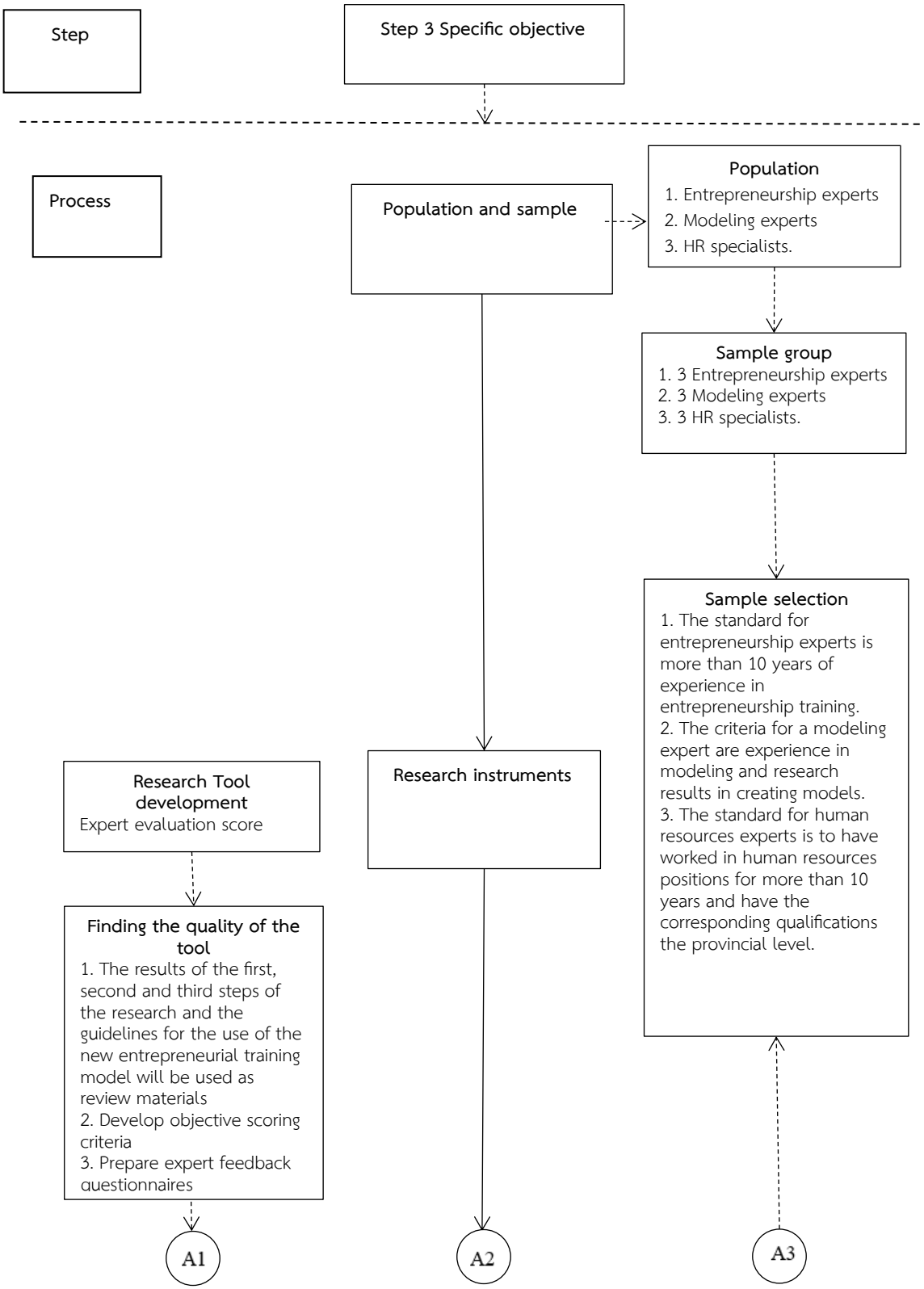
Data collection

The expert consultation questionnaire is used to collect three rounds of consultation opinions. Consultation questionnaires can be filled out by email or offline.

Data analysis and statistics used in data analysis

The Mdn and IQR methods will be used to collect and analyze the data, and the collected questionnaires will be summarized and statistically analyzed. During the statistical process, options with Mdn < 3.5 and IQR < 1.5 will be excluded..

Step 3: To evaluate the entrepreneur training model for undergraduate students at Liuzhou Institute of Technology.



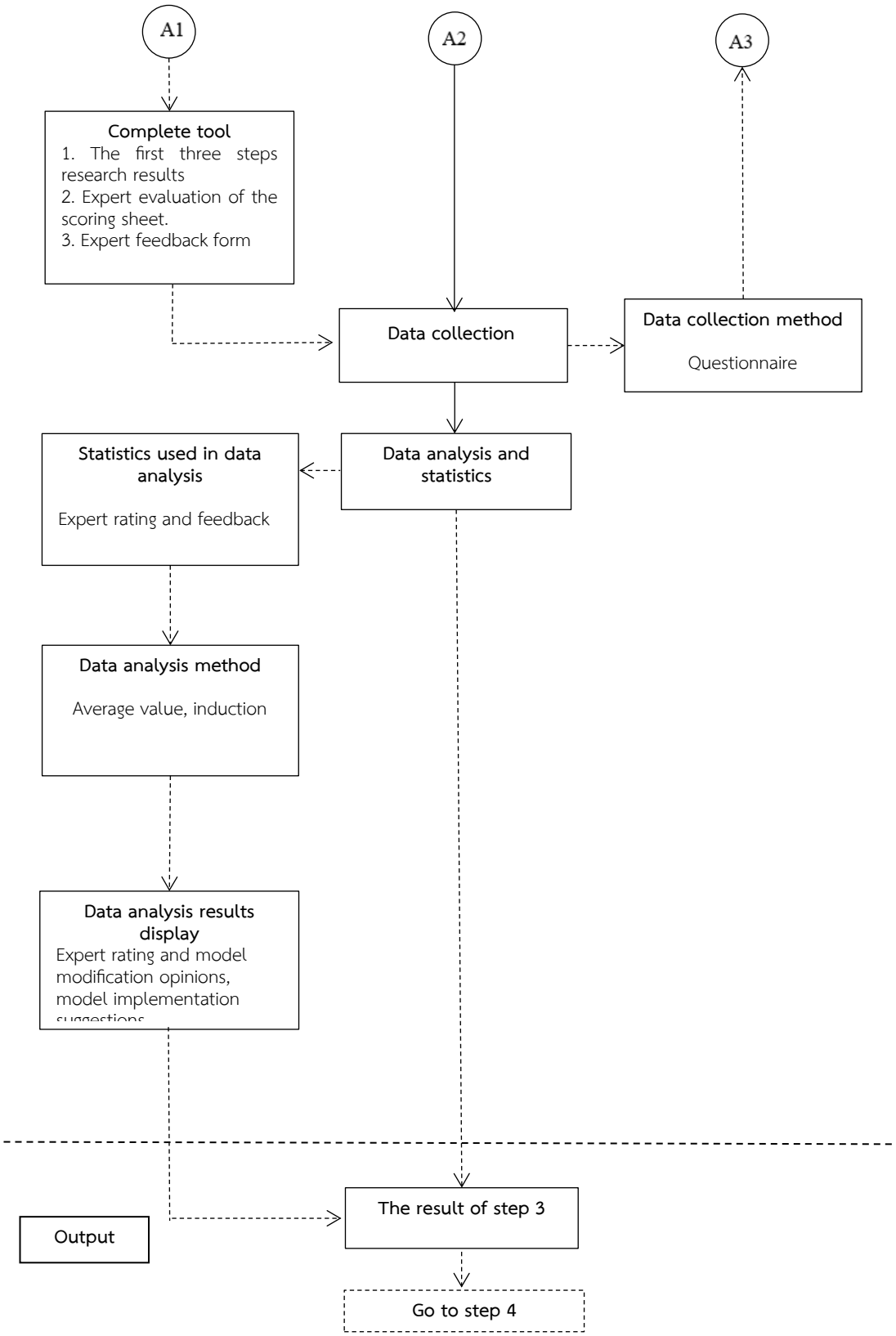


Figure 3.4 Details of the research process step 3

Step 3: To evaluate the entrepreneur training model for undergraduate students at Liuzhou Institute of Technology.

The population groups include 3 Entrepreneurship experts,3 Modeling experts and 3 HR specialists.

1. The selection criteria for entrepreneurship experts are: Having more than 10 years of relevant work experience, possessing a national-level entrepreneurship guidance certificate, leading students to win awards in national-level entrepreneurship competitions, and having personal entrepreneurial experience.

Number of 3 people

2. The selection criteria for modeling experts are: Having more than 10 years of relevant work experience, holding a senior professional title, having qualifications to supervise doctoral students, and having research achievements in modeling.

Number of 3 people

3. The selection criteria for HR specialists are: Having more than 10 years of relevant work experience, holding a national senior human resources professional qualification, and being familiar with recruitment work in universities.

Number of 3 people

Research Instruments

1. The tools used in this research are Expert consultation and scoring.

2. The procedure for creating the tool is as follows

The results of the first, second and third steps of the research and the guidelines for the use of the new entrepreneurial training model will be used as review materials

3. To compile entrepreneur training model for undergraduate students at Liuzhou Institute of Technology experts scoring table.

4. To compile the feedback form of experts' modified opinions and model implementation opinions on the entrepreneur training model for undergraduate students at Liuzhou Institute of Technology.

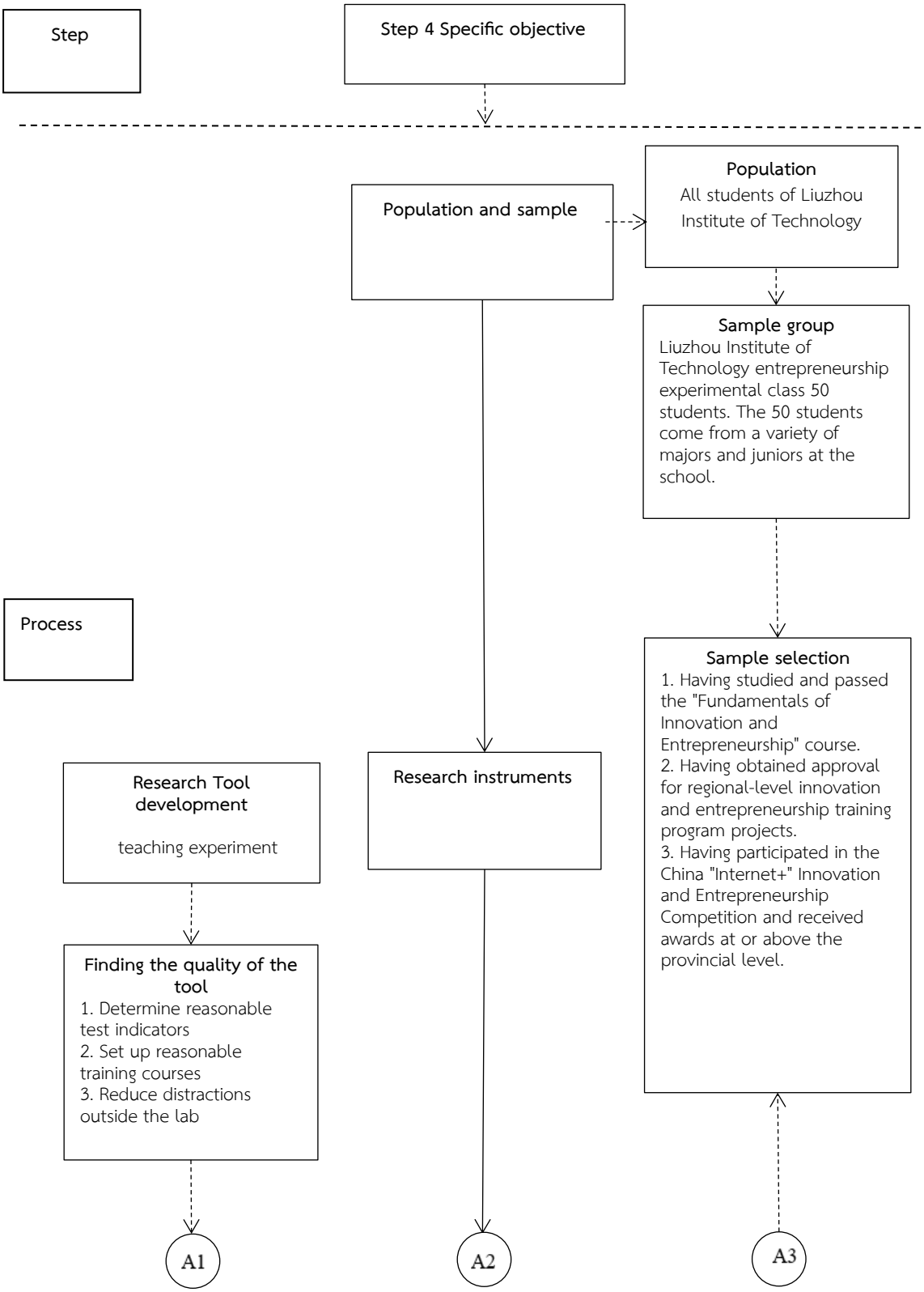
Data collection

Collect expert ratings and feedback.

Data analysis and statistics used in data analysis

Calculate the average score of experts and summarize the feedback of experts.

Step 4: To implement the entrepreneur training model for undergraduate students at Liuzhou Institute of Technology.



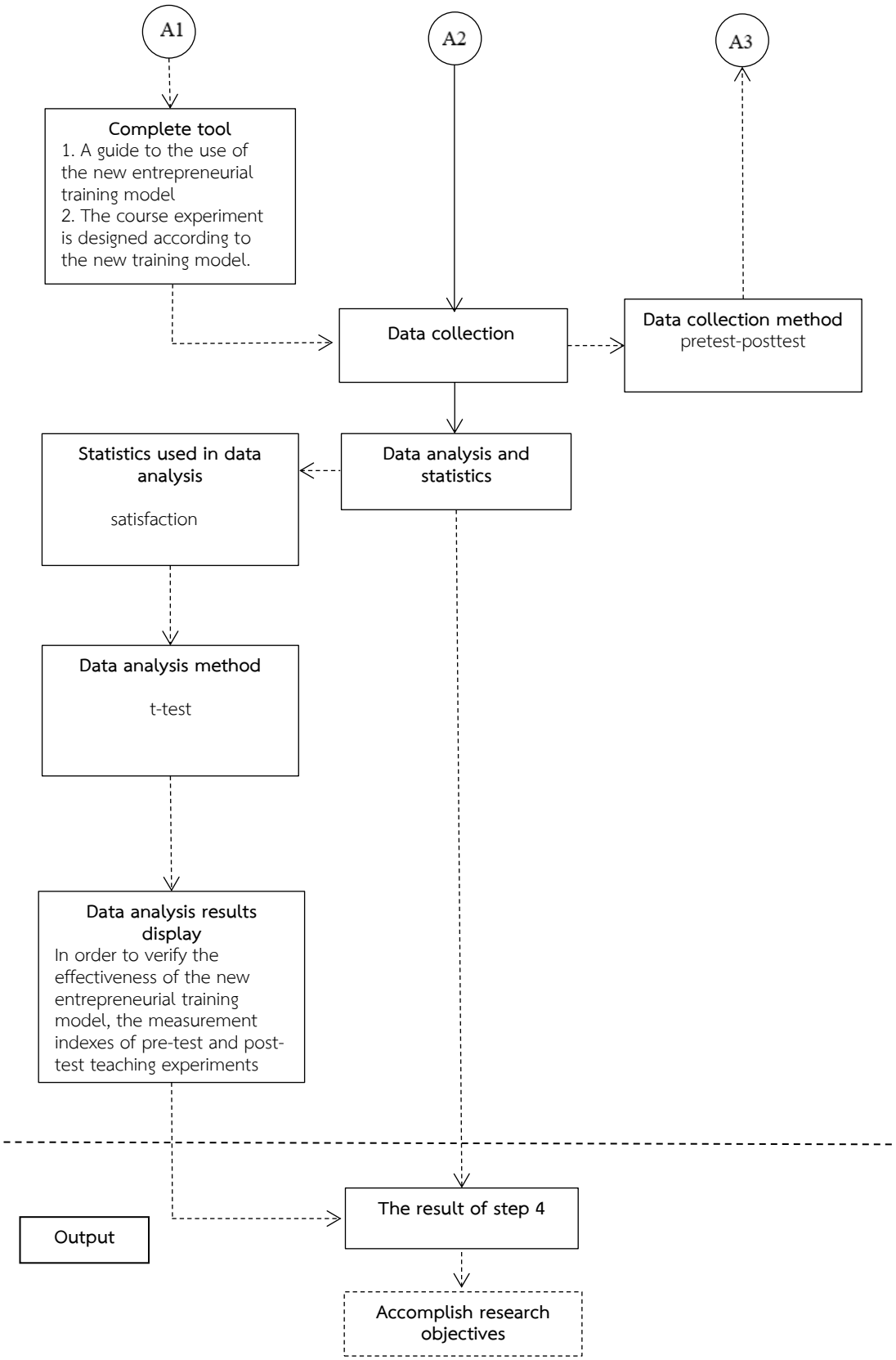


Figure 3.5 Details of the research process step 4

Step 4: To implement the entrepreneur training model for undergraduate students at Liuzhou Institute of Technology.

The population groups include 50 students from the Entrepreneurship Experimental Class at Liuzhou Institute of Technology. These 50 students come from various majors and grades across the university.

1. Having studied and passed the Fundamentals of Innovation and Entrepreneurship course.

2. Having obtained approval for regional-level innovation and entrepreneurship training program projects.

3. Having participated in the China Internet+ Innovation and Entrepreneurship Competition and received awards at or above the provincial level.

Number of 50 people

Research Instruments

The tools used in this research are Course experiment.

The procedure for creating the tool is as follows:

1. The Course experiment is designed according to the new entrepreneurial training model.

2. Select measurable, representative measurement indicators.

3. Students were selected as sample group according to experimental criteria.

4. The index of the sample group was measured before the experiment began.

5. The Course experiment was carried out and the index was measured after the experiment.

Data collection

Pretest-posttest.

Data analysis and statistics used in data analysis

The data analysis method is T-test

Chapter 4
Data Analysis Results

This research objective is to develop the entrepreneur training model for undergraduate students at Liuzhou Institute of Technology. Conducting subsequent research based on the research methods outlined in Chapter 3 and presenting the data analysis results in the following 4 steps:

Step 1: Results of data analysis of expert interviews on the elements of the entrepreneur training model for undergraduate students at Liuzhou Institute of Technology.

Step 2: Results of data analysis of expert evaluations on the elements of the entrepreneur training model at Liuzhou Institute of Technology, and creation of the entrepreneur training model for undergraduate students at Liuzhou Institute of Technology based on these results.

Step 3: Results of data analysis of expert evaluations on the entrepreneur training model for undergraduate students at Liuzhou Institute of Technology.

Step 4: Results of data analysis of the implementation of the entrepreneur training model for undergraduate students at Liuzhou Institute of Technology.

Step 1: Results of data analysis of expert interviews on the elements of the entrepreneur training model for undergraduate students at Liuzhou Institute of Technology

1. Personal information of the 9 experts interviewed, including gender, age, highest educational qualification, work experience in the field of innovation and entrepreneurship, etc., are presented in Table 4.1.

Table 4.1 Personal information of 9 experts involved in the interview

Indicator	Scope	Frequency	Percentage
Gender	Male	6	66.67
	Female	3	33.33
	Total	**9**	100
Age	Below 25 yrs.	0	
	25-35 yrs.	2	22.22
	36-45 yrs.	5	55.56
	Over 45 yrs.	2	22.22
	Total	**9**	100
Academic Degree	Doctor Degree	3	33.33
	Master degree	4	44.44
	Bachelor degree	2	22.22
	Total	9	100
Working experience	Below 8yrs.	0	
	8-9yrs.	2	22.22
	10-11yrs.	3	33.33
	12-13yrs.	4	44.44
	Total	9	100

Interviewing a total of 9 experts, including 3 CEOs of entrepreneurial companies, 3 entrepreneurship coach on campus from Liuzhou Institute of Technology, and 3 Innovation and entrepreneurship course teacher at Liuzhou Institute of Technology.

From the information in the table above, it can be observed that there are a total of 7 experts with a master's degree or above, and 7 experts with more than 10 years of relevant work experience. The experts with high academic qualifications and rich experience account for more than three-quarters of the total number of experts interviewed. This provides a solid foundation for identifying the factors of the Liuzhou Institute of Technology entrepreneur training model through interviews.

2. The elements and sub-elements of the entrepreneur training model at Liuzhou Institute of Technology were determined through expert interviews. The specific procedure is as follows:

Firstly, based on a literature review, it was determined that the elements of the entrepreneur training model at Liuzhou Institute of Technology include: Training Objectives, Training Content, Training Method, Training Teacher, Training Environment, Entrepreneurship Practice, Resources and Policy, Assessment and Evaluation, continue learning, totaling 9 elements. An interview outline was formulated according to these 9 elements.

Subsequently, semi-structured interviews were conducted with experts. Repeat interviews were conducted for interview questions with unclear concepts or significant expert disagreements until relatively consistent interview conclusions were obtained.

Finally, the interview results were subjected to data analysis to derive the elements and sub-elements of the entrepreneur training model at Liuzhou Institute of Technology. The interview outline can be found in the appendix of the paper.

The data analysis results of the interviews are as follows:

2.1 Model element Training Objectives expert interview data analysis results. Based on the expert interview data analysis results presented in Table 4.2, it appears that the experts unanimously agreed on the importance of cultivating innovative thinking, enhancing entrepreneurial willingness, and learning the basic processes and required skills for entrepreneurship, as indicated by the 100% frequency value for these elements. Additionally, there is a high level of consensus among the experts regarding the practical application of skills, teamwork capabilities, and the cultivation of entrepreneurial insight and adaptability, as evidenced by their high frequency values of 100%. However, there is slightly less consensus on elements such as developing comprehensive entrepreneurial management and leadership abilities, continuous innovation, and adapting to changing market environments and technological trends, as indicated by the lower frequency values ranging from 44.44% to 77.78%. Overall, the expert interview data suggests a strong alignment among experts regarding the fundamental training objectives of the entrepreneur training model, with some variations in emphasis on certain elements.

Table 4.2 Model element Training Objectives expert interview data analysis results

Element	Element detail	Frequency	Percentage
Training objective	1. Cultivate innovative thinking and enhance entrepreneurial willingness	9	100.00
	2. Learn the basic processes and required skills for entrepreneurship	9	100.00
	3. Practical to up skills and teamwork capabilities	9	100.00
	4. Practice and apply learned professional knowledge to solve problems	8	88.89
	5. Cultivate entrepreneurial insight and adaptability	8	88.89
	6. Develop comprehensive entrepreneurial management and leadership abilities	7	77.78
	7. Learning continuous innovation and personal development	4	44.44
	8. Adapt to change market environments and technological trends	6	66.67

2.2 Model element Training Content expert interview data analysis results. Based on the expert interview data analysis results presented in Table 4.3, it is evident that there is a high level of consensus among the experts regarding the training content elements of the entrepreneur training model. Specifically, elements such as providing theoretical knowledge and case studies of entrepreneurship, encouraging knowledge and skills related to entrepreneurship process management, and learning entrepreneurship project incubation and guideline services received unanimous agreement from all experts, with 100% frequency values. Additionally, there is strong consensus on integrating entrepreneurship thinking into various subjects and offering entrepreneurship practice courses and internships, as indicated by the high frequency values of 88.89%. However, there is slightly less agreement on elements

such as encouraging knowledge and skills related to business management and sharing innovative entrepreneurship cases, as evidenced by the lower frequency values of 77.78%. Overall, the expert interview data suggests a general alignment among experts regarding the essential training content elements of the entrepreneur training model, with some variations in emphasis on certain elements.

Table 4.3 Model element Training Content expert Interview data analysis results

Element	Element detail	Frequency	Percentage
Training content	1. Provide theoretical knowledge and case studies of entrepreneurship	9	100.00
	2. Integrated entrepreneurship thinking into varieties subjects.	8	88.89
	3. Encourage to knowledge and skills related to entrepreneurship process management	9	100.00
	4. Learning entrepreneurship project incubation and-guideline-services	9	100.00
	5. Entrepreneurship practice courses and internship in entrepreneur	8	88.89
	6. Encourage to knowledge and skills related to business management	7	77.78
	7. Share innovative entrepreneurship cases by seminars and others	7	77.78

2.3 Model element Training Method expert interview data analysis results. Based on the expert interview data analysis results presented in Table 4.4, it is evident that there is a high level of consensus among the experts regarding the training methods of the entrepreneur training model. Specifically, elements such as teaching in classroom and group discussions, enterprise internships, and continuing to guide student entrepreneurship projects received unanimous agreement from all

experts, with 100% frequency values. Additionally, there is strong consensus on guiding student entrepreneurship teams through mentors and providing short course training by expert lectures and discussion, as indicated by the high frequency values of 88.89%. However, there is slightly less agreement on elements such as using simulation and entrepreneurship sandbox methods and providing an online learning and cross-disciplinary cooperation platform, as evidenced by the lower frequency values of 77.78% and 66.67%, respectively. Overall, the expert interview data suggests a general alignment among experts regarding the essential training methods of the entrepreneur training model, with some variations in emphasis on certain methods.

Table 4.4 Model element Training Method expert interview data analysis results

Element	Element detail	Frequency	Percentage
Training method	1. Teaching in classroom and group discussions	9	100.00
	2. Use simulation and entrepreneurship sandbox methods	7	77.78
	3. Guide student entrepreneurship teams through mentors	8	88.89
	4. Enterprise internships and facilitate industry exchange activities	9	100.00
	5. Continue guide student entrepreneurship projects	8	88.89
	6. Provide short course training by expert lectures and discussion	8	88.89
	7. Provide an online learning and cross-disciplinary cooperation platform	6	66.67

2.4 Model element Training Teacher expert interview data analysis results. Based on the expert interview data analysis results presented in Table 4.5, it is evident that there is a high level of consensus among the experts regarding the qualities and backgrounds of training teachers for the entrepreneur training model. Specifically, elements such as employing teachers with entrepreneurship knowledge and educational backgrounds, as well as teachers with experience and guidance capabilities in project management, received unanimous agreement from all experts, with 100% frequency values. Additionally, there is strong consensus on the importance of teachers having professional backgrounds and problem-solving abilities, as well as mentors with industry backgrounds and project guidance capabilities, as indicated by the high frequency values of 88.89%. However, there is slightly less agreement on the employment of mentors who are experts in specific fields such as laws, finance, tax, and others, as evidenced by the lower frequency value of 77.78%. Overall, the expert interview data suggests a general alignment among experts regarding the qualities and backgrounds required for effective training teachers and mentors in the entrepreneur training model, with some variations in emphasis on certain qualities.

Table 4.5 Model element Training Teacher expert interview data analysis results

Element	Element detail	Frequency	Percentage
Training teacher	1. Employ teachers with entrepreneurship knowledge and educational backgrounds	9	100.00
	2. Teachers should be experience and guidance capabilities with project management	9	100.00
	3. Teachers should be professional backgrounds and problem-solving abilities	8	88.89
	4. Mentors should be industry backgrounds and project guidance capabilities	8	88.89
	5. Employ mentors who are experts in specific fields in laws, finance, tax and another related	7	77.78

2.5 Model element Training Environment expert interview data analysis results. The expert interview data in Table 4.6 indicates a strong consensus on crucial elements of the entrepreneurship training environment. Key findings include unanimous agreement on features like simulation technology and mentor guidance, with 100% frequency values. There's also strong support for shared resources and practical internship opportunities. However, slightly less agreement is seen on aspects such as startup networks and fostering an innovation-friendly ecosystem, with frequency values of 66.67% and 55.56% respectively. Overall, the data suggests a general alignment among experts on essential components of the training environment, with some variations in emphasis.

Table 4.6 Model element Training Environment expert interview data analysis results

Element	Element detail	Frequency	Percentage
Training environment	1. Provide facilities for entrepreneurial learning spaces and communities	7	77.78
	2. Provide simulation technology to simulate the entrepreneurial process	9	100.00
	3. Provide entrepreneurship incubators and laboratory facilities	8	88.89
	4. Provide shared entrepreneurship resources and periodic mentor guidance	9	100.00
	5. Provide entrepreneurship internships and office space for entrepreneurial practice projects	9	100.00
	6. Provide startup networks and connections for early-stage enterprises	6	66.67
	7. Cooperation between university and enterprise (entrepreneurship practice projects on campus)	8	88.89
	8. Create a favorable ecosystem for innovation and entrepreneurship (culture, public opinion)	5	55.56

2.6 Model element Entrepreneur practice expert interview data analysis results. The expert interview data in Table 4.7 shows a strong consensus on key aspects of entrepreneurial practice within the entrepreneur training model. Notably, activities like participating in entrepreneurship competitions and university-enterprise cooperation projects received unanimous agreement, with 100% frequency values. There's also significant support for virtual simulation courses and executing personal entrepreneurial plans, with frequency values of 88.89%. However, slightly less agreement is seen on participating in university entrepreneurship training programs and exploring science and technology projects, with frequency values of 66.67% and 55.56% respectively. Overall, the data indicates a general alignment among experts on the importance of diverse entrepreneurial practice opportunities, with some variations in emphasis.

Table 4.7 Model element Entrepreneur practice interview data analysis results

Element	Element detail	Frequency	Percentage
Entrepreneur practice	1. Encourage and guide students to participate in university entrepreneurship training programs	6	66.67
	2. Encourage and guide students to explore university science and technology project proposals	5	55.56
	3. Encourage and guide students to engage in virtual simulation entrepreneurship training courses	8	88.89
	4. Encourage and guide students to participate in entrepreneurship competitions	9	100.00
	5. Encourage and guide students to engage in university-enterprise cooperation practice projects	9	100.00

Table 4.7 (Continued)

Element	Element detail	Frequency	Percentage
	6. Encourage and guide students in executing personal entrepreneurial plans	8	88.89
	7. Provide guidance on managing the entrepreneurial process for students	6	66.67

2.7 Model element Entrepreneur Policy expert interview data analysis results. Based on Based on the expert interview data analysis in Table 4.8, there is broad consensus among experts regarding entrepreneur policy within the entrepreneur training model. Key findings include unanimous agreement on providing startup funding, funding support, and tax incentives for entrepreneurship projects, with strong support for other policy measures such as entrepreneurship learning resources and subsidies. However, there is slightly less agreement on certain policies like mentor subsidies, suggesting some variation in expert opinions. Overall, the data highlights the importance of robust policy support for fostering entrepreneurship.

Table 4.8 Model element Entrepreneur Policy expert interview data analysis results

Element	Element detail	Frequency	Percentage
Entrepreneur policy	1. Provide entrepreneurship learning materials and platform resources	8	88.89
	2. Formulate entrepreneurship policies and support measures	8	88.89
	3. Provide startup funding and funding policies for entrepreneurship projects	9	100.00
	4. Establish entrepreneurship training subsidies and incentive policies	8	88.89

Table 4.8 (Continued)

Element	Element detail	Frequency	Percentage
	5. Offer funding support and tax incentives for entrepreneurship incubation projects	9	100.00
	6. Develop entrepreneurship project selection and certification policies	7	77.78
	7. Provide funding for continuous entrepreneurship development and technology transfer policies	7	77.78
	8. Formulate entrepreneurship mentor and professional service subsidy policies	5	55.56
	9. Develop incentive policies for internal entrepreneurship mentors	4	44.44

2.8 Model element Training Evaluation expert interview data analysis results. The expert interview data in Table 4.9 indicates a high level of consensus on various aspects of training evaluation within the entrepreneur training model. Notably, elements like establishing learning objectives and assessment criteria, conducting assessments and feedback on entrepreneurial capabilities, and presenting project outcomes received unanimous agreement, with 100% frequency values. Additionally, there's strong support for establishing evaluation criteria for entrepreneurship projects and tracking performance, with frequency values of 88.89%. However, there is slightly less agreement on aspects such as evaluating project outcomes and establishing certification standards, with frequency values of 77.78% and 66.67% respectively. Overall, the data suggests a general alignment among experts on key evaluation components, with some variations in emphasis.

Table 4.9 Model element Training Evaluation expert interview data analysis results

Element	Element detail	Frequency	Percentage
Training evaluation	1. Establish entrepreneurship learning objectives and assessment criteria	9	100.00
	2. Conduct assessments and feedback on entrepreneurial intentions and capabilities	9	100.00
	3. Establish evaluation criteria for entrepreneurship projects	8	88.89
	4. Conduct presentations and defenses of entrepreneurship project outcomes	9	100.00
	5. Evaluate and track the performance of entrepreneurship practices	8	88.89
	6. Conduct evaluations and adjustments of entrepreneurship project outcomes	7	77.78
	7. Establish certification standards for continuing entrepreneurship education	6	66.67
	8. Evaluate entrepreneurship achievements and societal impacts.	5	55.56

2.9 Model element Continue learning expert interview data analysis results. The expert interview data in Table 4.10 demonstrates a notable level of consensus on various elements related to Continue learning within the entrepreneur training model. Particularly, providing continue learning opportunities and resources for entrepreneurs received unanimous agreement, with a frequency value of 100%. Additionally, offering platforms for interdisciplinary learning and exchange, as well as mentorship and coaching services, garnered strong support from experts, with frequency values of 88.89%. However, there is slightly less agreement on aspects such as providing industry updates and trend analysis, with a frequency value of 77.78%. Overall, the data suggests a general alignment among experts on the importance of continuous learning support, with some variations in emphasis on certain elements.

Table 4.10 Model element Continue learning expert interview data analysis results

Element	Element detail	Frequency	Percentage
Continue learning	1. Provide continue learning opportunities and resources for entrepreneurs	9	100.00
	2. Offer entrepreneurs platforms for interdisciplinary learning and exchange	8	88.89
	3. Provide entrepreneurs with industry updates and trend analysis	7	77.78
	4. Offer entrepreneurs mentorship, guidance, and coaching services	8	88.89
	5. Facilitate the sharing of innovative entrepreneurship cases and seminars for entrepreneurs	7	77.78
	6. Provide industry research and project support for entrepreneurs	6	66.67

Overall, the expert interview data analysis provides valuable insights into the essential elements of entrepreneur training model for undergraduate students at Liuzhou Institute of Technology. Across various dimensions including training objectives, content, methods, environment, and evaluation, there is a remarkable level of consensus among experts. Key findings reveal unanimous agreement on critical aspects such as cultivating innovative thinking, providing practical training opportunities, and establishing evaluation criteria. Additionally, there is strong support for elements like mentorship, interdisciplinary learning, and ongoing support for entrepreneurs. However, slight variations in agreement exist regarding certain aspects such as specific training content or policy measures. These findings underscore the importance of a comprehensive and dynamic approach to entrepreneurship education, catering to the diverse needs of aspiring entrepreneurs while ensuring alignment with industry trends and demands.

Table 4.11 Statistics of Expert Consensus in the First Round of Interviews

Indicator	Scope	Frequency	Percentage
Expert Consensus	Below 50%	2	3.03
	50%-74%	12	18.18
	75%-99%	31	46.97
	100%	21	31.82
	Total	**66**	100

Step 2: Results of data analysis of expert evaluations on the elements of the entrepreneur training model at Liuzhou Institute of Technology, and creation of the entrepreneur training model for undergraduate students at Liuzhou Institute of Technology based on these results.

1. Personal information of the 21 experts interviewed, including gender, age, highest educational qualification, work experience in the field of innovation and entrepreneurship, etc., are presented in table 4.12.

Table 4.12 Personal information of 9 experts involved in the interview

Indicator	Scope	Frequency	Percentage
Gender	Male	17	80.95
	Female	4	19.05
	Total	**21**	100
Age	Below 25 yrs.	0	
	25-35 yrs.	5	23.81
	36-45 yrs.	10	47.62
	Over 45 yrs.	6	28.57
	Total	**21**	100
Academic Degree	Doctor Degree	5	23.82
	Master degree	8	38.09
	Bachelor degree	8	38.09
	Total	21	100

Table 4.12 (Continued)

Indicator	Scope	Frequency	Percentage
Working experience	Below 10yrs	8	38.09
	10-15yrs	11	52.38
	Above15yrs	2	9.5
	Total	21	100

Interviewing a total of 21 experts, including 7 Innovation and entrepreneurship coach, 7 Innovation and entrepreneurship experts from external institutions/schools, and 7 Startup CEO.

From the information in the table above, the composition of the expert panel involved in the interview reflects a predominantly male representation, constituting 80.95% of the total participants. Regarding age distribution, the majority fall within the age range of 36-45 years, comprising 47.62% of the experts. In terms of academic qualifications, the panel is relatively balanced, with 38.09% holding doctorate degrees, 38.09% holding bachelor's degrees, and 23.82% holding master's degrees. When considering work experience, a notable proportion of experts (52.38%) have accumulated 10-15 years of experience, while 38.09% possess less than 10 years of experience. Only a small fraction (9.5%) boasts over 15 years of work experience.

2. Building upon the initial round of interviews, we distilled nine primary elements and sixty-six sub-elements. These elements were formulated into an expert assessment form, and twenty-one experts were invited to rate these elements using a five-point scale. Throughout the evaluation process, notable discrepancies emerged in expert opinions, inconsistencies in element descriptions, and suggested modifications from the experts. These issues were thoroughly addressed through iterative communication with the experts. Subsequently, the data was compiled, summarized, and analyzed. The results are presented below:

2.1 Model element Training Objective expert evaluation data analysis results. The expert evaluation data for the training objective element indicates consistent ratings across different sub-elements, with median (Mdn) scores ranging from

4.00 to 5.00. The interquartile range (IQR) for each sub-element is 1.00, suggesting minimal variability in expert ratings. Overall, the data reflects a high level of agreement among experts regarding the importance and effectiveness of the training objectives within the entrepreneur training model.

Table 4.13 Model element Training Objective expert evaluation data analysis results

Element	Element detail	Mdn	IQR
Training objective	1. Cultivate innovative thinking and enhance entrepreneurial willingness	5.00	1.00
	2. Learn the basic processes and required skills for entrepreneurship	5.00	1.00
	3. Practical to up skills and teamwork capabilities	4.00	1.00
	4. Practice and apply learned professional knowledge to solve problems	5.00	1.00
	5. Cultivate entrepreneurial insight and adaptability	5.00	1.00
	6. Develop comprehensive entrepreneurial management and leadership abilities	5.00	1.00
	7. Learning continuous innovation and personal development	4.00	1.00
	8. Adapt to change market environments and technological trends	5.00	1.00
	9. Offer continue learning courses and industry research projects	4.00	1.00

The original sub-element Practical to up skills and teamwork capabilities is relatively vague and lacks clarity. The modified version provides a more direct and understandable expression of providing practical opportunities to enhance skills and teamwork capabilities.

Table 4.14 Model element Training Objective, Expert revision suggestions

Original Item	New Item
Practical to up skills and teamwork capabilities	Provide practical opportunities to enhance skills and teamwork capabilities

2.2 Model element Training content expert evaluation data analysis results. Expert evaluation of the data shows consistency in certain areas, with median (Mdn) scores indicating high agreement among experts. However, there are slight variations, as seen in the Interquartile Range (IQR) values, particularly in elements such as Integrated entrepreneurship thinking into various subjects and Learning entrepreneurship project incubation and guideline services. Overall, experts seem aligned on providing theoretical knowledge and case studies, as well as encouraging knowledge and skills related to entrepreneurship process management.

Table 4.15 Model element Training content expert evaluation data analysis results

Element	Element detail	Mdn	IQR
Training content	1. Provide theoretical knowledge and case studies of entrepreneurship	5.00	0.50
	2. Integrated entrepreneurship thinking into varieties subjects	4.00	0.00
	3. Encourage to knowledge and skills related to entrepreneurship process management	5.00	1.00
	4. Learning entrepreneurship project incubation and guideline services	4.00	1.00
	5. Entrepreneurship practice courses and internship in entrepreneur	5.00	1.00
	6. Encourage to knowledge and skills related to business management	4.00	1.00

Table 4.15 (Continued)

Element	Element detail	Mdn	IQR
	7. Share innovative entrepreneurship cases by seminars and others	4.00	1.00

The experts suggest modifying the phrase Integrated entrepreneurship thinking into various subjects to Embed entrepreneurial thinking in various subjects. This modification aims to emphasize a deeper and more ingrained integration of entrepreneurial thinking within the subjects, emphasizing its seamless incorporation into the educational content and curriculum design of each discipline. This phrasing intends to highlight not just the addition of entrepreneurial elements, but their fundamental integration and assimilation throughout various academic subjects, thereby enhancing the clarity and depth of entrepreneurial education across disciplines.

Table 4.16 Model element Training content, Expert revision suggestions

Original Item	New Item
Integrated entrepreneurship thinking into varieties subjects	Embed entrepreneurial thinking in various subjects

2.3 Model element Training Method expert evaluation data analysis results. The analysis of expert evaluation data for the training method element reveals a strong consensus among experts, with most elements receiving median scores (Mdn) of 5.00. This indicates unanimous agreement on the effectiveness of various training methods. Additionally, the interquartile range (IQR) values, ranging from 0.50 to 1.00, suggest relatively low variability in expert ratings, further supporting the consensus. These results underscore the overall agreement among experts regarding the importance and efficacy of the training methods assessed in the study.

Table 4.17 Model element Training Method expert evaluation data analysis results

Element	Element detail	Mdn	IQR
Training method	1. Teaching in classroom and group discussions	5.00	1.00
	2. Use simulation and entrepreneurship sandbox methods	4.00	0.50
	3. Guide student entrepreneurship teams through mentors	5.00	1.00
	4. Enterprise internships and facilitate industry exchange activities	5.00	1.00
	5. Continue guide student entrepreneurship projects	5.00	1.00
	6. Provide short course training by expert lectures and discussion	5.00	1.00
	7. Provide an online learning and cross-disciplinary cooperation platform	4.00	1.00

The expert suggests modifying the element Use simulation and entrepreneurship sandbox methods to Implement simulation exercises and entrepreneurship sandbox activities to simulate real-world entrepreneurial scenarios because virtual simulation teaching methods are not commonly used. It requires clear description of the element to make it clear to readers the scenarios in which this teaching method is used.

Table 4.18 Model element Training Method, Expert revision suggestions

Original Item	New Item
Use simulation and entrepreneurship sandbox methods	Implement simulation exercises and entrepreneurship sandbox activities to simulate real-world entrepreneurial scenarios

2.4 Model element Training Teacher expert evaluation data analysis results. The evaluation data for the training teacher element provides valuable insights into the expertise deemed essential by the experts. The median scores (Mdn) range from 4.00 to 5.00, indicating general agreement among the experts on the importance of these attributes.

Specifically, employing teachers with entrepreneurship knowledge and educational backgrounds, as well as mentors with industry backgrounds and project guidance capabilities, received median scores of 5.00, suggesting unanimous agreement on their significance.

However, there is slightly less consensus on elements such as teachers' experience and guidance capabilities with project management, and employing mentors who are experts in specific fields, as indicated by median scores of 4.00. Nonetheless, with interquartile range (IQR) values mostly at 1.00, there appears to be moderate consensus among experts on these attributes.

Overall, the data highlights a collective understanding among experts regarding the crucial qualifications and expertise required of training teachers and mentors, with some variability in ratings for specific attributes.

Table 4.19 Model element Training Teacher expert evaluation data analysis results

Element	Element detail	Mdn	IQR
Training teacher	1. Employ teachers with entrepreneurship knowledge and educational backgrounds	5.00	1.00
	2. Teachers should have experience and guidance capabilities with project management	4.00	1.00
	3. Teachers should have professional backgrounds and problem-solving abilities	4.00	1.00

Table 4.19 (Continued)

Element	Element detail	Mdn	IQR
	4. Mentors should have industry backgrounds and project guidance capabilities	5.00	0.00
	5. Employ mentors who are experts in specific fields in laws, finance, tax and another related	4.00	0.00

2.5 Model element Training Environment expert evaluation data analysis results. The expert evaluation data for the training environment element reveals a comprehensive analysis of various aspects. The median scores (Mdn) range from 4.00 to 5.00, indicating a consensus among experts on the significance of these elements. Specifically, providing facilities for entrepreneurial learning spaces and communities, entrepreneurship incubators and laboratory facilities, shared entrepreneurship resources and periodic mentor guidance, and providing entrepreneurship internships and office space for entrepreneurial practice projects received median scores of 5.00, suggesting unanimous agreement on their importance.

However, there is slightly less agreement on elements such as providing simulation technology to simulate the entrepreneurial process, startup networks and connections for early-stage enterprises, cooperation between university and enterprise, and creating a favorable ecosystem for innovation and entrepreneurship, as indicated by median scores of 4.00. Nonetheless, the interquartile range (IQR) values, mostly at 1.00, suggest moderate consensus among experts on these elements.

Overall, the data underscores a collective understanding among experts regarding the essential components of the training environment for entrepreneurship, with some variability in ratings for specific elements.

Table 4.20 Model element Training Environment expert evaluation data analysis results

Element	Element detail	Mdn	IQR
Training environment	1. Provide facilities for entrepreneurial learning spaces and communities	5.00	0.00
	2. Provide simulation technology to simulate the entrepreneurial process	4.00	0.00
	3. Provide entrepreneurship incubators and laboratory facilities	5.00	1.00
	4. Provide shared entrepreneurship resources and periodic mentor guidance	5.00	1.00
	5. Provide entrepreneurship internships and office space for entrepreneurial practice projects	5.00	0.50
	6. Provide startup networks and connections for early-stage enterprises	4.00	1.00
	7. Cooperation between university and enterprise (entrepreneurship practice projects on campus)	4.00	1.00
	8. Create a favorable ecosystem for innovation and entrepreneurship (culture, public opinion)	4.00	1.00

2.6 Model element T Entrepreneur practice expert evaluation data analysis results. Based on the expert evaluation results for the Entrepreneur practice element:

Encouraging and guiding students to participate in university entrepreneurship training programs and exploring university science and technology project proposals both received moderate agreement among experts, with median scores of 4.00.

Virtual simulation entrepreneurship training courses also received a median score of 4.00, indicating moderate agreement.

In contrast, encouraging students to participate in entrepreneurship competitions, engage in university-enterprise cooperation practice projects, and execute personal entrepreneurial plans all received high median scores of 5.00, indicating strong agreement among experts regarding their effectiveness.

Providing guidance on managing the entrepreneurial process for students received a median score of 4.00, suggesting moderate agreement among experts.

Overall, while there is consensus on the effectiveness of practices like entrepreneurship competitions, university-enterprise cooperation projects, and personal entrepreneurial plans, there may be room for further discussion and analysis to enhance the effectiveness of other practices such as participating in university entrepreneurship training programs and virtual simulation courses.

Table 4.21 Model Element Entrepreneur practice evaluation Data Analysis Results

Element	Element detail	Mdn	IQR
Entrepreneur practice	1. Encourage and guide students to participate in university entrepreneurship training programs	4.00	1.00
	2. Encourage and guide students to explore university science and technology project proposals	4.00	0.00
	3. Encourage and guide students to engage in virtual simulation entrepreneurship training courses	4.00	0.50
	4. Encourage and guide students to participate in entrepreneurship competitions	5.00	0.50
	5. Encourage and guide students to engage in university-enterprise cooperation practice projects	5.00	1.00
	6. Encourage and guide students in executing personal entrepreneurial plans	5.00	1.00
	7. Provide guidance on managing the entrepreneurial process for students	4.00	1.00

The experts suggest changing the element Encourage and guide students to explore university science and technology project proposals to Encourage and guide students to explore university science and technology projects with entrepreneurial potential. This modification emphasizes the importance of researching university science and technology projects that have entrepreneurial potential, as it can effectively increase students' entrepreneurship rates and success rates.

Table 4.22 Model element Entrepreneur practice, Expert revision suggestions

Original Item	New Item
Encourage and guide students to explore university science and technology project proposals	Encourage and guide students to explore university science and technology projects with entrepreneurial potential.

2.7 Model element Entrepreneur policy expert evaluation data analysis results. From the data analysis, it is evident that most elements of entrepreneurial policy received median scores of 4.00 or above, indicating a general level of acceptance among experts for these policies. Particularly, high scores were observed in elements such as providing entrepreneurship learning materials and platform resources, and offering startup funding and funding policies, with median scores of 5.00 for both, and relatively small IQRs (interquartile ranges), indicating a high level of consensus among the experts regarding the acceptance of these policies. This suggests that these policies are fairly well-regarded in supporting entrepreneurs and enjoy widespread acceptance among the experts.

However, it is noteworthy that the incentive policies for internal entrepreneurship mentors received a relatively low median score of 3.00, with an IQR of 1.00, indicating a significant level of divergence in expert opinions regarding this policy. This may suggest that there are some deficiencies in the existing incentive policies for internal mentors that need to be addressed to enhance their attractiveness and effectiveness. Possible avenues for improvement could include increasing training and support for mentors, providing additional incentives to encourage mentor participation, among others.

Table 4.23 Model element Entrepreneur policy expert evaluation data analysis results

Element	Element detail	Mdn	IQR
Entrepreneur policy	1. Provide entrepreneurship learning materials and platform resources	5.00	1.00
	2. Formulate entrepreneurship policies and support measures	4.00	1.00
	3. Provide startup funding and funding policies for entrepreneurship projects	5.00	0.50
	4. Establish entrepreneurship training subsidies and incentive policies	4.00	0.50
	5. Offer funding support and tax incentives for entrepreneurship incubation projects	5.00	1.00
	6. Develop entrepreneurship project selection and certification policies	4.00	1.00
	7. Provide funding for continuous entrepreneurship development and technology transfer policies	4.00	0.50
	8. Formulate entrepreneurship mentor and professional service subsidy policies	4.00	0.00
	9. Develop incentive policies for internal entrepreneurship mentors	3.00	1.00

The experts have proposed revisions to two elements in the Entrepreneur policy category:

Original Item: Develop entrepreneurship project selection and certification policies. New Item: Develop policies for selecting, certifying, and grading support for entrepreneurship. Reason: The revision aims to broaden the scope of the original item by including not only the selection and certification aspects but also incorporating

grading support for entrepreneurship projects. This expanded item encompasses a more comprehensive approach to policy development, ensuring that all aspects of project support are considered.

Original Item: Develop incentive policies for internal entrepreneurship mentors. New Item: Develop incentive policies for internal entrepreneurial mentors (such as title evaluation, workload, and policies supporting collaborative creation by teachers and students). Reason: The revision seeks to provide a more detailed and specific description of the types of incentives for internal entrepreneurial mentors. By specifying examples such as title evaluation, workload considerations, and policies supporting collaborative creation between teachers and students, the new item offers clarity on the nature of incentives and how they can be implemented to support and motivate mentors effectively. Despite receiving a moderate Mdn score of 3.0, experts chose to retain and modify the element "Develop incentive policies for internal entrepreneurship mentors." This decision likely stems from their recognition of its significance in fostering internal entrepreneurial culture and supporting mentors. They see potential for improvement through adjustments, aiming to enhance practicality and effectiveness. Additionally, considering the need to build on prior efforts and with a comprehensive policy perspective, experts affirm its crucial role within the overall framework, impacting key aspects of mentor support and entrepreneurial development.

Table 4.24 Model element Entrepreneur policy, Expert revision suggestions

Original Item	New Item
Develop entrepreneurship project selection and certification policies	Develop policies for selecting, certifying, and grading support for entrepreneurship
Develop incentive policies for internal entrepreneurship mentors	Develop incentive policies for internal entrepreneurial mentors (such as title evaluation, workload, and policies supporting collaborative creation by teachers and students)

2.8 Model element Training evaluation expert evaluation data analysis results. The expert evaluation data for the Training evaluation element reveals a high level of agreement among experts on certain aspects. For instance, all experts unanimously agreed on establishing entrepreneurship learning objectives and assessment criteria, indicating a strong consensus on the importance of clear learning goals. Similarly, there is unanimous agreement on conducting assessments and feedback on entrepreneurial intentions and capabilities, suggesting a shared understanding of the necessity for continuous feedback in entrepreneurial training.

However, when it comes to evaluating entrepreneurship practices and project outcomes, there is less uniformity among experts. While the majority agree on the importance of these assessments, there is a slightly wider range of responses, as indicated by the interquartile range (IQR) of 1.00. This suggests some variability in opinions regarding the best methods for evaluating entrepreneurial endeavors and their outcomes.

Overall, the data highlights areas of consensus as well as points of divergence among experts, emphasizing the need for further discussion and refinement in certain aspects of training evaluation to ensure comprehensive and effective entrepreneurship training programs.

Table 4.25 Model Element Training Evaluation Expert Evaluation Data Analysis Results

Element	Element detail	Mdn	IQR
Training evaluation	1. Establish entrepreneurship learning objectives and assessment criteria	5.00	0.00
	2. Conduct assessments and feedback on entrepreneurial intentions and capabilities	5.00	1.00
	3. Establish evaluation criteria for entrepreneurship projects	5.00	1.00
	4. Conduct presentations and defenses of entrepreneurship project outcomes	5.00	1.00
	5. Evaluate and track the performance of entrepreneurship practices	4.00	1.00
	6. Conduct evaluations and adjustments of entrepreneurship project outcomes	4.00	1.00
	7. Establish certification standards for continuing entrepreneurship education	4.00	1.00
	8. Evaluate entrepreneurship achievements and societal impacts	4.00	1.00

The expert suggests changing the element Evaluate entrepreneurship achievements and societal impacts to Assessing entrepreneurial achievements and societal impacts, and providing recognition and rewards. This change is proposed to emphasize not only the evaluation aspect but also the subsequent action of recognizing and rewarding entrepreneurial achievements and societal impacts.

Table 4.26 Model element Training evaluation, Expert revision suggestions

Original Item	New Item
Evaluate entrepreneurship achievements and societal impacts	Assessing entrepreneurial achievements and societal impacts, and providing recognition and rewards

2.9 Model element Continue learning expert evaluation data analysis results.

The expert evaluation data analysis for the Continue learning element indicates a high level of consensus among the experts. The Median (Mdn) scores for all elements are consistently high, ranging from 4.00 to 5.00, suggesting a strong agreement among the experts regarding the importance of these aspects in the training program.

The Interquartile Range (IQR) values, although slightly varied, indicate that there is generally minimal dispersion in the expert ratings, with most falling within a narrow range. This consistency further supports the notion of broad consensus among the experts.

Overall, the expert evaluation data suggests a unanimous agreement on the significance of providing continue learning opportunities, interdisciplinary platforms, industry updates, mentorship services, and project support for entrepreneurs within the training program. There's also acknowledgment of the importance of facilitating the sharing of innovative cases and seminars, albeit with slightly lower agreement compared to other elements.

Table 4.27 Model Element Continue Learning Expert Evaluation Data Analysis Results

Element	Element detail	Mdn	IQR
Continue learning	1. Provide continue learning opportunities and resources for entrepreneurs	5.00	0.00
	2. Offer entrepreneurs platforms for interdisciplinary learning and exchange	5.00	1.00
	3. Provide entrepreneurs with industry updates and trend analysis	5.00	1.00
	4. Offer entrepreneurs mentorship, guidance, and coaching services	5.00	1.00
	5. Facilitate the sharing of innovative entrepreneurship cases and seminars for entrepreneurs	4.00	1.00
	6. Provide industry research and project support for entrepreneurs	4.00	1.00

3. Entrepreneur training development model for undergraduate students at Liuzhou Institute of Technology. After conducting interviews with 9 experts and evaluations from 21 experts, and making modifications based on their feedback, a total of 7 items were revised. This resulted in 9 main elements and 66 sub-elements for the entrepreneur training model. The specific model is illustrated in the diagram below:

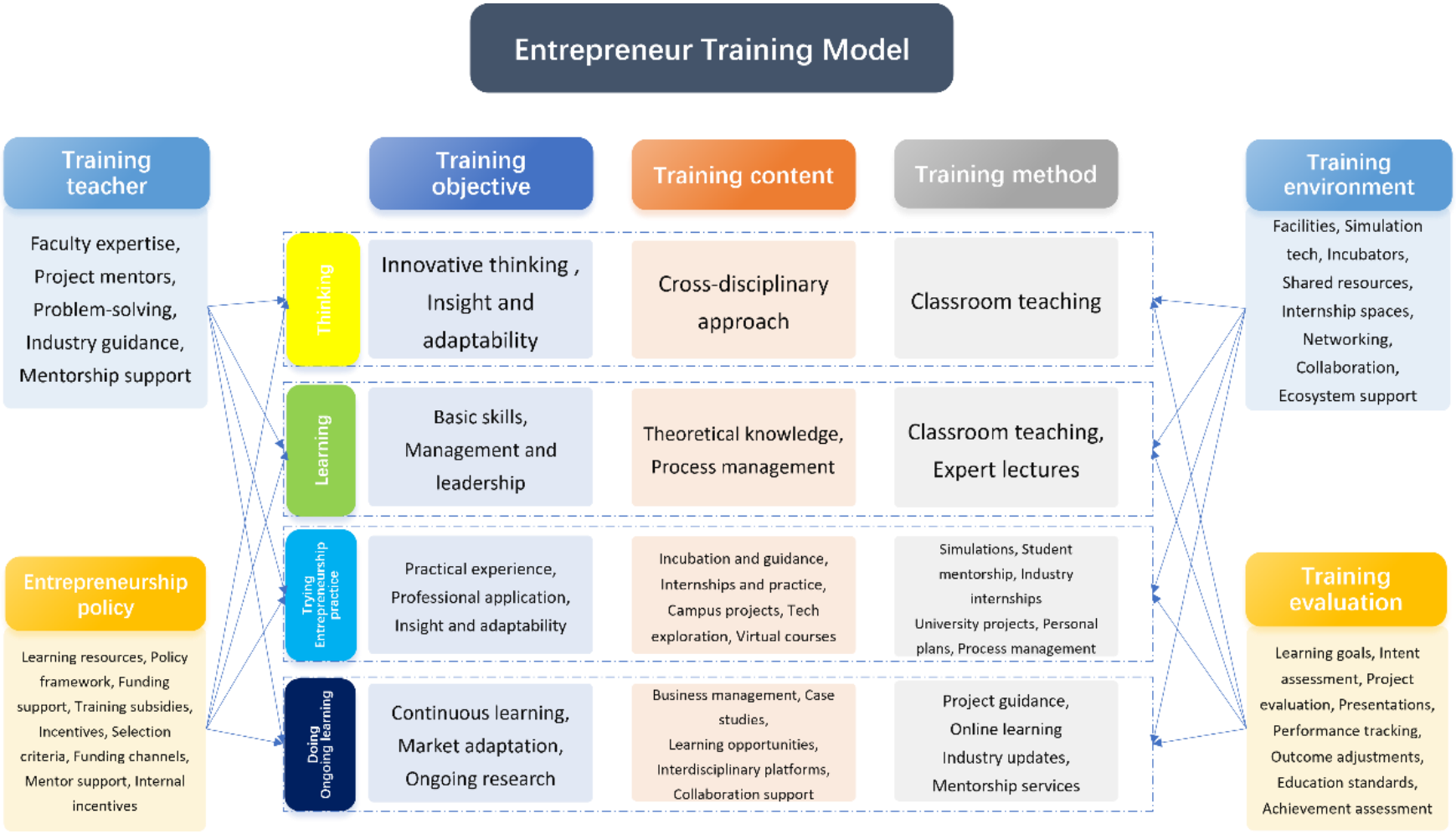


Figure 4.1 The entrepreneur training model for undergraduate students at Liuzhou Institute of Technology

3.1 Model User Guide

This entrepreneurial training model divides the process of entrepreneurship training into four stages: thinking, learning, trying, and doing. Each stage has corresponding training objectives, training content, and training methods. Training teachers, training environments, training evaluations, and entrepreneurship policies play roles in the four training stages, with different impacts on the training process at each stage. The specific guidelines for using each element of the model are as follows when used in practice:

1) Define Training Objectives

Training objectives determine the direction and standards of the training. Based on the entrepreneurial vision and needs of the trainees, specify the specific outcomes they aim to achieve through the training. Training objectives should be specific, measurable, achievable, relevant, and time-bound.

2) Design Training Content

Training content determines the substance and scope of the training. Based on the training objectives of the trainees, select and arrange training content that suits their entrepreneurial knowledge, skills, attitudes, and behaviors. Training content should be consistent, practical, and flexible.

3) Select Training Methods

Training methods determine the manner and form of the training. Based on the training content determined in the previous step, choose and utilize appropriate teaching and learning methods. Training methods should be adaptive, stimulating, facilitating, reflective, and effective.

4) Identify Training Teachers

Training Teachers determine the personnel and quality of the training. Based on the training objectives, content, and methods, identify and select suitable teachers, mentors, and experts. Training Teachers should possess professionalism, mastery, experience, affinity, and guidance.

5) Create Training Environment

The training environment determines the conditions and atmosphere of the training. Based on the training objectives, content, methods, and

instructors, create and select appropriate physical, social, and cultural environments. The training environment should be safe, comfortable, and open.

6) Engage in Entrepreneurial Practice

Entrepreneurial practice determines the effectiveness and value of the training. Based on the training objectives, content, methods, instructors, and environment, participate in and experience entrepreneurial projects, activities, and processes. Entrepreneurial practice should be authentic, challenging, and feedback-oriented.

7) Entrepreneurial Policy Support

Entrepreneurial policy determines the support and regulation of the training. Based on the training objectives, introduce entrepreneurial policies from the government and society, and the school should also enact relevant entrepreneurial support policies. Entrepreneurial policies should be rational, fair, and transparent.

8) Conduct Training Evaluation

Training evaluation determines the improvement and refinement of the training. Based on the training objectives, content, methods, instructors, environment, practice, and policies, conduct and accept training evaluations on aspects such as entrepreneurs, entrepreneurial projects, and entrepreneurial outcomes. Training evaluations should be objective, comprehensive, and timely.

9) Continue learning

Continue learning is the continuation and development of the entrepreneurial training model, enabling entrepreneurs to continuously update and expand their entrepreneurial knowledge and skills, optimize and improve their entrepreneurial projects and activities, and adapt and respond to their entrepreneurial environment and policies. Continue learning should be sustainable and successful.

3.2 The elements of the entrepreneur training model may have the following logical relationships:

Training in entrepreneurship is designed as a comprehensive and interconnected system where each component significantly influences and supports the others, ensuring that the training objectives are met effectively. The primary goal of training sets specific, measurable, achievable, relevant, and timely benchmarks,

which guide the overall framework including the content, methods, and environment of the training.

The training content is meticulously tailored to align with the specific objectives, crafted to meet the unique needs and levels of the entrepreneurs, reflecting the underlying philosophy and characteristics of entrepreneurial education while emphasizing practicality, innovativeness, and flexibility. This content is delivered through varied and adaptive methods that ignite entrepreneurs' interests and motivations, fostering active participation and interaction, and are designed to be effective, diverse, and personalized to cater to individual needs. The role of the training teacher is crucial, as they are expected to possess a deep understanding of both the objectives and the content, proficiently applying and designing innovative methods while leveraging their own entrepreneurial and teaching experiences, with their professionalism, affinity, and guidance being pivotal in achieving the objectives. The training environment supports this by providing the necessary resources, ensuring a safe, comfortable, and open space that enhances the effectiveness of the training process. Entrepreneurial practice serves as a real-world application and extension of the taught methods, critically testing the training objectives by offering authenticity, presenting challenges, and providing valuable feedback. Entrepreneur policy underpins the framework by facilitating the achievement of objectives, encouraging innovation, standardizing operations, safeguarding trainers' rights, and providing practical application opportunities. Training evaluation, an integral component, uses the standards set by the objectives to objectively, comprehensively, and timely assess all training aspects, incorporating feedback to influence entrepreneurial policy formulation. Continued learning is encouraged as an ongoing response to the evolving training objectives, content, and methods, involving teachers, refining practices, and driving the evaluation process, characterized by autonomy, proactivity, and persistence to ensure the training's relevance and effectiveness over time.

This holistic approach to entrepreneurial training ensures that each element is interrelated and mutually reinforcing, creating a dynamic and effective learning environment that adapts to the needs of the entrepreneurs and the demands of the market.

The specific relationships among the model elements are illustrated in the diagram below:

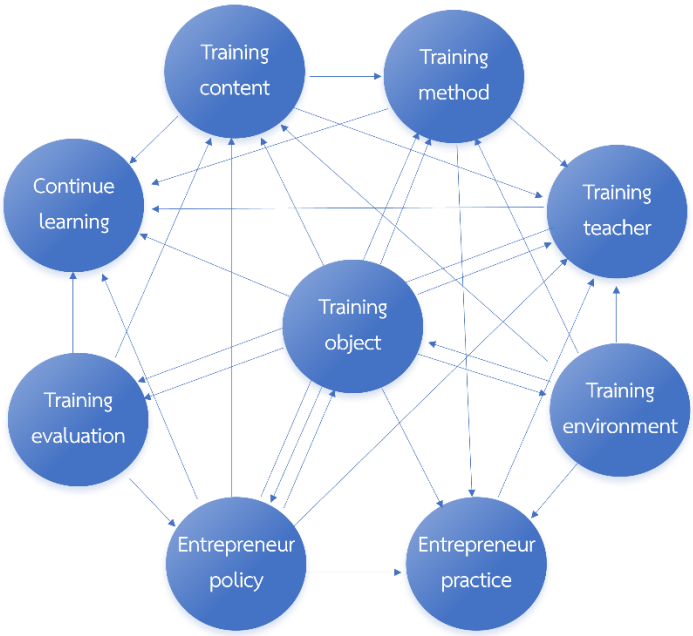


Figure 4.2 Entrepreneur training model Element Relationship Diagram

Step 3: Results of data analysis of expert evaluations on the entrepreneur training model for undergraduate students at Liuzhou Institute of Technology.

This step will evaluate the entrepreneur training model by inviting 9 experts to assess the model, including 3 entrepreneurship experts, 3 modeling experts, and 3 HR specialists. The specific information of the experts is shown in the table below:

Table 4.28 Personal information of 9 experts involved in model evaluation

Item	Data	Frequency	Percentage
Gender	Male	6	66.67
	Female	3	33.33
	Total	9	100
Age	Below 35 yrs.	0	
	36-50 yrs.	6	66.67
	Over 50 yrs.	3	33.33
	Total	9	100
Academic Degree	Doctor's degree	5	55.56
	Master's degree	4	44.44
	Bachelor degree	0	
	Total	9	100
Working life	10-15 yrs.	5	55.56
	16-25 yrs.	2	22.22
	26-30 yrs.	2	22.22
	Total	9	100

Among the 9 experts involved in the model evaluation, 6 are male (66.67%) and 3 are female (33.33%). In terms of age, 6 experts (66.67%) are between 36 and 50 years old, while 3 experts (33.33%) are over 50 years old, with no experts below 35 years old. Regarding academic degrees, 5 experts (55.56%) hold doctoral degrees, 4

experts (44.44%) hold master's degrees, and no experts hold bachelor's degrees. In terms of work experience, 5 experts (55.56%) have 10-15 years of experience, 2 experts (22.22%) have 16-25 years of experience, and 2 experts (22.22%) have 26-30 years of experience.

Part 2 The expert evaluation questionnaire for designing the entrepreneur training model comprises four sections: Overall Effectiveness of the Model, Completeness of Model Elements, Interrelationship of Model Elements, and Additional Evaluation Aspects, totaling 25 questions. The collected expert assessment data will be summarized and analyzed as shown in the following table:

Table 4.29 Personal information of 9 experts involved in model evaluation

Questionnaire Sections	No. of agree	percentage
Part 1: Overall Effectiveness of the Model		
1. Do you think this model can effectively cultivate learners' innovative thinking and entrepreneurial willingness?	9	100.00
2. Do you believe this model comprehensively covers the knowledge and skills required for entrepreneurship in the provided training content?	9	100.00
3. Does this model effectively stimulate learners' entrepreneurial enthusiasm and enhance practical abilities through the adopted training methods?	9	100.00
4. Regarding the role of training teachers, do you think this model can provide sufficient support from experienced and professional teachers?	9	100.00
5. In terms of the provided training environment, do you think this model can offer enough resources and space to support learners' entrepreneurial practices?	9	100.00
6. Do you believe this model can effectively promote learners' entrepreneurial practices and project outcomes?	8	88.89

Table 4.29 (Continued)

Questionnaire Sections	No. of agree	percentage
7. With respect to resource allocation and policy settings, do you think this model can provide ample support and incentive measures for learners?	9	100.00
8. Regarding assessment and evaluation, do you think this model can accurately assess learners' entrepreneurial abilities and project presentations?	9	100.00
9. In terms of continuous learning, do you think the model provides effective and comprehensive follow-up learning plans for entrepreneurs?	9	100.00
Part 2: Completeness of Model Elements		
1. In the setting of training objectives, do you think these objectives cover the comprehensiveness of entrepreneurship education?	9	100.00
2. Regarding the arrangement of training content, do you think these contents cover various aspects required for entrepreneurship?	9	100.00
3. Concerning the selection of training methods, do you think these methods fully utilize different teaching tools and resources?	9	100.00
4. For the requirements of training teachers, do you think they possess sufficient professionalism and practical experience?	9	100.00
5. In the construction of training environment, do you think sufficient resources and support are provided?	9	100.00
6. Regarding the promotion of entrepreneurial practices, do you think sufficient practical opportunities and support are provided?	9	100.00

Table 4.29 (Continued)

Questionnaire Sections	No. of agree	percentage
7. Concerning resource allocation and policy settings, do you think sufficient funding and policy support are provided?	9	100.00
8. Regarding assessment and evaluation systems, do you think they possess comprehensiveness and objectivity?	9	100.00
Part 3: Interrelationship of Model Elements		
1. In the evaluation of overall effectiveness, do you think there is good coordination and cooperation among various elements?	9	100.00
2. Regarding the assessment of the completeness of model elements, do you think they form an organic whole?	9	100.00
3. In the interrelationship of model elements, do you think there are deficiencies or conflicts between some elements?	8	88.89
4. Do you think there are relationships between some elements that can be further strengthened or improved?	9	100.00
Part 4: Additional Evaluation Aspects		
1. Do you think this model has long-term sustainability and can continuously provide effective entrepreneurship education?	9	100.00
2. In terms of social impact and contribution, do you think this model can have a positive impact on society, promoting economic growth and job creation?	9	100.00

Table 4.29 (Continued)

Questionnaire Sections	No. of agree	percentage
Part 4: Additional Evaluation Aspects		
3. Regarding internationalization and cross-cultural adaptability, do you think this model possesses sufficient characteristics to operate effectively in different cultural backgrounds and provide support for cross-border entrepreneurship?	8	88.89
4. Regarding the innovativeness and forward-looking nature of the model, do you think it can keep up with the times and continuously innovate and improve?	9	100.00

The expert evaluation data indicates unanimous agreement across all sections of the questionnaire, with each question receiving a 100% agreement rate. This suggests a high level of satisfaction with the model's effectiveness, completeness, and interrelationship of elements. However, some areas for improvement were identified, particularly in promoting entrepreneurial practices and enhancing internationalization and cross-cultural adaptability, where agreement rates were slightly lower at 88.89%. Overall, the data reflects positive feedback on the model's strengths and highlights areas for further enhancement.

The suggested modifications proposed by the experts are to incorporate a feedback mechanism from students into the evaluation system to better understand their needs and feedback.

Step 4: Results of data analysis of the implementation of the entrepreneur training model for undergraduate students at Liuzhou Institute of Technology

In this phase of the study, we first develop training courses based on the entrepreneur training model. The courses comprise nine key components: Training Objectives, Training Content, Training Method, Training Teacher, Training Environment, Entrepreneur Practice, Entrepreneur Policy, Training Evaluation, and Continue learning. Next, we will pilot the implementation of the training curriculum by conducting Course experiment with students using the courses developed with the new model. we will evaluate student satisfaction with the courses across five dimensions: course content, instructional methods, learning outcomes, trainers, and training organization. The satisfaction results will be assessed using Likert scales to evaluate the curriculum quality, guide future improvements, and validate the effectiveness of the model. Additionally, we will assess whether there is a significant improvement in students' course performance through pre-test and post-test.

Part 1: The detailed plan for course implementation is included in the appendix.

We selected 50 students from across the university to participate in this course experiment. These students come from various majors and grades. The selection criteria are as follows:

1. Successfully completed the Fundamentals of Innovation and Entrepreneurship course.

2. Received approval for a provincial-level innovation and entrepreneurship training program project.

3. Participated in the China National College Students' "Internet+" Innovation and Entrepreneurship Competition and won awards at or above the provincial level.

The data analysis of the Course experiment is as follows:

Table 4.30 Basic information of 50 students participating in the Course experiment

Items	Personal Information	No.	Percentage
Gender	Male	32	64.00
	Female	18	36.00
	Total	50	100
Grade	First-year student	5	10.00
	Second-year student	11	22.00
	Third-year student	18	36.00
	Fourth-year student	16	32.00
	Total	50	100
Major	Chemical Engineering	7	14.00
	Civil Engineering	4	8.00
	Economics and Management	9	18.00
	Language Education	4	8.00
	Automotive Engineering	6	12.00
	Mechanical Engineering	5	10.00
	Information Technology	7	14.00
	Art Design	8	16.00
	Total	50	100

This data analysis covers the basic information of 50 students participating in the Course experiment. Among them, males account for 64%, while females make up 36%. In terms of grade, juniors are the most numerous, accounting for 36%, followed by seniors at 32%; freshmen and sophomores account for 10% and 22%, respectively. Regarding majors, Economics and Management and Art Design are the most prevalent, accounting for 18% and 16%, respectively; Chemical Engineering and Information Technology each account for 14%, while other majors range from 8% to 12%. Additionally, 72% of students indicate having entrepreneurial experience, while 28% do not.

Part 2: Student Satisfaction Data Analysis for Entrepreneurship Process Course Developed Based on Entrepreneur training model.

After the Course experiment ended, a survey was conducted on 50 students who participated in the entrepreneurship training. The questionnaire contained a total of 36 questions addressing the nine elements of the model: Training Objectives, Training Content, Training Method, Training Teacher, Training Environment, Entrepreneur Practice, Entrepreneur Policy, Training Evaluation, and Continue Learning. The survey aimed to assess student satisfaction with these nine aspects of the training. Data were collected using a five-point scale. After collecting and organizing the data, mean and standard deviation were used to analyze the data, and the satisfaction for each individual element was rated. The specific data analysis results are as follows:

Table 4.31 Data analysis results of student satisfaction survey on the course element Training Objectives.

(n=50)

Items	$\overline{X}$	S.D.	Level	Ranking
Training Objectives				
Are the training objectives clear?	3.88	0.63	High	3
Do the objectives align with your needs?	4.16	0.77	High	2
Do the objectives guide your learning direction?	3.82	0.79	High	4
Is the difficulty level appropriate?	4.82	0.48	The highest	1
Total Average	**4.17**	**0.67**	**High**	

Based on the data analysis results, it can be concluded that students are generally satisfied with the Training Objectives of the course. The overall average satisfaction score is 4.17, which is considered high. Among the specific questions, the question 4 received the highest score of 4.82 with the lowest standard deviation of 0.48, indicating strong agreement among students. The question 2 also scored high at 4.16, reflecting that students feel the training objectives are relevant to their needs.

The clarity of the training objectives and their ability to guide learning direction were also rated high, with scores of 3.88 and 3.82, respectively. These results suggest that the training objectives are well-designed and meet students' expectations in terms of clarity, relevance, and appropriateness.

Table 4.32 Data analysis results of student satisfaction survey on the course element Training Content.

(n=50)

Items	$\overline{X}$	S.D.	Level	Ranking
Training Content				
Are you satisfied with the course content arrangement?	4.88	0.43	The highest	1
Does the content cover key knowledge and skills?	4.82	0.69	The highest	2
Does the content enhance your abilities?	4.80	0.50	The highest	3
Does the content follow entrepreneurship trends?	4.78	0.52	The highest	4
Total Average	**4.82**	**0.54**	**The highest**	

Based on the data analysis results, it can be concluded that students are highly satisfied with the course content. The overall average satisfaction score is 4.82, which is at the highest level. Specific questions such as Are you satisfied with the course content arrangement? received the highest score of 4.88, with a low standard deviation of 0.43, indicating strong consensus among students. The question does the content cover key knowledge and skills? also received a very high score of 4.82, reflecting students' perception of comprehensive and targeted content. Scores for does the content enhance your abilities and does the content follow entrepreneurship trends were also high, at 4.80 and 4.78 respectively. These results demonstrate that the course content is highly recognized and satisfying to students in terms of arrangement, coverage of knowledge and skills, ability enhancement, and alignment with entrepreneurship trends.

Table 4.33 Data analysis results of student satisfaction survey on the course element Training Method.

(n=50)

Items	$\overline{X}$	S.D.	Level	Ranking
Training Method				
Are you satisfied with the teaching methods?	3.88	0.59	High	3
Do the methods stimulate your interest?	3.84	0.77	High	4
Is the course interactive and engaging?	4.78	0.42	The highest	1
Do the methods improve training effectiveness?	4.78	0.44	The highest	1
Total Average	**4.32**	**0.56**	**High**	

Students generally show high satisfaction with the course teaching methods. The overall average satisfaction score is 4.32, indicating a high level of satisfaction. Specifically, the questions How interactive and engaging is the course and do the methods improve training effectiveness both received the highest score of 4.78, with relatively low standard deviations, indicating that students generally perceive the course as highly interactive and effective in enhancing training outcomes. The scores for Are you satisfied with the teaching methods and Do the methods stimulate your interest in learning were 3.88 and 3.84 respectively, slightly lower than the other two questions but still relatively high. Overall, these results demonstrate that the course teaching methods are widely recognized and highly satisfactory among students in terms of interactivity, effectiveness, and interest stimulation in learning.

Table 4.34 Data analysis results of student satisfaction survey on the course element Training Teacher.

(n=50)

Items	$\overline{X}$	S.D.	Level	Ranking
Training Teacher				
Are you satisfied with the teachers' professional level?	4.76	0.53	The highest	1
Do teachers effectively impart knowledge and skills?	4.74	0.44	The highest	2
How do you evaluate the teachers' attitude and style?	4.28	0.64	High	3
Do teachers support you outside the classroom?	3.76	0.83	High	4
Total Average	**4.39**	**0.61**	**High**	

Based on these data analysis results, it can be concluded that students hold a high level of satisfaction towards the training teachers. The overall average satisfaction score is 4.39, indicating a high level of satisfaction. Specifically, questions such as Are you satisfied with the teachers' professional level? and Do teachers effectively impart knowledge and skills? received the highest scores of 4.76 and 4.74, respectively, demonstrating strong approval of the teachers' competence and effectiveness in teaching. The question regarding the evaluation of teachers' attitude and style received a score of 4.28, which is also high, indicating positive perceptions overall. However, the question Do teachers support you outside the classroom? received a score of 3.76, indicating slightly lower satisfaction compared to other aspects. Overall, these results indicate that students highly appreciate the professionalism and effectiveness of the training teachers, although there is room for improvement in terms of support outside the classroom.

Table 4.35 Data analysis results of student satisfaction survey on the course element Training Environment.

(n=50)

Items	$\overline{X}$	S.D.	Level	Ranking
Training Environment				
Are you satisfied with the training environment?	3.80	0.79	High	4
Does the environment support your training?	4.80	0.46	The highest	1
Does the environment support your practice?	4.40	0.63	High	3
Does the environment follow entrepreneurship trends?	4.72	0.45	The highest	2
Total Average	**4.43**	**0.58**	**High**	

Students generally show high satisfaction with the training environment. The overall average satisfaction score is 4.43, indicating a high level of satisfaction. Specifically, the question 1 scored 3.80, although relatively high, it was slightly lower than other questions. Meanwhile, the questions Does the environment support your training, Does the environment support your practice, and Does the environment follow entrepreneurship trends scored 4.80, 4.40, and 4.72 respectively, ranking first, third, and second. These scores demonstrate that students highly appreciate the supportiveness of the training environment and its alignment with entrepreneurship trends. In summary, these results indicate that students generally perceive the training environment as supportive of training and practice, aligned with entrepreneurship trends, and overall receive a high satisfaction rating.

Table 4.36 Data analysis results of student satisfaction survey on the course element Training Practice.

(n=50)

Items	$\overline{X}$	S.D.	Level	Ranking
Entrepreneur Practice				
Are you satisfied with the practice opportunities?	4.52	0.50	The highest	4
Does the practice help you face real challenges?	4.84	0.47	The highest	1
Is the practice related to your future plans?	4.82	0.45	The highest	2
Does the practice match your project needs?	4.82	0.49	The highest	2
Total Average	**4.75**	**0.48**	**The highest**	

Overall, students demonstrate extremely high satisfaction with entrepreneurial practice. The overall average satisfaction score is 4.75, indicating the highest level of satisfaction. Specifically, the question Are you satisfied with the practice opportunities? scored 4.52, although high, it was slightly lower than other questions. Meanwhile, the questions Does the practice help you face real challenges?, Is the practice related to your future plans?, and Does the practice match your project needs? scored 4.84, 4.82, and 4.82 respectively, ranking first, second, and second. These scores highlight the strong support and approval students have towards entrepreneurial practice. In conclusion, these results indicate that students generally perceive entrepreneurial practice as excelling in providing opportunities, addressing real challenges, aligning with future plans, and meeting project needs, and overall, receive exceptionally high satisfaction ratings.

Table 4.37 Data analysis results of student satisfaction survey on the course element Training Policy.

(n=50)

Items	$\overline{X}$	S.D.	Level	Ranking
Entrepreneur Policy				
Are you satisfied with the policies and support?	4.74	0.44	The highest	1
Do policies promote your entrepreneurial intentions?	4.68	0.47	The highest	2
Do policies support innovation and activities?	4.64	0.48	The highest	3
Do policies increase the success rate of entrepreneurship?	3.86	0.87	High	4
Total Average	**4.48**	**0.57**	**High**	

Students generally exhibit high satisfaction with entrepreneurship policies. The overall average satisfaction score is 4.48, indicating a high level of satisfaction. Specifically, the question "Are you satisfied with the policies and support?" scored 4.74, ranking first, demonstrating students' high satisfaction with policies and support. The questions "Do policies promote your entrepreneurial intentions?" and "Do policies support innovation and activities?" scored 4.68 and 4.64 respectively, ranking second and third, reflecting students' approval of policies in promoting entrepreneurial intentions and supporting innovative activities. However, the question "Do policies increase the success rate of entrepreneurship?" scored 3.86, slightly lower than the other questions, indicating lower satisfaction among students in this aspect. In conclusion, these results indicate that students generally perceive entrepreneurship policies as effective in supporting and promoting entrepreneurial intentions and innovative activities, but there is room for improvement in enhancing the success rate of entrepreneurship.

Table 4.38 Data analysis results of student satisfaction survey on the course element Training Evaluation.

(n=50)

Items	$\overline{X}$	S.D.	Level	Ranking
Training Evaluation				
Are the evaluation methods fair and reasonable?	4.10	0.61	High	2
Do evaluation results reflect your performance?	3.66	0.82	High	4
Can evaluations help you improve?	3.98	0.66	High	3
Are evaluations paired with incentives?	4.84	0.41	The highest	1
Total Average	**4.15**	**0.63**	**High**	

Students generally demonstrate high satisfaction with course evaluations. The overall average satisfaction score is 4.15, indicating a high level of satisfaction. Specifically, the question "Are the evaluation methods fair and reasonable?" scored 4.10, ranking second, indicating a high level of approval of evaluation methods among students. The questions "Do evaluation results reflect your performance?" and "Can evaluations help you improve?" scored 3.66 and 3.98 respectively, which are high scores but slightly lower compared to other questions. However, "Are evaluations paired with incentives?" scored 4.84, ranking first, demonstrating students' high approval and satisfaction with evaluations being paired with incentives. Overall, these results indicate that students generally perceive course evaluations as excellent in terms of fairness, reflecting performance, and aiding improvement, particularly receiving exceptionally high satisfaction ratings when paired with incentives.

Table 4.39 Data analysis results of student satisfaction survey on the course element Training Learning.

(n=50)

Items	$\overline{X}$	S.D.	Level	Ranking
Continue Learning				
Are you satisfied with continuing learning opportunities?	3.86	0.75	High	3
Do learning arrangements help your development?	4.12	0.69	High	1
Do learning plans meet your needs?	3.82	0.76	High	4
Do learning plans follow entrepreneurship trends?	3.88	0.74	High	2
Total Average	**3.92**	**0.74**	**High**	

Students generally show a high level of satisfaction with continuing learning opportunities. The overall average satisfaction score is 3.92, indicating a high level of satisfaction. Specifically, the question "Are you satisfied with continuing learning opportunities?" scored 3.86, slightly lower than other questions but still considered high. The question "Do learning arrangements help your development?" received the highest score of 4.12, ranking first, demonstrating strong approval of learning arrangements by students. Additionally, the questions "Do learning plans meet your needs?" and "Do learning plans follow entrepreneurship trends?" scored 3.82 and 3.88 respectively, ranking third and second, indicating high satisfaction with learning plans. Overall, these results suggest that students perceive continuing learning as excelling in providing opportunities, aiding development through arrangements, and aligning with their needs and entrepreneurship trends, resulting in overall high satisfaction ratings.

Based on the survey results, students generally express high satisfaction across various elements of the course. Specifically, training content and entrepreneurial practice received the highest ratings of 4.82 and 4.75 respectively, indicating strong approval of the comprehensiveness of the course content and the

opportunities provided for entrepreneurial practice. Following closely are training environment and training teachers, with ratings of 4.43 and 4.39, reflecting students' positive views on the learning environment and the professionalism of the teachers.

Course evaluation and entrepreneurial policies scored 4.15 and 4.48 respectively, demonstrating high approval from students regarding the fairness of evaluations and the support provided by policies for entrepreneurial intentions. However, continuing learning received a slightly lower score of 3.92 compared to other elements, suggesting areas for improvement in the opportunities and plans for continuing education.

In conclusion, these results indicate that students generally hold positive attitudes towards course design, practice opportunities, teaching quality, and policy support. They also highlight the need for further attention and improvement in the area of continuing learning opportunities and plans.

Part 3: Data Analysis for Entrepreneurship Process Course Developed Based on Entrepreneur training model.

In this section, I designed a set of test questions for the innovation and entrepreneurship course, totaling 50 questions with each question worth 2 points. These questions were used for pre-test and post-test assessments of the students participating in the training, and a t-test was conducted on the pre-test and post-test scores. The specific results of the data analysis are shown below:

Table 4.40 Comparison of test scores of experimental class students before and after training

Scores	n	$\overline{X}$	S.D.	t	df	Sig.
Pretest	50	56.06	12.97	-18.67	49	0.000
Posttest	50	75.74	13.59			

*$p < 0.05$

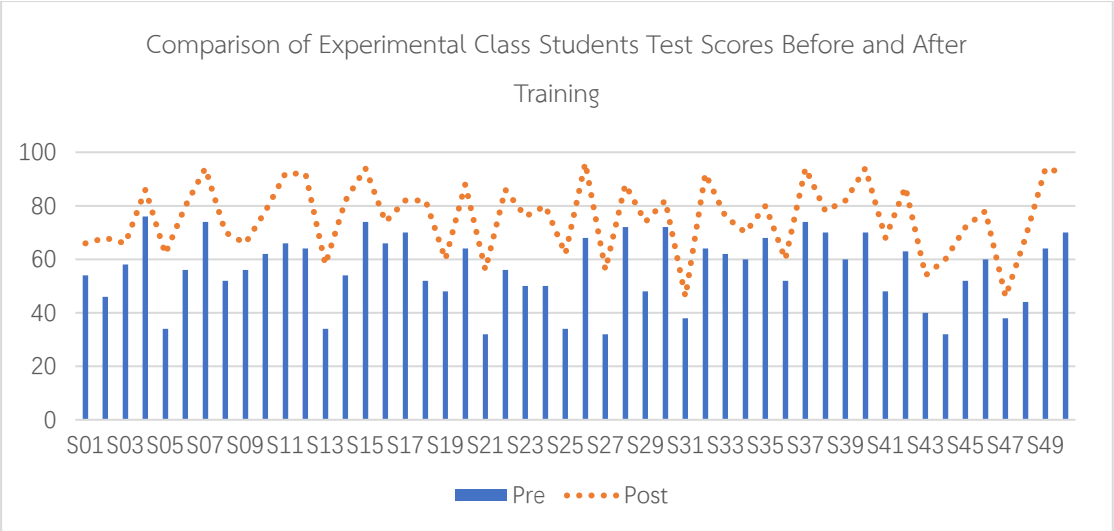


Figure 4.3 Comparison of Experimental Class Students Test Scores Before and After Training

Through data analysis, it is shown that the average pretest score of students in the experimental class before course implementation was 56.06 (SD = 12.97). Following course implementation, their average posttest scores significantly increased to 75.74 (SD = 13.59). The mean difference between pretest and posttest scores was -19.68 (SD = 7.45). Statistical analysis indicates a significant difference between pretest and posttest scores ($t = -18.67$, $df = 49$, $p < 0.001$), demonstrating a notable improvement in academic performance after implementing the entrepreneurship process course. These findings not only confirm the effectiveness of the course but also provide empirical support for further refining and expanding similar training programs.

Chapter 5
Conclusion Discussion and Recommendations

Conclusion

The primary objective of this study was to develop an entrepreneur training model tailored for undergraduate students at Liuzhou Institute of Technology. Throughout the research process, we aimed to achieve this goal through the following steps and methods: Firstly, we conducted a literature review to identify the main elements of entrepreneur training models. Subsequently, through semi-structured interviews with experts, we derived sub-elements of the entrepreneur training model, resulting in a framework comprising nine main elements and over 60 sub-elements, including training objectives, training content, training methods, training teachers, training environment, entrepreneur practice, entrepreneur policy, training evaluation, and continue learning. We then invited 21 experts to assess and refine these elements, leading to the creation of the entrepreneur training model tailored for undergraduate students at Liuzhou Institute of Technology. Following this, we invited an additional 9 experts to evaluate the model, and based on their feedback, developed a course on entrepreneurship process training. Finally, we conducted a Course experiment with 50 students and analyzed their satisfaction with the course through pre- and post-tests to verify the effectiveness of the model. Through these research steps, our aim was to provide students at Liuzhou Institute of Technology with a comprehensive, practical, and effective entrepreneur training model to help them succeed in the field of entrepreneurship, while also hoping that the developed model could assist in entrepreneurship training and education at other types of universities.

During the research process, we made the following key findings:

Firstly, we found that the elements of the entrepreneur training model are crucial for enhancing students' entrepreneurial capabilities. Each main element, including the clarity of training objectives, the specificity and practicality of training content, the diversity of training methods, the quality of training teachers, and the

comfort of the training environment, significantly influenced students' entrepreneurial learning and practice.

Secondly, the implementation of the entrepreneur training model had a significant impact on enhancing students' entrepreneurial capabilities. After participating in the training, students showed noticeable improvements in their entrepreneurial awareness, innovation ability, and practical skills, laying a solid foundation for their future entrepreneurial endeavors.

Lastly, our research highlighted the significant role of the entrepreneur training model in enhancing students' entrepreneurial aspirations and confidence. The results of the student satisfaction survey conducted after the Course experiment showed that students gained a better understanding of the entrepreneurial process and challenges, enhancing their confidence and determination to engage in entrepreneurship.

In conclusion, this study has provided valuable insights and support for enhancing the entrepreneurial capabilities of students at Liuzhou Institute of Technology through in-depth research and practical implementation of the entrepreneur training model. Our research findings hold important implications for advancing entrepreneurship education and practice, offering new perspectives and ideas for research in related fields.

Discussion

Part 1: Discussion of Research Results and Findings

In this section, we will discuss the research results and findings based on the nine main elements and 66 sub-elements identified in the study:

1. Training Objectives

Our research has found that clear training objectives are crucial for enhancing students' entrepreneurial capabilities. These objectives should include fostering innovative thinking, enhancing entrepreneurial willingness, learning the basic processes and required skills for entrepreneurship, as well as developing comprehensive entrepreneurial management and leadership abilities. By setting clear

training objectives, students' learning direction can be guided, thereby improving their motivation and effectiveness.

2. Training Content

Training content should encompass theoretical knowledge, case studies, and practical courses. Additionally, entrepreneurship thinking should be integrated into various subjects to encourage students to acquire knowledge and skills related to entrepreneurship process management. By providing rich and diverse training content, different needs of students can be met, helping them comprehensively enhance their entrepreneurial capabilities.

3. Training Method

Our research indicates that employing diversified training methods can better stimulate students' interest and enthusiasm for learning. For example, classroom teaching, group discussions, simulation experiments, and enterprise internships can all help students better understand and apply the knowledge they have learned. By adopting various forms of training methods, students' comprehensive development can be better promoted.

4. Training Teachers

The quality of training teachers has a significant impact on students' learning outcomes. Teachers should possess rich entrepreneurship knowledge and teaching experience, guiding students in planning and executing entrepreneurial projects. Additionally, teachers should have good communication skills and teamwork spirit to interact and collaborate better with students.

5. Training Environment

Creating a conducive training environment is essential for students' entrepreneurial learning. Support should be provided in terms of entrepreneurial learning spaces, laboratory facilities, and shared resources, as well as opportunities and resources for cooperation with enterprises. By fostering a favorable learning atmosphere and providing necessary support, students can better engage in entrepreneurial practice and learning.

6. Entrepreneurship Practice

Student participation in entrepreneurship practice is a key way to cultivate entrepreneurial capabilities. Encouraging and guiding students to participate in entrepreneurship training programs, science and technology project proposals, virtual simulation training courses, entrepreneurship competitions, university-enterprise cooperation projects, and personal entrepreneurial plans can effectively enhance their entrepreneurial awareness and abilities. Through practice, students can better understand the entrepreneurship process and improve their entrepreneurial skills.

7. Resources and Policy

Providing abundant resources and policy support is crucial for students' entrepreneurial development. Support should include entrepreneurship learning materials, policies, and support measures, as well as startup funding, funding policies for entrepreneurship projects, entrepreneurship training subsidies, and incentive policies. By establishing a sound resource and policy system, students can be provided with better entrepreneurial conditions and opportunities.

8. Assessment and Evaluation

Establishing a scientific and reasonable assessment and evaluation mechanism is crucial for evaluating students' entrepreneurial capabilities and training effectiveness. Clear learning objectives and assessment criteria should be established, and regular assessments and feedback on students' learning outcomes and entrepreneurial practices should be conducted. Through a scientific evaluation mechanism, problems and deficiencies can be identified in a timely manner, providing students with better guidance and support.

9. Continue Learning

Students should actively participate in continue learning to continuously improve their entrepreneurial capabilities and levels. Abundant learning resources and platforms should be provided, encouraging students to engage in interdisciplinary learning and exchange, and keeping them updated on industry dynamics and trends. Through continuous learning, students can continuously enhance their entrepreneurial skills and maintain a competitive edge.

The differences between this study and existing research are as follows: Training Objectives: The focus on entrepreneurial vision and trainee needs ensures that the objectives are closely aligned with real-world entrepreneurial demands, increasing the practicality of the training. Designing Training Content: The model's requirement for content adaptability ensures its relevance in dynamic entrepreneurial environments, thereby promoting continuous learning and application. Selecting Training Methods: Emphasis on reflective and facilitative methods encourages critical thinking and problem-solving, which are crucial for entrepreneurial success. Identifying Training Teachers: By focusing on affinity and guidance, the model highlights the importance of mentor-mentee relationships in entrepreneurial training. Creating the Training Environment: The model's holistic approach creates a safe, comfortable, and open environment, enhancing learning through a positive atmosphere. Engaging in Entrepreneurial Practice: The model's focus on authenticity, challenge, and feedback in practice ensures that trainees gain valuable hands-on experience, preparing them for real entrepreneurial challenges. Entrepreneurial Policy Support: This element ensures that trainees are aware of and can leverage available policy support, adding a strategic advantage to their entrepreneurial endeavors. Conducting Training Evaluation: Through timely and objective evaluations, the model ensures continuous improvement and optimization of training programs, enhancing their effectiveness and relevance. Continuous Learning: The model's focus on the sustainability and success of continuous learning emphasizes the dynamic nature of entrepreneurship, ensuring that entrepreneurs remain adaptive and forward-thinking.

From the overall perspective of the model, the proposed framework integrates existing best practices and new elements, creating a comprehensive entrepreneurial training framework. Its unique contribution lies in its holistic approach, aligning training with real-world entrepreneurial needs, emphasizing continuous learning, and incorporating policy support. This model not only meets immediate training needs but also ensures long-term entrepreneurial success by fostering adaptability, innovation, and strategic thinking. Future research can explore the application of this model in different contexts and refine its components to further enhance its effectiveness.

Part 2: Evaluation of Research Significance and Contributions

In this section, we will evaluate the significance and contributions of the research to both the academic and practical domains:

1. Significance for the Academic Community

Our research contributes to the academic community by providing a comprehensive analysis of the key elements and sub-elements of an entrepreneur training model tailored specifically for students at Liuzhou Institute of Technology. By systematically studying and evaluating these elements, we have enriched the theoretical understanding of entrepreneurship education and training. Additionally, our research lays the foundation for further studies in the field of entrepreneurship education, providing valuable insights for scholars and researchers interested in developing effective training models for students in different educational settings.

2. Significance for the Practical Community

The practical implications of our research are profound, particularly for Liuzhou Institute of Technology and its students. By developing a customized entrepreneur training model, we address the specific needs and challenges faced by students aspiring to become entrepreneurs. Our model not only equips students with the necessary knowledge and skills for entrepreneurship but also fosters their entrepreneurial mindset and confidence. Furthermore, the practical implementation of our model has the potential to contribute to the local entrepreneurial ecosystem by nurturing a new generation of innovative and enterprising individuals who can drive economic growth and social development.

3. Innovation and Importance for Liuzhou Institute of Technology

One of the key innovations of our research lies in its tailored approach to entrepreneurship training for students at Liuzhou Institute of Technology. By identifying and prioritizing the key elements and sub-elements of the training model, we have developed a targeted and effective framework that aligns with the institution's educational objectives and student needs. This innovative approach not only enhances the relevance and applicability of the training model but also underscores the importance of fostering entrepreneurship among students as a means of promoting

regional development and competitiveness. The significance of our research lies in its potential to inspire similar initiatives at other educational institutions and contribute to the broader advancement of entrepreneurship education in China.

In summary, our research makes significant contributions to both academia and practice by providing a comprehensive analysis of entrepreneur training models and developing a tailored framework for students at Liuzhou Institute of Technology. Through its innovative approach and practical relevance, our research aims to empower students with the knowledge, skills, and mindset needed to succeed in the dynamic and competitive field of entrepreneurship, thereby driving positive social and economic outcomes for the institution and its surrounding community.

Recommendations

1. Suggestions for Using Research Results

1.1 Despite laying a significant foundation for the development of an entrepreneur training model tailored to students at Liuzhou Institute of Technology, our study has identified certain limitations and areas for improvement. Based on these constraints and findings, we propose the following recommendations to better apply the research results:

1.2 In-depth Investigation of Entrepreneurial Needs Among Different Student Groups**: Future efforts can target students from various grades, majors, and backgrounds to better understand their entrepreneurial needs and challenges. Through targeted surveys and analysis, it would be possible to design and optimize entrepreneur training models more precisely to meet the diverse needs of student populations.

1.3 Exploration of Personalized Entrepreneur Training Models**: Future initiatives could explore the design and implementation of personalized entrepreneur training models. By understanding the characteristics, interests, and goals of individual students, personalized training plans could be tailored to effectively stimulate their entrepreneurial potential and practical capabilities.

1.4 Expansion of Interdisciplinary Research Scope**: Future efforts could broaden their focus to other relevant fields such as educational psychology, management studies, and innovation research. Through interdisciplinary research methods and perspectives, a more comprehensive understanding of the essence and influencing factors of entrepreneurship training could be achieved, providing new theoretical and practical support for the further development of entrepreneurship education.

1.5 Enhancement of Methodological Diversity and Depth**: Future efforts could employ a variety of research methods and techniques, including case studies, field surveys, and experimental designs, to deepen the understanding and evaluation of entrepreneur training models. Moreover, efforts could be made to strengthen the rigor and scientific validity of experimental designs and data analysis, ensuring the reliability and credibility of research results.

1.6 Strengthening the Integration of Practice and Theory**: Future efforts could further strengthen the integration of practice and theory by collaborating with enterprises to conduct entrepreneurship projects. This collaboration would better promote students' entrepreneurial abilities and innovative spirit. Additionally, establishing closer industry-academia-research cooperation mechanisms could facilitate the translation and application of innovative outcomes, making greater contributions to regional economic development and social progress.

2. Suggestions for Future Research

2.1 To further refine and improve the entrepreneurship training model, better serving the evolving needs and aspirations of student entrepreneurs, we propose the following future research directions:

2.2 In-depth Investigation of Entrepreneurial Needs Among Different Student Groups**: Future research could more broadly target students from various grades, majors, and backgrounds. Through targeted surveys and analysis, it would be possible to design and optimize entrepreneur training models more precisely to meet the diverse needs of student populations.

2.3 Exploration of Personalized Entrepreneur Training Models**: Future research could focus on the design and implementation of personalized entrepreneur training models. By understanding the characteristics, interests, and goals of individual students, personalized training plans could be tailored to effectively stimulate their entrepreneurial potential and practical capabilities.

2.4 Expansion of Interdisciplinary Research Scope**: Future research could broaden its scope to include fields such as educational psychology, management studies, and innovation research. Through interdisciplinary research methods and perspectives, a more comprehensive understanding of the essence and influencing factors of entrepreneurship training could be achieved, providing new theoretical and practical support for the development of entrepreneurship education.

2.5 Enhancement of Methodological Diversity and Depth**: Future research could employ a variety of research methods and techniques, including case studies, field surveys, and experimental designs, to deepen the understanding and evaluation of entrepreneur training models. Strengthening the rigor and scientific validity of experimental designs and data analysis would ensure the reliability and credibility of research results.

2.6 Strengthening the Integration of Practice and Theory**: Future research could further enhance the integration of practice and theory by collaborating with enterprises on entrepreneurship projects. This collaboration would better promote students' entrepreneurial abilities and innovative spirit. Establishing closer industry-academia-research cooperation mechanisms would also facilitate the translation and application of innovative outcomes, contributing significantly to regional economic development and social progress.

In conclusion, this research has contributed significantly to the development and enhancement of entrepreneur training models tailored to the students at Liuzhou Institute of Technology. Through a systematic examination of the various elements and sub-elements of the training model, coupled with extensive expert evaluations and iterative adjustments, we have successfully formulated a comprehensive and effective entrepreneur training model.

The primary findings of this research underscore the critical importance of addressing the diverse needs and challenges of student entrepreneurs. By delineating clear training objectives, providing relevant and practical training content, employing flexible and innovative training methods, nurturing competent and supportive training teachers, creating conducive training environments, facilitating hands-on entrepreneurial practice, leveraging available resources and policies, implementing robust assessment and evaluation mechanisms, and fostering a culture of continuous learning, our entrepreneur training model aims to empower students with the necessary knowledge, skills, mindset, and resources to embark on successful entrepreneurial ventures.

Furthermore, this research emphasizes the significance and value of entrepreneurship education in nurturing a new generation of innovative and entrepreneurial talent. By equipping students with the competencies and capabilities needed to identify and seize entrepreneurial opportunities, navigate the complexities of the business landscape, and drive sustainable growth and development, our entrepreneur training model contributes not only to the individual success of students but also to the overall economic and social prosperity of the region.

Looking ahead, future research endeavors should continue to explore and refine entrepreneur training models to better serve the evolving needs and aspirations of student entrepreneurs. By embracing innovation, collaboration, and continuous improvement, we can further enhance the effectiveness and relevance of entrepreneurship education, thereby fostering a culture of innovation, creativity, and entrepreneurship that will propel our society forward into a brighter and more prosperous future.

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Appendix

Appendix A
Entrepreneurial Process Course Experiment

Development Entrepreneur Process Training Course Based on Entrepreneur Training Model

By

Xiao Wenjun

Code:6373267202

Preface

My implementation plan consists of three parts. The first part introduces the entrepreneur training model developed in my doctoral thesis research and the methods used to develop courses based on this model. The second part is the creation of training curriculum, primarily focusing on how to develop courses based on the entrepreneur training model. This training curriculum comprises nine components: 1) Objectives, 2) Content, 3) Method, 4) Teacher, 5) Environment, 6) Practice, 7) Policy, 8) Evaluation, and 9) Follow-up learning. The third part involves piloting the implementation of the training curriculum, measuring student satisfaction with the training curriculum through pre-post testing, which includes satisfaction across five aspects: 1) Course content, 2) Instructional methods, 3) Learning outcomes, 4) Trainers, and 5) Training organization. The results of satisfaction will be analyzed using Likert scales, aiding in evaluating the quality of the training curriculum and guiding future improvements, as well as validating the effectiveness of the model.

Research Framework

The research framework of this implementation plan is illustrated in the following figure:

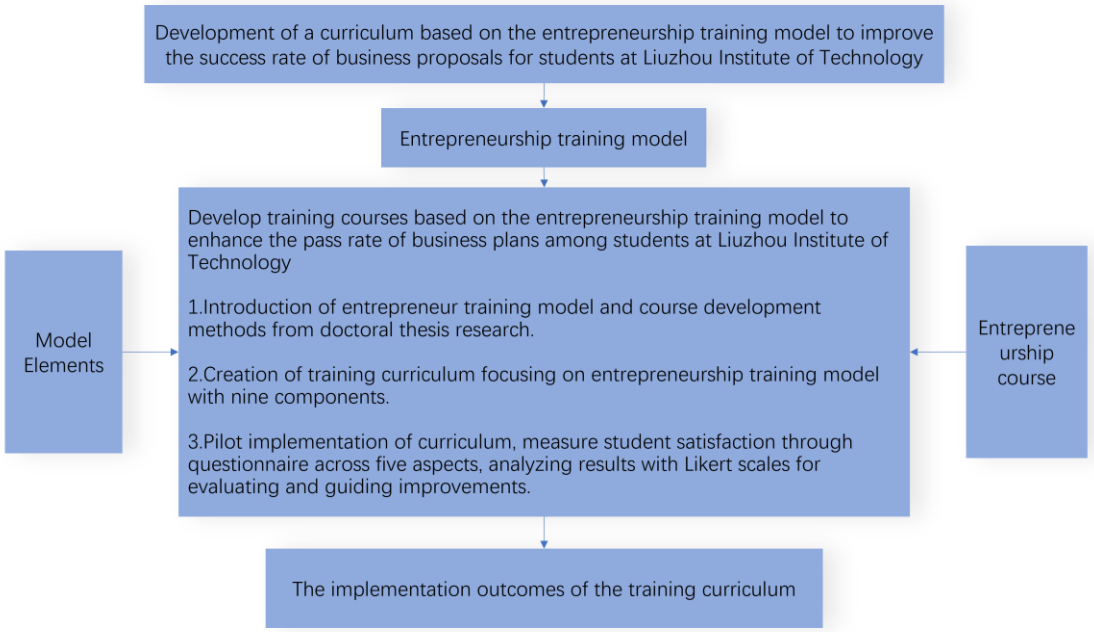

Figure 1.1 Research Framework

Guide for Using the Entrepreneur training model

This entrepreneur training model breaks down the entrepreneurship training process into four stages: thinking, learning, trying, and doing. Each stage is accompanied by specific training objectives, content, and methods. Training teachers, environments, evaluations, and policies all play roles in these stages, impacting the training process differently at each stage. When implementing this model, specific guidelines for each element are as follows:

Establish Training Objectives:

Training objectives set the direction and standards for training. Based on the trainees' entrepreneurial visions and needs, specify the outcomes they aim to achieve through training. Training objectives should be specific, measurable, achievable, relevant, and time-bound.

Design Training Content:

Training content defines the substance and scope of training. Based on trainees' objectives, select and organize training content that aligns with their entrepreneurial knowledge, skills, attitudes, and behaviors. Training content should be consistent, practical, and flexible.

Choose Training Methods:

Training methods dictate the manner and form of training. Based on predetermined training content, select appropriate teaching and learning methods. Training methods should be adaptive, stimulating, facilitative, reflective, and effective.

Identify Training Teachers:

Training teachers determine the personnel and quality of training. Based on training objectives, content, and methods, identify suitable teachers, mentors, and experts. Training teachers should possess professionalism, mastery, experience, affinity, and guidance.

Establish Training Environment:

The training environment sets the conditions and atmosphere for training. Based on objectives, content, methods, and instructors, create suitable physical, social,

and cultural environments. The training environment should be safe, comfortable, and open.

Engage in Entrepreneurial Practice:

Entrepreneurial practice assesses the effectiveness and value of training. Based on objectives, content, methods, instructors, and environment, participate in entrepreneurial projects, activities, and processes. Entrepreneurial practice should be authentic, challenging, and feedback-oriented.

Entrepreneurial Policy Support:

Entrepreneurial policy guides the support and regulation of training. Based on objectives, introduce governmental and societal entrepreneurial policies, and enact relevant support policies. Entrepreneurial policies should be rational, fair, and transparent.

Conduct Training Evaluation:

Training evaluation drives improvement and refinement of training. Based on objectives, content, methods, instructors, environment, practice, and policies, conduct evaluations on aspects like entrepreneurs, projects, and outcomes. Evaluations should be objective, comprehensive, and timely.

Embrace Continue Learning:

Continue learning sustains and evolves the entrepreneurial training model, enabling continuous updates and expansions of entrepreneurial knowledge and skills. Optimize projects, activities, and responses to the entrepreneurial environment and policies. Continue learning should be sustainable and successful.

Developing an Entrepreneurship Process Training Course Based on Entrepreneurial Training Models

1. Rational and principle

This course is a training program for the entrepreneurship process developed based on the entrepreneur training model. Through team building and project-based learning, with full guidance from instructors and business mentors, participants will acquire the knowledge, skills, and attitudes necessary for the entrepreneurship process, thereby increasing their entrepreneurship rate and success rate. We are committed to providing participants with the latest, most accurate, and reliable resources to help them understand and apply theoretical and practical knowledge in the field of entrepreneurship, enabling them to effectively navigate today's competitive business environment. By participating in this course, participants will be able to engage in the entire process of entrepreneurship projects from inception to completion, laying a solid foundation for the success of their entrepreneurial ventures. Therefore, this course not only assists participants in achieving their individual entrepreneurial goals but also contributes to enhancing the overall quality of entrepreneurship education.

The entrepreneur training model consists of nine elements: Training objectives, Training content, Training methods, Training instructors, Training environment, Entrepreneurial practice, Entrepreneurial policies, Training evaluation, and continue learning. We will select the sub-elements of the entrepreneur training model based on the positioning and requirements of the entrepreneurship process training course, and complete these sub-elements according to the specific situation of the school, thereby completing the course development.

2. Training objective

This training program has three objectives:

Objective 1: Cultivate students' innovative thinking and entrepreneurial abilities. They should be able to identify, analyze, question, and evaluate phenomena and issues in the business field, and provide unique insights and innovative solutions.

Objective 2: Develop the ability to solve problems encountered during the entrepreneurial process. Students should be capable of conducting comprehensive analysis and research on various complex issues encountered during the entrepreneurial process, and propose effective countermeasures or solutions.

Objective 3: Foster strong teamwork skills. Students should be able to collaborate harmoniously with team members, actively participate in teamwork, and play positive roles in course activities, whether as team members or leaders.

3. Training content

The course is divided into four modules totaling 40 hours, with teachers lecturing for 10 hours and students engaging in entrepreneurial practice for 30 hours. The specific course schedule is shown in the table below:

Table 3.1 Contents of training curriculum

No.	Project Name	Knowledge Points	Learning Objectives	Theory Teaching (hours)	Entrepreneurial Practice (hours)
1	Entrepreneurship and Life Planning	Definition of Entrepreneurship; Types of Entrepreneurships; Significance of Entrepreneurship; Macro and Micro Environment of Entrepreneurship; Connotation of Entrepreneurial Spirit; Comparison of Entrepreneurial	Understand the definition of entrepreneurship; types of entrepreneurships; significance of entrepreneurship; macro and micro environments of entrepreneurship. 2. Understand the essence of entrepreneurial	1	1

No.	Project Name	Knowledge Points	Learning Objectives	Theory Teaching (hours)	Entrepreneurial Practice (hours)
		Spirit and Professional Spirit; Entrepreneurship and Life Planning; Vision Board.	spirit; comparison between entrepreneurial spirit and professional spirit; entrepreneurship and life planning; vision board.		
2	Sources of Business Opportunities and Entrepreneurial Opportunities	Sources and Types of Entrepreneurial Opportunities; Sources of Innovative Entrepreneurship Projects in Schools; How to Identify Entrepreneurial Opportunities; Understanding User Needs; Evaluation of Entrepreneurial Projects;	Understand the sources and types of entrepreneurial opportunities; sources of innovation and entrepreneurship projects in universities; 2. Understand how to identify entrepreneurial opportunities; insight into user needs; evaluation of entrepreneurial projects;	1	3

No.	Project Name	Knowledge Points	Learning Objectives	Theory Teaching (hours)	Entrepreneurial Practice (hours)
		Elements of Entrepreneurship; How to Utilize Local Resources; Exploration of Opportunities - Trouble Board; Planning of Opportunities - Opportunity Board, etc.	entrepreneurial elements; 3. Master how to make good use of resources around oneself; explore opportunities - worry board; plan opportunities - opportunity board, etc.		
3	Entrepreneurs and Entrepreneurial Teams	Characteristics of Entrepreneurs and Entrepreneurial Traits; Connotation of Entrepreneurial Teams; Formation and Management of Entrepreneurial Teams; Key Points of Equity Setting for Entrepreneurial Teams; Tangram Experiment - Perception of	Understand what kind of people are entrepreneurs and the characteristics of entrepreneurs; the connotation of entrepreneurial teams; the formation and management of entrepreneurial teams; key points of equity allocation for entrepreneurial teams. 2. Understand the tangram	1	3

No.	Project Name	Knowledge Points	Learning Objectives	Theory Teaching (hours)	Entrepreneurial Practice (hours)
		Managerial Thinking; Formation of Entrepreneurial Teams - Team Board, Design of Team Equity Allocation, etc.	experiment - perceiving managerial thinking; 3. Master the formation of entrepreneurial teams - team board, designing team equity allocation, etc.		
4	Entrepreneurial Environment and Market Analysis	Framework and General Process of Market Research; Market Research Report; PEST Analysis; Analysis of Entrepreneurial Projects Using SWOT, PEST, Porter's Five Forces Model, Predicting Market Size; STP Strategic Design, Customer Profiles, Market Research, etc.	Understand the framework and general process of market research; market research report; PEST analysis. 2. Understand how to analyze and predict market size of entrepreneurial projects using SWOT, PEST, Porter's Five Forces model; STP strategic design, customer profiles,	1	3

No.	Project Name	Knowledge Points	Learning Objectives	Theory Teaching (hours)	Entrepreneurial Practice (hours)
			market research, etc.		
5	Product Design and Market Testing	Perception of Innovative Thinking - Idea Circle; Entrepreneurial Product Design - Product Prototype Board; Product Testing and Iteration Plan; Presentation of Entrepreneurial Products, etc.	Understand perceptual innovation thinking - idea circle; entrepreneurial product design - product prototype board. 2. Understand product testing and iteration plans; presentation of entrepreneurial products.	1	4
6	Business Model Design and Innovation	Definition of Business Models; Basic Features of Business Models; Types of Business Models; Designing Business Models -	Understand the definition of business models; the basic characteristics of business models; types of business	1	4

No.	Project Name	Knowledge Points	Learning Objectives	Theory Teaching (hours)	Entrepreneurial Practice (hours)
		Business Model Canvas; Business Model Evaluation; Innovative Business Models, etc.	models. 2. Master designing business models - business model canvas; business model evaluation; innovative business models, etc.		
7	Entrepreneurial Marketing and Marketing Strategy	Concept of Entrepreneurial Marketing; Utilizing Big Data for Marketing; 4P and New 4P Marketing Tools; 4C and New 4C Marketing Tools; Daily Management PDCA Cycle Tools; Data Collection, Designing Entrepreneurial Marketing Plans, etc.	Understand the concept of entrepreneurial marketing. 2. Learn to utilize big data for marketing; 4P and new 4P marketing tools; 4C and new 4C marketing tools; daily management PDCA cycle tools; data collection, designing entrepreneurial marketing plans, etc.	1	4

No.	Project Name	Knowledge Points	Learning Objectives	Theory Teaching (hours)	Entrepreneurial Practice (hours)
8	Entrepreneurial Financing and Entrepreneurial Risks	Determining Initial Costs; Index Analysis of Financial Statements; Entrepreneurial Risks and Mitigation; Profitability Analysis; Sources of Entrepreneurial Funds; Entrepreneurial Financing Plans, etc.	Understand determining initial costs; index analysis of financial statements. 2. Understand entrepreneurial risks and mitigation; profitability analysis; sources of entrepreneurial funds; entrepreneurial financing plans, etc.	1	3
9	Entrepreneurial Planning and Presentation	Concept and Purpose of Entrepreneurial Business Plans; Considerations for Writing Entrepreneurial Business Plans; Steps for Writing Entrepreneurial Business Plans; Origin of Roadshows; How	Understand the concept and purpose of entrepreneurial business plans. 2. Learn considerations for writing entrepreneurial business plans; steps for writing entrepreneurial business plans;	1	3

No.	Project Name	Knowledge Points	Learning Objectives	Theory Teaching (hours)	Entrepreneurial Practice (hours)
		to Conduct Successful Roadshows. Writing Entrepreneurial Business Plans and Conducting Roadshows.	origin of roadshows; how to conduct successful roadshows. Write entrepreneurial business plans and conduct roadshows.		
10	Practice Report	Group Presentation	Be able to present the content of practical training in a reasonable and well-founded manner, while also having some personal reflection through the practical training.	0	3

4. Training Methods

The training method consists of the following five steps:

Step 1: Design and create a learning environment. This includes designing and developing courses, collecting course resources, designing teaching activities, and establishing the teaching environment.

Step 2: Create study groups. Organizers will divide the 50 participating lecturers into 10 groups to help them understand the learning tasks, group norms, group targets, and individual learning targets. Organizers will facilitate team-building activities to enhance mutual understanding among students, strengthen team

cohesion, and lay the foundation for subsequent teaching activities. In this step, group motivation will be enhanced through aspects such as group structure, group goals, and group leadership.

Step 3: Theoretical teaching. During 10 hours of online teaching, organizers will invite relevant experts to teach theoretical knowledge related to the entrepreneurial process. In this step, group motivation will mainly be enhanced through aspects such as group goals, group environment, group leadership, and individual members.

Step 4: Entrepreneurial practice. Trainers will primarily use a project-based learning approach, with tasks divided into individual tasks and group tasks. Individual tasks will involve steps such as establishing projects, completing tasks, showcasing achievements, intra-group peer evaluation, and optimization. Group tasks will involve knowledge sharing, outsourcing and collaboration, showcasing achievements, inter-group peer evaluation, and optimization. In this step, group motivation will be enhanced through aspects such as group goals, group environment, group leadership, and individual members.

Step 5: Evaluation and feedback. Assess whether participating lecturers have achieved training objectives, primarily evaluating process participation, including attendance rates and interaction with instructors, as well as task completion, including individual task completion rates, group task participation, and task completion quality.

The specific training methods employed include:

1. Group discussions and case studies

Organize students to participate in group discussions and case studies, allowing them to analyze real-world entrepreneurial cases and learn from both successful and failed experiences.

2. Simulation of entrepreneurial projects

Engage students in simulated entrepreneurial projects, allowing them to experience various aspects of entrepreneurship in a simulated environment, including business plan development, market research, and teamwork.

3. Mentorship guidance

Provide guidance and mentoring from professional mentors to help students address challenges encountered during the entrepreneurial process, offering practical experience and advice.

4. Field trips and site visits

Organize field trips for students to visit different types of businesses, gaining insights into various industry operations and management practices.

5. Entrepreneurship lectures and workshops

Invite successful entrepreneurs, industry experts, or representatives from relevant organizations to deliver lectures and conduct workshops, sharing practical experiences and industry insights.

6. Individual projects and assignments

Through individual projects and assignments, enable students to apply their acquired knowledge in practice, fostering entrepreneurial skills and problem-solving abilities.

7. Online learning platforms

Utilize online learning platforms to provide course materials, video lectures, and facilitate online discussions, allowing students to learn and interact anytime, anywhere.

5. training teacher

Below are the job requirements and teaching tasks for training teachers:

1. Teacher Qualifications

Possess extensive entrepreneurial experience, having successfully founded or participated in multiple entrepreneurial projects.

Have professional knowledge and skills in relevant fields such as marketing, business plan writing, financial management, etc.

Have teaching experience and mentoring abilities, able to effectively impart knowledge, guide students, and provide feedback.

2. Teaching Methods

Utilize various teaching methods including case analysis, group discussions, simulations, field trips, etc., to promote students' comprehensive development.

Emphasize practical orientation, focusing on allowing students to apply learned knowledge through real projects and tasks, cultivating entrepreneurial skills and problem-solving abilities.

3. Personalized Guidance

Provide personalized mentorship, engage in one-on-one communication and guidance with students, assisting them in solving problems encountered in the entrepreneurial process and formulating practical solutions.

Encourage active participation in course activities, foster in-depth communication and exchange of experiences and ideas among students, facilitating mutual learning and growth.

4. Motivation and Encouragement

Encourage and acknowledge students' efforts and achievements to stimulate their innovative potential and entrepreneurial enthusiasm, enhancing their confidence and motivation.

Encourage students to face challenges and failures bravely, recognizing that failure is a part of success, and encourage them to learn from experience and continuously improve themselves.

5. Team Collaboration

Organize student participation in team projects to foster teamwork spirit and collaboration skills, promoting communication and coordination within teams.

Guide students to effectively collaborate with team members, allocate tasks, provide mutual support, and collectively accomplish tasks for success.

6. Practical Guidance

Provide practical guidance and feedback, promptly identifying issues encountered by students in the entrepreneurial process and offering solutions and advice.

Encourage students to continuously experiment, summarize experiences, and improve methods during practice, enhancing the quality and implementation effectiveness of entrepreneurial plans.

6. Training environment

The Training environment for the course is set as follows:

1. Classroom Environment

Select spacious and well-lit classrooms to ensure students have ample space for group discussions and team activities.

Equip classrooms with projectors and sound systems for conducting case analyses, lectures, and presentations.

Provide comfortable seating and desks to facilitate a comfortable learning experience for students.

2. Practice Facilities

Provide practice facilities such as entrepreneurial incubators, laboratories, or simulated business environments for students to experience the entrepreneurial process in real settings.

Establish a repository of entrepreneurial resources, including market research data, business model samples, successful case studies, etc., for students to reference and draw inspiration from.

3. Team Collaboration Spaces

Allocate team collaboration spaces to facilitate cooperative learning and project development for students.

Each team collaboration space should be equipped with necessary work facilities and resources such as whiteboards, conference tables and chairs, computers, etc.

4. Entrepreneurial Activity Venues

Organize regular entrepreneurial activities such as lectures, company visits, and entrepreneurial competitions to provide students with opportunities to interact with entrepreneurs and industry experts.

Venues for these activities can include campus meeting rooms, corporate offices, or exhibition centers, among others.

5.Training Facilities

Provide essential training facilities such as computer labs, manufacturing workshops, maker spaces, etc., to support students in the development and practice of entrepreneurial projects.

Ensure that training facilities are well-equipped, safe, and reliable to meet the practical needs of students.

7. Entrepreneur Practice

According to the Entrepreneurial Process Training course's entrepreneurial training model, here is the specific setup plan for Entrepreneur Practice:

1. Simulated Entrepreneurial Projects

Design and guide students to participate in simulated entrepreneurial projects, allowing them to experience real entrepreneurial processes in a controlled environment.

Provide different types of entrepreneurial cases for students to choose from, covering various industries, scales, and stages of enterprise development.

Guide students in developing business plans, formulating business models, conducting market research, devising marketing strategies, and planning finances.

2. Field Trips and Expansion Visits

Organize field trips for students to visit various types of companies and understand their operational models, management styles, and innovative practices.

Arrange for students to participate in industry exhibitions, entrepreneurial salons, and other events to engage in face-to-face discussions with entrepreneurs and industry experts, broaden their horizons, and gain practical experience.

3. Entrepreneurial Activities and Competitions

Regularly host entrepreneurial activities and competitions, such as business plan competitions and entrepreneurship roadshows, to provide platforms for students to showcase their ideas and projects.

Encourage students to form teams and participate in entrepreneurial competitions to enhance teamwork and project management skills, while also receiving feedback from judges and mentors.

4. Mentorship and Guidance

Provide professional mentorship and guidance to students, offering personalized entrepreneurial advice and solutions.

Arrange regular face-to-face meetings and guidance sessions between mentors and students to help them address practical problems and guide the development and implementation of their projects.

5. Entrepreneurial Practice Projects

Require students to complete entrepreneurial practice projects during the course, ensuring that the projects have practicality and feasibility.

Allow students to choose their own entrepreneurial projects or select from a provided list of projects, and require them to submit detailed project plans and implementation strategies.

8. Entrepreneur policy

Based on the Entrepreneur training model of the Entrepreneurial Process Training course, here is the specific plan for Entrepreneur Policy, including the policy support that the school can provide:

1. Entrepreneur Policy Introduction:

Provide an introduction to campus entrepreneurship support policies, such as entrepreneurship incubators, innovation funds, etc.

Offer information on internal entrepreneurship competitions and scholarship programs to encourage active student participation.

2. Entrepreneurial Legal Regulations

Provide legal advisory services to help students understand relevant entrepreneurship laws and regulations and address any queries they may have.

Establish an entrepreneurship legal consultation center to provide entrepreneurship legal advisory services.

3. Entrepreneurial Environment Assessment

Provide relevant data and resources to assist students in evaluating the entrepreneurial environment, including industry reports, market research data, etc.

Offer entrepreneurship mentors or alumni resources to help students understand market conditions and provide advice.

4. Implementation of Entrepreneurship Policies

Offer guidance and counseling services for students to apply for entrepreneurship projects and assist them in obtaining support from relevant entrepreneurship policies.

Organize entrepreneurship policy promotion sessions or seminars to help students understand policy content and application procedures.

5. Entrepreneurial Community Resources

Establish an entrepreneurship community to provide space and resource support, serving as a platform for students to exchange ideas and collaborate.

Implement an entrepreneurship mentorship system, inviting alumni or industry experts to serve as mentors to guide students' entrepreneurial projects.

9. Training evaluation

Based on the Entrepreneurial Training Model of the Entrepreneurial Process Training course, below is the specific setting plan for Training Evaluation:

1. Course Objective Assessment

Establish clear course objectives and learning goals, such as whether students can understand basic entrepreneurial concepts and grasp key steps in the entrepreneurial process.

Use pre-course and post-course surveys or tests to assess students' mastery of course objectives and the effectiveness of the course.

2. Participation Assessment

Track students' attendance and participation, including their involvement in class discussions, group projects, and other activities.

Evaluate students' level of engagement in the course based on their classroom performance and participation in activities.

3. Individual Project Assessment

Require students to complete individual entrepreneurial projects and assess them based on the completion status, quality, and level of innovation.

Evaluation can be conducted through written reports, presentations, or demonstrations to assess students' understanding and application of the entrepreneurial process.

4. Team Project Assessment

Evaluate students' participation in team entrepreneurial projects, including the level of teamwork, project completion status, and presentation of results.

Assessment can be based on team reports, presentations, or oral presentations to evaluate teamwork and project execution skills.

5. Practical Outcome Assessment

Assess the outcomes of students' practical experiences, such as reports on company visits or performance in entrepreneurial competitions.

Evaluate students' performance and the effectiveness of their practical experiences based on the objectives and requirements of the practical activities.

6. Feedback and Improvement Mechanism

Collect feedback and suggestions from students on course content, teaching methods, and learning experiences.

Use evaluation results and student feedback to make timely adjustments to course settings and teaching strategies, continuously improving the course effectiveness and student experience.

10. Continue learning

Based on the Entrepreneurial Training Model, here is the specific setting plan for Continue Learning in the Entrepreneurial Process Training course:

1. Guest Speaker Series

Invite successful entrepreneurs, industry experts, and investors to deliver guest lectures on various topics related to entrepreneurship.

Cover a wide range of subjects such as startup funding, marketing strategies, legal aspects of entrepreneurship, and emerging trends in the industry.

2. Industry Workshops and Seminars

Organize workshops and seminars focused on specific industries where students can learn about market trends, opportunities, and challenges.

Provide hands-on activities and case studies to deepen students' understanding of industry-specific entrepreneurial processes.

3. Networking Events

Arrange networking sessions where students can connect with fellow entrepreneurs, alumni, and professionals from the industry.

Encourage students to build relationships, seek mentorship, and explore collaboration opportunities.

4. Entrepreneurship Forums and Panel Discussions

Host forums and panel discussions featuring experienced entrepreneurs and industry leaders sharing insights, experiences, and best practices.

Facilitate interactive sessions where students can ask questions, engage in discussions, and gain valuable perspectives.

5. Continued Mentorship Program

Establish a mentorship program that pairs students with experienced entrepreneurs or industry mentors.

Provide continue guidance, support, and feedback to students as they progress through their entrepreneurial journey.

6. Online Learning Resources

Curate a collection of online resources including articles, videos, podcasts, and webinars related to entrepreneurship.

Encourage students to explore these resources independently to broaden their knowledge and stay updated on industry trends.

7. Incubator and Co-working Space Access

Grant students access to incubator facilities or co-working spaces where they can work on their startup projects.

Provide resources such as office amenities, networking opportunities, and access to funding and mentorship programs.

8. Peer Learning Groups

Facilitate peer learning groups where students can collaborate, share ideas, and provide feedback to each other.

Encourage peer-to-peer mentoring and accountability to foster a supportive learning community.

9. Continuous Assessment and Feedback

Implement regular assessments and feedback mechanisms to track students' progress and identify areas for improvement.

Provide personalized feedback and guidance to help students overcome challenges and refine their entrepreneurial skills.

10. Alumni Engagement

Engage alumni who have successfully launched their ventures to share their experiences and insights with current students.

Organize alumni networking events, mentorship opportunities, and alumni-led workshops to facilitate knowledge sharing and mentorship.

The exam questions for the course

1. Innovation refers to:

a) Reusing existing methods

b) Inventing new products or services

c) Maintaining the status quo

d) Ignoring market demands

2. Entrepreneurship refers to:

a) Always staying in the comfort zone

b) Starting new businesses or organizations

c) Relying on others' decisions

d) Completely avoiding risks

3. Which of the following is not a characteristic of entrepreneurs?

a) Optimism

b) Resilience

c) Lack of confidence

d) Creativity

4. What is a business plan?

a) A document used to collect market research data

b) A document describing the goals and plans of an entrepreneur

c) A document for internal use only, not disclosed externally

d) A document showcasing the skills of an entrepreneur

5. Which of the following is not a part of the entrepreneurial process?

a) Market research

b) Writing a business plan

c) Registering a startup company

d) Employee resignations

6. Which of the following is not a type of innovation?

a) Product innovation

b) Operational innovation

c) Conservative innovation

d) Market innovation

7. Which of the following is not a factor influencing entrepreneurial success?

a) Market demand

b) Funding

c) Optimism

d) Historical background

8. What is market research?

a) Listening to customer complaints

b) Observing competitors

c) Studying potential customers and competitive environment

d) Determining product pricing

9. What is SWOT analysis used to assess?

a) Customer satisfaction

b) Product quality

c) Organization's strengths, weaknesses, opportunities, and threats

d) Employee performance

10. The goal of innovation entrepreneurship is:

a) Earning profits

b) Maintaining the status quo

c) Meeting customer demands

d) Avoiding failure

11. Which of the following is not a source of innovation?

a) Market demand

b) Copying competitors

c) Scientific research

d) Technological advancement

12. Which of the following is not a quality entrepreneurs should possess?

a) Leadership

b) Team spirit

c) Fear of unemployment

d) Communication skills

13. The biggest challenge entrepreneurs need to overcome is:

a) Lack of funds

b) Lack of market opportunities

c) Lack of time

d) Lack of creativity

14. The mission of a business is to:

a) Maximize shareholder interests

b) Provide products and services to meet customer needs

c) Obtain government support

d) Expand market share

15. Entrepreneurial responsibilities include:

a) Managing employees

b) Financial planning

c) Creating vision and strategy

d) Executing plans

16. Which of the following is not an importance of innovation?

a) Increasing competitiveness

b) Meeting customer needs

c) Avoiding risks

d) Promoting economic growth

17. The main parts of a business plan include:

a) Product pricing

b) Company vision and mission

c) Company's shareholder structure

d) Operating costs

18. The biggest risk entrepreneurs face is:

a) Lack of funds

b) Lack of market opportunities

c) Lack of experience

d) Lack of teamwork

19. The key success factor of innovation entrepreneurship is:

a) Copying competitors

b) Competing with employees

c) Continuous learning and adaptation

d) Sticking to traditions

20. The purpose of a business plan is to:

a) Attract investors

b) Display the size of the company

c) Increase company debts

d) Find potential partners

21. Innovation entrepreneurship is one of the driving forces of economic development, do you agree?

a) Agree

b) Disagree

c) Sometimes agree, sometimes disagree

d) Uncertain

22. At which stage do entrepreneurs face the greatest challenges?

a) Startup stage

b) Growth stage

c) Maturity stage

d) Exit stage

23. Which of the following is not a key factor of entrepreneurial success?

a) Product quality

b) Market demand

c) Teamwork

d) Ignoring market changes

24. Qualities that entrepreneurs should possess include:

a) Refusing to admit failure

b) Prudent risk-taking

c) Avoiding teamwork

d) Unwillingness to learn and adapt

25. A key factor in entrepreneurial success is:

a) Ignoring market changes

b) Lack of communication skills

c) Teamwork

d) Continuous copying of competitors

26. The financial part of a business plan includes:

a) Company's mission and vision

b) Balance sheet

c) Market research results

d) Entrepreneur's experience

27. One of the key factors for entrepreneurial success is:

a) Relying on a single customer

b) Lack of creativity

c) Unwillingness to cooperate with other companies

d) Product or service differentiation

28. The impact of innovation entrepreneurship on society includes:

a) Creating job opportunities

b) Increasing environmental pollution

c) Reducing economic growth

d) Increasing social instability

29. One of the advantages of innovation entrepreneurship is:

a) Ensuring stability during economic downturns

b) Increasing competition

c) Decreasing job opportunities

d) Restricting creativity and innovation

30. One challenge in the innovation entrepreneurship process is:

a) Lack of market opportunities

b) Ignoring competitors

c) Refusing to learn and adapt

d) Depending on a single source of income

31. The purpose of entrepreneurial training assessment is to:
a) Limit innovation capability
b) Ignore market demand
c) Assess students' entrepreneurial abilities and growth
d) Cut education budgets

32. One of the goals of innovation entrepreneurship training is:
a) Limiting students' creativity
b) Enhancing students' entrepreneurial spirit and practical abilities
c) Cutting entrepreneurial opportunities
d) Ignoring market demand

33. Continuous learning in entrepreneurial training means:
a) Unwillingness to adapt to changes
b) Neglecting personal development
c) Continuous learning and skill improvement
d) Ignoring market demand

34. Methods of entrepreneurial training may include:
a) Teamwork and project practice
b) Completing tasks alone
c) Waiting for opportunities
d) Ignoring market demand

35. The environment of entrepreneurial training should be:
a) Monotonous
b) Resource-lacking
c) Creativity inspiring
d) Unwilling to learn

36. Key policies of entrepreneurial training may include:

a) Restricting business development

b) Decreasing innovation investment

c) Government support and incentive programs

d) Increasing tax burden

37. Evaluation indicators of entrepreneurial training may include:

a) Ignoring market demand

b) Teamwork ability

c) Single market research

d) Lack of creativity

38. Continuous learning in entrepreneurial training means:

a) Unwillingness to cooperate with others

b) Lack of innovative thinking

c) Continuous learning and skill improvement

d) Unwillingness to adapt to changes

39. Goals of entrepreneurial training may include:

a) Restricting competition

b) Lowering product quality

c) Cultivating entrepreneurial spirit and practical abilities

d) Ignoring market demand

40. Contents of entrepreneurial training may include:

a) Political learning

b) Lack of market research

c) Creative development and business plan preparation

d) Ignoring competitors

41. Qualities that training instructors in entrepreneurial training should possess include:

a) Lack of innovative ability

b) No practical experience

c) Rich industry experience and entrepreneurial knowledge

d) Poor communication skills

42. The importance of entrepreneurial practice is reflected in:

a) Theoretical research

b) Observing others' entrepreneurial experiences

c) Practical operations

d) Ignoring market demand

43. The formulation of entrepreneurial policies should take into account:

a) Reducing entrepreneurial opportunities

b) Restricting innovation development

c) Supporting and encouraging entrepreneurial activities

d) Increasing tax burden

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b) Ignore market demand

c) Assess students' entrepreneurial abilities and growth

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a) Restricting business development

b) Decreasing innovation investment

c) Government support and incentive programs

d) Increasing tax burden

50. Evaluation indicators of entrepreneurial training may include:

a) Ignoring market demand

b) Teamwork ability

c) Single market research

d) Lack of creativity

answer:

1-5: bbcdb; 6-10: cdccc; 11-15: bcabc; 16-20: cbdda; 21-25: aadbc;

26-30: bdabc; 31-35: cbcac; 36-40: cbccc; 41-45: ccccb; 45-46: caccb

Research evaluation form

Subject

Course experiment satisfaction survey questionnaire

Research objective

To evaluate satisfaction with the course experiments of entrepreneur training model for undergraduate students at Liuzhou Institute of Technology.

Explanation

1. This Satisfaction Questionnaire is intended to collect your opinions about the course experiments of entrepreneur training model. The questions in the satisfaction survey cover nine aspects of the course experiments, which are developed based on the entrepreneur training model at Liuzhou Institute of Technology.

2. The feedback is used to improve the course experiments developed based on the entrepreneurship training model at Liuzhou Institute of Technology. Please consider what is specified in each item. How consistent is it in practice? Then check ✓ in the box according to your opinion as follows:

Score level 5 means most consistent.

Score level 4 means very consistent.

Score level 3 means moderately consistent.

Score level 2 means less consistent.

Score level 1 means least consistent.

The last section suggestions and reasons asks you to express your opinions. In order to make the details of the course experiment.

Open-ended questions at the end of each episode's schedule. Please give additional comments or suggestions for the completeness of each aspect of the format in particular.

Part 1: General information of the respondent

Part 2: Training objective

Part 3: Training content

Part 4: Training method

Part 5: Training teacher

Part 6: Training environment

Part 7: Entrepreneurship practice

Part 8: Entrepreneurship policy

Part 9: Training evaluation

Part 10: Continue learning

Part 11: Supplement and suggestion

Part 1: General information of the evaluator.

1. Name.....

2. Age.....years

3. Gender.....

4. Grade.....

5. Major.....

Part 2: Satisfaction survey of courses developed based on the entrepreneurship training model at Liuzhou Institute of Technology, **Training objective**.

Explanation: Please mark √ in the box that indicates your satisfaction level, and provide your comments, suggestions, and reasons.

	Training objective	level of compliance					Suggestions and reasons (if any)
		5	4	3	2	1	
1	Do you find the training objectives of the course clear?						
2	Do you think the training objectives align with your innovation and entrepreneurship needs?						
3	Do you believe the training objectives clearly guide your learning direction?						
4	Do you find the difficulty level of achieving the training objectives appropriate?						

Additional comments or suggestions regarding training objective.

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Part 3: Satisfaction survey of courses developed based on the entrepreneurship training model at Liuzhou Institute of Technology, **Training content**.

Explanation: Please mark √ in the box that indicates your satisfaction level, and provide your comments, suggestions, and reasons.

	Training content	level of compliance					Suggestions and reasons (if any)
		5	4	3	2	1	
1	Are you satisfied with the overall arrangement of the course content?						
2	Do you think the course content covers the key knowledge and skills you need to master?						
3	Do you believe the course content effectively enhances your innovation and entrepreneurship abilities?						
4	Do you think the course content keeps up with the development trends in entrepreneurship?						

Additional comments or suggestions regarding training content.

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Part 4: Satisfaction survey of courses developed based on the entrepreneurship training model at Liuzhou Institute of Technology, **Training method.**

Explanation: Please mark √ in the box that indicates your satisfaction level, and provide your comments, suggestions, and reasons.

	Training method	level of compliance					Suggestions and reasons (if any)
		5	4	3	2	1	
1	Are you satisfied with the teaching methods used in the course?						
2	Do you think the teaching methods of the course can stimulate your interest in learning?						
3	Are you satisfied with the interactivity and engagement of the course?						
4	Do you believe the teaching methods contribute to the effectiveness of the entrepreneurship training?						

Additional comments or suggestions regarding training method.

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Part 5: Satisfaction survey of courses developed based on the entrepreneurship training model at Liuzhou Institute of Technology, **Training teacher**.

Explanation: Please mark √ in the box that indicates your satisfaction level, and provide your comments, suggestions, and reasons.

	Training teacher	level of compliance					Suggestions and reasons (if any)
		5	4	3	2	1	
1	Are you satisfied with the professional level of the training teachers?						
2	Do you think the training teachers can effectively impart knowledge and skills related to innovation and entrepreneurship?						
3	How do you evaluate the personal attitude and teaching style of the training teachers?						
4	Do you think the training teachers also support you in innovation and entrepreneurship outside the classroom?						

Additional comments or suggestions regarding training teacher.

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Part 6: Satisfaction survey of courses developed based on the entrepreneurship training model at Liuzhou Institute of Technology, **Training environment**.

Explanation: Please mark √ in the box that indicates your satisfaction level, and provide your comments, suggestions, and reasons.

	Training environment	level of compliance					Suggestions and reasons (if any)
		5	4	3	2	1	
1	Are you satisfied with the training environment of the course?						
2	Do you think the training environment supports your entrepreneurship training?						
3	Do you think the training environment supports your entrepreneurial practice?						
4	Do you believe the training environment keeps up with the trends in entrepreneurship?						

Additional comments or suggestions regarding training environment.

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Part 7: Satisfaction survey of courses developed based on the entrepreneurship training model at Liuzhou Institute of Technology, **Entrepreneur practice**.

Explanation: Please mark √ in the box that indicates your satisfaction level, and provide your comments, suggestions, and reasons.

	Entrepreneur practice	level of compliance					Suggestions and reasons (if any)
		5	4	3	2	1	
1	Are you satisfied with the entrepreneurial practice opportunities provided by the course?						
2	Do you think the entrepreneurial practice in the course can help you face real challenges?						
3	Do you believe the entrepreneurial practice is related to your future entrepreneurial development plan?						
4	Do you think the entrepreneurial practice provided by the course matches your personal entrepreneurial project needs?						

Additional comments or suggestions regarding entrepreneur practice.

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Part 8: Satisfaction survey of courses developed based on the entrepreneurship training model at Liuzhou Institute of Technology, **Entrepreneurship policy**.

Explanation: Please mark √ in the box that indicates your satisfaction level, and provide your comments, suggestions, and reasons.

	Entrepreneurship policy	level of compliance					Suggestions and reasons (if any)
		5	4	3	2	1	
1	Are you satisfied with the entrepreneurial policies and support measures provided by the government and the school?						
2	Do you believe the entrepreneurial policies provided by the government and the school can effectively promote your entrepreneurial intentions?						
3	Do you think the entrepreneurial policies provided by the government and the school fully support students' innovation and entrepreneurship activities?						
4	Do you believe the entrepreneurial policies provided by the government and the school can significantly increase the success rate of entrepreneurship?						

Additional comments or suggestions regarding entrepreneurship policy.

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Part 9: Satisfaction survey of courses developed based on the entrepreneurship training model at Liuzhou Institute of Technology, **Training evaluation**.

Explanation: Please mark √ in the box that indicates your satisfaction level, and provide your comments, suggestions, and reasons.

	Training evaluation	**level of compliance**					**Suggestions and reasons (if any)**
		5	**4**	**3**	**2**	**1**	
1	Do you think the evaluation methods of the course are fair and reasonable?						
2	Do you believe the evaluation results of the course objectively reflect your training performance?						
3	Do you think the course evaluations can help you identify and improve your learning deficiencies?						
4	Do you believe the course evaluations are paired with corresponding incentive policies?						

Additional comments or suggestions regarding training evaluation.

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Part 10: Satisfaction survey of courses developed based on the entrepreneurship training model at Liuzhou Institute of Technology, **Continue learning**.

Explanation: Please mark √ in the box that indicates your satisfaction level, and provide your comments, suggestions, and reasons.

	Continue learning	**level of compliance**					**Suggestions and reasons (if any)**
		5	**4**	**3**	**2**	**1**	
1	Are you satisfied with the continuing learning opportunities provided by the course?						
2	Do you think the continuing learning arrangements of the course help your entrepreneurial development?						
3	Do you believe the continuing learning plans of the course meet your subsequent entrepreneurial needs?						
4	Do you think the continuing learning plans of the course can keep up with the trends in entrepreneurship?						

Additional comments or suggestions regarding Continue learning.

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Part 11: Supplement and suggestion

Please provide specific suggestions for the courses developed based on the entrepreneurship training model at Liuzhou Institute of Technology. What training content do you think is still missing? Please list it out.

Appendix B

List of Specialists and Letters of specialists Invitation for IOC Verification

Ref. No. MHESI 0643.14/ 32

Graduate School
BansomdejchaoprayaRajabhat University
1061 Itsarapap 15 Itsarapap Rd.
Thonburi Bangkok 10600

January 2024

RE: Invitation to validate research instrument

Dear Dr.Soisuda Lohmood

Mr. Xiao Wenjun is a graduate student in Doctor of Philosophy in Technology and Innovation Management Program at Bansomdejchaopraya Rajabhat University. He is undertaking research entitle "Development of an Entrepreneurship Training Model for Student in the Liuzhou Institute of Technology".

The thesis adversity committee has considered that you are an expert in this topic.Your recommendations would be useful for further improvement of this research instrument.

With your expertise, we would like to ask your permission to validate the attached research instrument. We would like to avail ourselves of this opportunity to express our sincere thanks and appreciation for your help.

Sincerely,

(Assistant Professor Akaranun Asavarutpokin)
Dean of Graduate School

BansomejchaoprayaRajabhat University
Tel. (662) 4737000
www.bsru.ac.th
E-mail:grad@bsruac.th

Ref. No. MHESI 0643.14/ 33

Graduate School
BansomdejchaoprayaRajabhat University
1061 Itsarapap 15 Itsarapap Rd.
Thonburi Bangkok 10600

January 2024

RE: Invitation to validate research instrument

Dear Asst. Prof. Dr. Nukul Sarawong

Mr. Xiao Wenjun is a graduate student in Doctor of Philosophy in Technology and Innovation Management Program at Bansomdejchaopraya Rajabhat University. He is undertaking research entitle "Development of an Entrepreneurship Training Model for Student in the Liuzhou Institute of Technology".

The thesis adversity committee has considered that you are an expert in this topic.Your recommendations would be useful for further improvement of this research instrument.

With your expertise, we would like to ask your permission to validate the attached research instrument. We would like to avail ourselves of this opportunity to express our sincere thanks and appreciation for your help.

Sincerely,

(Assistant Professor Akaranun Asavarutpokin)
Dean of Graduate School

BansomejchaoprayaRajabhat University
Tel. (662) 4737000
www.bsru.ac.th
E-mail:grad@bsruac.th

Ref. No. MHESI 0643.14/ 34

Graduate School
BansomdejchaoprayaRajabhat University
1061 Itsarapap 15 Itsarapap Rd.
Thonburi Bangkok 10600

January 2024

RE: Invitation to validate research instrument

Dear Dr. Nattachal Plienvijarn

Mr. Xiao Wenjun is a graduate student in Doctor of Philosophy in Technology and Innovation Management Program at Bansomdejchaopraya Rajabhat University. He is undertaking research entitle "Development of an Entrepreneurship Training Model for Student in the Liuzhou Institute of Technology".

The thesis adversity committee has considered that you are an expert in this topic.Your recommendations would be useful for further improvement of this research instrument.

With your expertise, We would like to ask your permission to validate the attached research instrument. We would like to avail ourselves of this opportunity to express our sincere thanks and appreciation for your help.

Sincerely,

(Assistant Professor Akaranun Asavarutpokin)
Dean of Graduate School

BansomejchaoprayaRajabhat University
Tel. (662) 4737000
www.bsru.ac.th
E-mail:grad@bsruac.th

Appendix C

Official Letter

1. Invitation from 9 interviewed experts
2. Invitation from 21 scoring experts
3. Invitation from 9 model evaluation experts

1. Invitation from 9 interviewed experts

Ref. No. MHESI 0643.14/ 44

Graduate School
BansomdejchaoprayaRajabhat University
1061 Itsarapap 15 Itsarapap Rd.
Thonburi Bangkok 10600

January 2024

Subject Requesting permission to collect data by attending an interview

Dear Luo Liqiu Liuzhou Guangxi Ronghui construction labor Co., LTD. Legal person

Attached Interview form

Mr. Xiao Wenjun is a graduate student in Doctor of Philosophy in Technology and Innovation Management Program at Bansomdejchaopraya Rajabhat University. He is undertaking research entitle "Development of an Entrepreneurship Training Model for Student in the Liuzhou Institute of Technology" There is a thesis advisory committee as follows:

1. Assoc. Prof.Dr.Natdanai Sighkhleewon Co-advisor
2. Assoc.Prof Dr Sombat Teekasap Co-advisor
3. Dr.Sirigarn Phokheaw Major advisor

In this regard, the thesis advisory committee has considered that you are an expert in this topic. Your recommendations would be useful for further improvement of this research instrument. Therefore, permission was requested to allow the students to take the interview. and set a date and time for students at your convenience.

We would like to avail ourselves of this opportunity to express our sincere thanks and appreciation for your help.

Sincerely,

(Assistant Professor Akaranun Asavarutpokin)
Vice Dean of Graduate School

BansomejchaoprayaRajabhat University
Tel. (662) 4737000
www.bsru.ac.th
E-mail:grad@bsruac.th

Classifier	NO.	Name	professional qualifications	Academic Degree	Position	Working life	Age
Entrepreneurial students on campus	1	Luo Liqiu	Not have	Master Degree	Guangxi Ronghui construction labor Co., LTD. Legal person	9	35
	2	Sun Chang	Not have	Bachelor degree	Guangxi Yiqi technology liability Co., LTD,Legal person	8	32
	3	Cao Qian	Not have	Master Degree	Chairman of Shanghai Wubang Industrial Group Co., LTD	10	36
Entrepreneurship coach on campus	1	Lai Qian	Senior economist	Master Degree	Teacher, Entrepreneurship coach,School of Art and Design, Liuzhou Institute of Technology	10	40
	2	Qin Guanglin	Associate professor	Doctor Degree	Teacher, entrepreneurship coach,School of Food and Chemical Engineering, Liuzhou Institute of Technology	13	39
	3	Su Xiangyun	Associate professor	Master Degree	Teacher, entrepreneurship coach,School of Foreign Languages and Literature,Liuzhou Institute of Technology	11	37
Innovation and entrepreneurship course teacher	1	Li Ming	Professor	Doctor Degree	Director of the Academic Affairs Office,Liuzhou Institute of Technology	13	47
	2	Huang Kaiping	Associate professor	Doctor Degree	Teacher, School of Civil Engineering, Liuzhou Institute of Technology	12	44
	3	Li Nong	Associate professor	Master Degree	Director of the Teaching and Research Department of the School of Innovation and Entrepreneurship, Liuzhou Institute of Technology	12	51

2. Invitation from 21 scoring experts

Ref. No. MHESI 0643.14/163

Graduate School
BansomdejchaoprayaRajabhat University
1061 Itsarapap 15 Itsarapap Rd.
Thonburi Bangkok 10600

February 2024

Subject Evaluate the consistency of elements of Entrepreneurship Training Model for Student in the Liuzhou Institute of Technology

Dear Xie Quan, Director of Venture Science and Technology Park, Liudong New District Management Committee, Liuzhou, Guangxi

Attached Validation sheets

Mr. Xiao Wenjun is a graduate student in Doctor of Philosophy in Technology and Innovation Management Program at Bansomdejchaopraya Rajabhat University. He is undertaking research entitle "Development of an Entrepreneurship Training Model for Student in the Liuzhou Institute of Technology" There is a thesis advisory committee as follows:

1. Assoc. Prof.Dr.Nutdanai Sighkhleewon Co-advisor
2. Assoc.Prof Dr Sombat Teekasap Co-advisor
3. Dr.Sirigarn Phokheaw Major advisor

In this regard, the thesis advisory committee has considered that you are an expert in this topic. Your recommendations would be useful for further improvement of this research instrument. Therefore, permission was requested to allow the students to take the evaluation. and set a date and time for students at your convenience.

We would like to avail ourselves of this opportunity to express our sincere thanks and appreciation for your help.

Sincerely,

(Assistant Professor Akaranun Asavarutpokin)
Vice Dean of Graduate School

BansomejchaoprayaRajabhat University
Tel. (662) 4737000
www.bsru.ac.th
E-mail:grad@bsruac.th

Classifier	NO.	Name	professional qualifications	Academic Degree	Position	Working life	Age
Innovation and entrepreneurship coach	1	Xie Quan	Senior entrepreneurship Coach	Bachelor degree	Director of Venture Science and Technology Park, Liudong New District Management Committee, Liuzhou, Guangxi	12	62
	2	Pan Liming	Senior entrepreneurship Coach	Bachelor degree	Guangxi Shangju Enterprise Management Consulting Co., LTD	13	50
	3	Li Yongjun	Senior entrepreneurship Coach	Master Degree	Guangxi Huadun Enterprise Management Consulting Co., LTD	13	53
	4	Yang Ming	Intermediate entrepreneurship coach	Master Degree	Liuzhou Aichuang Incubator Co., LTD	9	39
	5	Tang Shunjun	Intermediate entrepreneurship coach	Bachelor degree	Guangxi Lingxin Education Consulting Co., LTD	11	51
	6	Li Mingjing	Associate professor	Doctor Degree	School of Economics and Management, Guangxi University of Science and Technology	10	45
	7	Lv Dongwen	Intermediate entrepreneurship coach	Master Degree	General manager of Guangxi Soft Power Education Technology Co., LTD	9	43

Classifier	NO.	Name	professional qualifications	Academic Degree	Position	Working life	Age
Teacher of innovation and entrepreneurship courses in foreign schools	1	Wang Qiong	Senior entrepreneurship trainer	Bachelor degree	Chairman of Guangxi Zhiren Human Resources Co., LTD	20	66
	2	Li Guorui	Senior entrepreneurship trainer	Bachelor degree	Guangxi Xinzhi vocational skills training school principal	22	67
	3	Liang Shujie	Associate professor	Doctor Degree	Secretary of School of Continuing Education, Guangxi University of Science and Technology	11	45
	4	Lu Lanlan	Associate professor	Master Degree	Teacher, College of Innovation and Entrepreneurship, Liuzhou Vocational and Technical College	11	38
	5	Jiang Feng	Associate professor	Doctor Degree	Vice Dean, College of Innovation and Entrepreneurship, Guangxi University of Science and Technology	10	40
	6	Ke Qin	Associate professor	Doctor Degree	Librarian, Baise College	10	41
	7	Qin Qinghua	Associate professor	Doctor Degree	Faculty, School of Economics and Management, Baise College	10	39

Classifier	NO.	Name	professional qualifications	Academic Degree	Position	Working life	Age
Startup CEO	1	Peng Han	Not have	Master Degree	Liuzhou Sansheng New media Co., LTD	10	40
	2	Ye Gaohai	Not have	Bachelor degree	Executive Director of Guangxi Chuanghai Human Resources Co., LTD	8	33
	3	Pang Debiao	Not have	Bachelor degree	Chairman of Guangxi Luosige Trading Co., LTD	8	36
	4	Lin Linming	Not have	Master Degree	Guangxi adjacent small micro decoration design Co., LTD	9	35
	5	Wu Jingyu	Not have	Bachelor degree	Guangxi Tuyun network technology Co., LTD	8	32
	6	Pan Mingjie	Not have	Master Degree	Guangxi haha art training Co., Ltd. legal person	8	32
	7	Lei Zhiyang	Not have	Master Degree	General manager of Guangxi Zhiyang Logistics Co., LTD	7	35

3. Invitation from 9 model evaluation experts

Ref. No. MHESI 0643.14/ 154

Graduate School
BansomdejchaoprayaRajabhat University
1061 Itsarapap 15 Itsarapap Rd.
Thonburi Bangkok 10600

February 2024

Subject Evaluate the Entrepreneurship Training Model for Student in the Liuzhou Institute of Technology

Dear Xu Xiaozhong, School of automotive engineering Party branch secretary,Liuzhou Institute of Technology

Attached Validation sheets

Mr. Xiao Wenjun is a graduate student in Doctor of Philosophy in Technology and Innovation Management Program at Bansomdejchaopraya Rajabhat University. He is undertaking research entitle "Development of an Entrepreneurship Training Model for Student in the Liuzhou Institute of Technology" There is a thesis advisory committee as follows:

1. Assoc. Prof.Dr.Nutdanai Sighkhleewon Co-advisor
2. Assoc.Prof Dr Sombat Teekasap Co-advisor
3. Dr.Sirigarn Phokheaw Major advisor

In this regard, the thesis advisory committee has considered that you are an expert in this topic. Your recommendations would be useful for further improvement of this research instrument. Therefore, permission was requested to allow the students to take the evaluation. and set a date and time for students at your convenience.

We would like to avail ourselves of this opportunity to express our sincere thanks and appreciation for your help.

Sincerely,

(Assistant Professor Akaranun Asavarutpokin)
Vice Dean of Graduate School

BansomejchaoprayaRajabhat University
Tel. (662) 4737000
www.bsru.ac.th
E-mail:grad@bsruac.th

Classifier	Name	professional qualifications	Academic Degree	Position	Working life	Age
Entrepreneurship experts	Xu Xiaozhong	Associate professor	Master Degree	School of automotive engineering Party branch secretary,Liuzhou Institute of Technology	12	42
	Ma Jun	Professor	Doctor Degree	Dean of School of Innovation and Entrepreneurship, Nanning University	14	45
	Wen Jiayan	Professor	Doctor Degree	Dean of College of Innovation and Entrepreneurship, Guangxi University of Science and Technology	15	48
Modeling experts	Cai Xiang	Professor	Doctor Degree	Business School, Guilin University of Electronic Technology	27	65
	Qin Zhi	Senior economist	Doctor Degree	Guangxi Liuzhou Liudong New District Management Committee special expert	30	64
	Gao Bin	Professor	Doctor Degree	School of Economics and Management, Guangxi University for Nationalities	15	49
HR specialists	Li Xiaomin	Associate professor	Senior HR Engineer	HR Department, School of Economics and Management, Liuzhou Institute of Technology	20	54
	Zhang Junhui	Associate professor	Senior HR Engineer	Career Planning Department, Liuzhou Institute of Technology	18	46
	Meng Jia	HR manager	Senior HR Engineer	Guangxi Yemao Construction Group Co., LTD	10	39

Appendix D

The Results of the Quality Analysis of Research Instruments

1. Study the elements of entrepreneur training model for undergraduate students at Liuzhou Institute of Technology

2. Evaluate the elements of entrepreneur training model for undergraduate students at Liuzhou Institute of Technology

3. Evaluate the entrepreneur training model for undergraduate students at Liuzhou Institute of Technology

Analyze the quality of the interviews

Subject

Study the elements of entrepreneur training model for undergraduate students at Liuzhou Institute of Technology

Message list	Expert opinion			IOC value	Interpret results
	1	2	3		
Part 1: General information of the interviewee.					
1. Name.....					
2. Age.....years					
3. Highest educational qualification.....					
4. Work experience.....years					
5. Current job position.....					
Part 2: Training objective					
What do you consider the main objectives of entrepreneurial training? How do you ensure that training objectives closely match the actual needs of entrepreneurs?	1	1	1	1	Valid
Part 3: Training content					
What do you consider the main content of entrepreneurial training? Does the course design of entrepreneurship education, both in theory and practice, adequately meet the learning needs of entrepreneurs, and what aspects need further improvement?	1	1	1	1	Valid
Part 4: Training method					
Do you think training methods are a crucial element of the entrepreneurial training model? What methods do you believe should be included in an effective entrepreneur training model? Are there any new training methods or trends worth paying attention to?	1	1	1	1	Valid

Message list	Expert opinion			IOC value	Interpret results
	1	2	3		
Part 5: Training teacher					
Do you think training teachers are a crucial element of the entrepreneur training model? Where do teachers at your school or organization involved in innovation and entrepreneurship education come from? What roles do they play in the process of student entrepreneurship training? In the entrepreneur training model, what capabilities should teachers possess at different stages of training?	1	1	1	1	Valid
Part 6: Training environment					
Do you think the training environment is a crucial element of the entrepreneurial training model? If yes, what environmental support do you think schools should provide to college students in entrepreneur training? Besides the entrepreneurial environment provided by the school, what other environmental support can be offered to students?	1	1	1	1	Valid
Part 7: Entrepreneurship Practice					
Is entrepreneurship practice essential in the entrepreneur training model? If yes, what entrepreneurship practice activities can be designed to enhance students' entrepreneurial abilities? What are the current and future directions in the design of entrepreneurship practice?	1	1	1	1	Valid
Part 8: Entrepreneurship Policy					
Do you think policy support for entrepreneurship is an important element of the entrepreneur training model? If yes, what aspects of entrepreneurship stimulus and support policies are currently in place? Are they comprehensive, or should they be supplemented in certain areas? Who are the main bodies issuing relevant policies? Which stages of entrepreneurship training do these policies target?	1	1	1	1	Valid

Message list	Expert opinion			IOC value	Interpret results
	1	2	3		
Part 9: Training Evaluation					
Do you believe training effectiveness evaluation is an important element of the entrepreneur training model? If yes, what aspects should be evaluated to assess the effectiveness of entrepreneurship training?					
What are the specific methods and standards for evaluating training outcomes?	1	1	1	1	Valid
Is the current mechanism for evaluating training effectiveness complete? What potential improvements can be suggested to ensure a more comprehensive measurement of entrepreneurs' learning outcomes?					
Part 10: Continue learning					
How does the duration of training impact students' mastery of the content? After the conclusion of entrepreneurship education, do you provide post-training support, and if yes, what kind of assistance is offered?	1	1	1	1	Valid

Evaluation form for evaluate compliance

Subject

Evaluate the elements of entrepreneur training model for undergraduate students at Liuzhou Institute of Technology

Conformity evaluates items	Expert opinion			IOC value	Interpret results
	1	2	3		
Training objective					
Cultivate innovative thinking and enhance entrepreneurial willingness	1	1	1	1	Valid
Learn the basic processes and required skills for entrepreneurship	1	1	1	1	Valid
Practical to up skills and teamwork capabilities	1	1	1	1	Valid
Practice and apply learned professional knowledge to solve problems	1	1	1	1	Valid
Cultivate entrepreneurial insight and adaptability	1	1	1	1	Valid
Develop comprehensive entrepreneurial management and leadership abilities	1	1	1	1	Valid
Learning continuous innovation and personal development	1	1	1	1	Valid
Adapt to change market environments and technological trends	1	1	1	1	Valid
Offer continue learning courses and industry research projects	1	1	1	1	Valid

Conformity evaluates items	Expert opinion			IOC value	Interpret results
	1	2	3		
Training content					
Provide theoretical knowledge and case studies of entrepreneurship	1	1	1	1	Valid
Integrated entrepreneurship thinking into varieties subjects.	1	1	1	1	Valid
Encourage to knowledge and skills related to entrepreneurship process management	1	1	1	1	Valid
Learning entrepreneurship project incubation and guideline services	1	1	1	1	Valid
Entrepreneurship practice courses and internship in entrepreneur	1	1	1	1	Valid
Encourage to knowledge and skills related to business management	1	1	1	1	Valid
Share innovative entrepreneurship cases by seminars and others	1	1	1	1	Valid

Conformity evaluates items	Expert opinion			IOC value	Interpret results
	1	2	3		
Training method					
Teaching in classroom and group discussions	1	1	1	1	Valid
Use simulation and entrepreneurship sandbox methods	1	1	1	1	Valid
Guide student entrepreneurship teams through mentors	1	1	1	1	Valid
Enterprise internships and facilitate industry exchange activities	1	1	1	1	Valid
Continue guide student entrepreneurship projects	1	1	1	1	Valid
Provide short course training by expert lectures and discussion	1	1	1	1	Valid
Provide an online learning and cross-disciplinary cooperation platform	1	1	1	1	Valid

Conformity evaluates items	Expert opinion			IOC value	Interpret results
	1	2	3		
Training teacher					
Employ teachers with entrepreneurship knowledge and educational backgrounds	1	1	1	1	Valid
Teachers should be experience and guidance capabilities with project management	1	1	1	1	Valid
Teachers should be professional backgrounds and problem-solving abilities	1	1	1	1	Valid
Mentors should be industry backgrounds and project guidance capabilities	1	1	1	1	Valid
Employ mentors who are experts in specific fields in laws, finance, tax and another related	1	1	1	1	Valid

Conformity evaluates items	Expert opinion			IOC value	Interpret results
	1	2	3		
Training environment					
Provide facilities for entrepreneurial learning spaces and communities	1	1	1	1	Valid
Provide simulation technology to simulate the entrepreneurial process	1	1	1	1	Valid
Provide entrepreneurship incubators and laboratory facilities	1	1	1	1	Valid
Provide shared entrepreneurship resources and periodic mentor guidance	1	1	1	1	Valid
Provide entrepreneurship internships and office space for entrepreneurial practice projects	1	1	1	1	Valid
Provide startup networks and connections for early-stage enterprises	1	1	1	1	Valid
Cooperation between university and enterprise (entrepreneurship practice projects on campus)	1	1	1	1	Valid
Create a favorable ecosystem for innovation and entrepreneurship (culture, public opinion)	1	1	1	1	Valid

Conformity evaluates items	Expert opinion			IOC value	Interpret results
	1	2	3		
Entrepreneur practice					
Encourage and guide students to participate in university entrepreneurship training programs	1	1	1	1	Valid
Encourage and guide students to explore university science and technology project proposals	1	1	1	1	Valid
Encourage and guide students to engage in virtual simulation entrepreneurship training courses	1	1	1	1	Valid
Encourage and guide students to participate in entrepreneurship competitions	1	1	1	1	Valid
Encourage and guide students to engage in university-enterprise cooperation practice projects	1	1	1	1	Valid
Encourage and guide students in executing personal entrepreneurial plans	1	1	1	1	Valid
Provide guidance on managing the entrepreneurial process for students	1	1	1	1	Valid

Conformity evaluates items	Expert opinion			IOC value	Interpret results
	1	2	3		
Entrepreneurship policy					
Provide entrepreneurship learning materials and platform resources	1	1	1	1	Valid
Formulate entrepreneurship policies and support measures	1	1	1	1	Valid
Provide startup funding and funding policies for entrepreneurship projects	1	1	1	1	Valid
Establish entrepreneurship training subsidies and incentive policies	1	1	1	1	Valid
Offer funding support and tax incentives for entrepreneurship incubation projects	1	1	1	1	Valid
Develop entrepreneurship project selection and certification policies	1	1	1	1	Valid
Provide funding for continuous entrepreneurship development and technology transfer policies	1	1	1	1	Valid
Formulate entrepreneurship mentor and professional service subsidy policies	1	1	1	1	Valid
Develop incentive policies for internal entrepreneurship mentors	1	1	1	1	Valid

Conformity evaluates items	Expert opinion			IOC value	Interpret results
	1	2	3		
Training evaluation					
Establish entrepreneurship learning objectives and assessment criteria	1	1	1	1	Valid
Conduct assessments and feedback on entrepreneurial intentions and capabilities	1	1	1	1	Valid
Establish evaluation criteria for entrepreneurship projects	1	1	1	1	Valid
Conduct presentations and defenses of entrepreneurship project outcomes	1	1	1	1	Valid
Evaluate and track the performance of entrepreneurship practices	1	1	1	1	Valid
Conduct evaluations and adjustments of entrepreneurship project outcomes	1	1	1	1	Valid
Establish certification standards for continuing entrepreneurship education	1	1	1	1	Valid
Evaluate entrepreneurship achievements and societal impacts.	1	1	1	1	Valid

Conformity evaluates items	Expert opinion			IOC value	Interpret results
	1	2	3		
Continue learning					
Provide continue learning opportunities and resources for entrepreneurs	1	1	1	1	Valid
Offer entrepreneurs platforms for interdisciplinary learning and exchange	1	1	1	1	Valid
Provide entrepreneurs with industry updates and trend analysis	1	1	1	1	Valid
Offer entrepreneurs mentorship, guidance, and coaching services	1	1	1	1	Valid
Facilitate the sharing of innovative entrepreneurship cases and seminars for entrepreneurs	1	1	1	1	Valid
Provide industry research and project support for entrepreneurs	1	1	1	1	Valid

Evaluation form for evaluate compliance

Subject

Evaluate the entrepreneur training model for undergraduate students at Liuzhou Institute of Technology

Conformity evaluate item	Expert opinion			IOC	Interpret results
	1	2	3	value	
Part 1: Overall Effectiveness of the Model					
Do you think this model can effectively cultivate learners' innovative thinking and entrepreneurial willingness?	1	1	1	1	Valid
Do you believe this model comprehensively covers the knowledge and skills required for entrepreneurship in the provided training content?	1	1	1	1	Valid
Does this model effectively stimulate learners' entrepreneurial enthusiasm and enhance practical abilities through the adopted training methods?	1	1	1	1	Valid
Regarding the role of training teachers, do you think this model can provide sufficient support from experienced and professional teachers?	1	1	1	1	Valid
In terms of the provided training environment, do you think this model can offer enough resources and space to support learners' entrepreneurial practices?	1	1	1	1	Valid
Do you believe this model can effectively promote learners' entrepreneurial practices and project outcomes?	1	1	1	1	Valid
With respect to resource allocation and policy settings, do you think this model can provide ample support and incentive measures for learners?	1	1	1	1	Valid
Regarding assessment and evaluation, do you think this model can accurately assess learners' entrepreneurial abilities and project presentations?	1	1	1	1	Valid
In terms of continuous learning, do you think the model provides effective and comprehensive follow-up learning plans for entrepreneurs?	1	1	1	1	Valid

Conformity evaluate item	Expert opinion			IOC value	Interpret results
	1	2	3		
Part 2: Completeness of Model Elements					
In the setting of training objectives, do you think these objectives cover the comprehensiveness of entrepreneurship education?	1	1	1	1	Valid
Regarding the arrangement of training content, do you think these contents cover various aspects required for entrepreneurship?	1	1	1	1	Valid
Concerning the selection of training methods, do you think these methods fully utilize different teaching tools and resources?	1	1	1	1	Valid
For the requirements of training teachers, do you think they possess sufficient professionalism and practical experience?	1	1	1	1	Valid
In the construction of training environment, do you think sufficient resources and support are provided?	1	1	1	1	Valid
Regarding the promotion of entrepreneurial practices, do you think sufficient practical opportunities and support are provided?	1	1	1	1	Valid
Concerning resource allocation and policy settings, do you think sufficient funding and policy support are provided?	1	1	1	1	Valid
Regarding assessment and evaluation systems, do you think they possess comprehensiveness and objectivity?	1	1	1	1	Valid

Conformity evaluate item	Expert opinion			IOC value	Interpret results
	1	2	3		
Part 3: Interrelationship of Model Elements					
In the evaluation of overall effectiveness, do you think there is good coordination and cooperation among various elements?	1	1	1	1	Valid
Regarding the assessment of the completeness of model elements, do you think they form an organic whole?	1	1	1	1	Valid
In the interrelationship of model elements, do you think there are deficiencies or conflicts between some elements?	1	1	1	1	Valid
Do you think there are relationships between some elements that can be further strengthened or improved?	1	1	1	1	Valid
Part 4: Additional Evaluation Aspects					
Do you think this model has long-term sustainability and can continuously provide effective entrepreneurship education?	1	1	1	1	Valid
In terms of social impact and contribution, do you think this model can have a positive impact on society, promoting economic growth and job creation?	1	1	1	1	Valid
Regarding internationalization and cross-cultural adaptability, do you think this model possesses sufficient characteristics to operate effectively in different cultural backgrounds and provide support for cross-border entrepreneurship?	1	1	1	1	Valid
Regarding the innovativeness and forward-looking nature of the model, do you think it can keep up with the times and continuously innovate and improve?	1	1	1	1	Valid
Please answer the above questions carefully based on your professional knowledge and experience, and provide your valuable opinions and suggestions. Your feedback will play a crucial role in improving and optimizing our entrepreneurial training model. Thank you for your cooperation and support!	1	1	1	1	Valid

Appendix E

Research Instrument

1. Research interview form
2. Elements evaluation form
3. Model evaluation form

Research interview form

Subject

Entrepreneur training development model for undergraduate students at Liuzhou Institute of Technology

Research objective

To study the elements of entrepreneur training model for undergraduate students at Liuzhou Institute of Technology.

Explanation

This interview form is part of research for a dissertation. The objective is to study the elements of entrepreneur training model. I will extract the elements of the entrepreneur training model from the information obtained, and use these elements to create the entrepreneur training model for undergraduate students at Liuzhou Institute of Technology. The information obtained will be kept confidential and will not cause any harm to your work. Please answer the interview questions as truthfully as possible. The interview is divided into 11 parts:

Part 1: General information of the interviewee

Part 2: Training objective

Part 3: Training content

Part 4: Training method

Part 5: Training teacher

Part 6: Training environment

Part 7: Entrepreneurship practice

Part 8: Entrepreneurship policy

Part 9: Training evaluation

Part 10: Continue learning

Part 11: Supplement and suggestion

Part 1: General information of the interviewee

1. Name.....

2. Age.....years

3. Highest educational qualification..... ....

4. Work experience.....years

5. Current job position ....

Part 2: Training objective

What do you consider the main objectives of entrepreneurial training?

How do you ensure that training objectives closely match the actual needs of entrepreneurs?

Write down the answers

Part 3: Training content

What do you consider the main content of entrepreneurial training?

Does the course design of entrepreneurship education, both in theory and practice, adequately meet the learning needs of entrepreneurs, and what aspects need further improvement?

Write down the answers

Part 4: Training method

Do you think training methods are a crucial element of the entrepreneurial training model?

What methods do you believe should be included in an effective entrepreneur training model?

Are there any new training methods or trends worth paying attention to?

Write down the answers

Part 5: Training teacher

Do you think training teachers are a crucial element of the entrepreneur training model?

Where do teachers at your school or organization involved in innovation and entrepreneurship education come from? What roles do they play in the process of student entrepreneurship training?

In the entrepreneur training model, what capabilities should teachers possess at different stages of training?

Write down the answers

Part 6: Training environment

Do you think the training environment is a crucial element of the entrepreneurial training model?

If yes, what environmental support do you think schools should provide to college students in entrepreneur training?

Besides the entrepreneurial environment provided by the school, what other environmental support can be offered to students?

Write down the answers

Part 7: Entrepreneurship Practice

Is entrepreneurship practice essential in the entrepreneur training model?

If yes, what entrepreneurship practice activities can be designed to enhance students' entrepreneurial abilities?

What are the current and future directions in the design of entrepreneurship practice?

Write down the answers

Part 8: Entrepreneurship Policy

Do you think policy support for entrepreneurship is an important element of the entrepreneur training model?

If yes, what aspects of entrepreneurship stimulus and support policies are currently in place? Are they comprehensive, or should they be supplemented in certain areas?

Who are the main bodies issuing relevant policies? Which stages of entrepreneurship training do these policies target?

Write down the answers

Part 9: Training Evaluation

Do you believe training effectiveness evaluation is an important element of the entrepreneur training model? If yes, what aspects should be evaluated to assess the effectiveness of entrepreneurship training?

What are the specific methods and standards for evaluating training outcomes?

Is the current mechanism for evaluating training effectiveness complete? What potential improvements can be suggested to ensure a more comprehensive measurement of entrepreneurs' learning outcomes?

Write down the answers

Part 10: Continue learning

How does the duration of training impact students' mastery of the content?

After the conclusion of entrepreneurship education, do you provide post-training support, and if yes, what kind of assistance is offered?

Write down the answers

Part 11: Supplement and suggestion

What elements do you believe should be included in the entrepreneur training model that are not mentioned in this interview outline? Please list them and provide a brief description.

Definition of terms

Definition of terms used in this research The researcher has defined the meanings used for mutual understanding as follows:

1. Training Objectives: The expected outcomes or goals of entrepreneurial training, including the enhancement of knowledge, skills, and qualities, aiming to better adapt to the entrepreneurial environment.

2. Training Content: Specific topics, courses, or skills covered in training, including market research, business plan writing, etc.

3. Training Method: The ways used to impart knowledge and cultivate skills, including classroom training, field visits, case analysis, mentor guidance, etc.

4. Training Teacher: The instructor or mentor who imparts knowledge and experience, typically an experienced professional, including on-campus teachers, entrepreneurial mentors, and experienced entrepreneurs.

5. Training Environment: The location and conditions where training activities take place, including on-campus theoretical classrooms, practical training bases, corporate internship bases, etc.

6. Entrepreneurship Practice: Participants engaging in operational and practical activities in real entrepreneurial situations to enhance practical operational capabilities.

7. Entrepreneurship Policy: Government policies and measures supporting entrepreneurship, including financial support, tax incentives, etc.

8. Training Evaluation: The process of regularly assessing training outcomes, including exams, project evaluations, feedback reviews, etc.

9. Continue learning: The duration of training and any subsequent learning support provided after training concludes, ensuring participants have sufficient time to master the required content.

10. Entrepreneur training: Entrepreneur training refers to the systematic process of providing individuals with the knowledge, skills, and resources necessary to develop and enhance their entrepreneurial abilities. This training aims to prepare individuals for the challenges and opportunities associated with starting and managing a business.

11. Entrepreneur Training Model: An entrepreneur training model is a structured approach or framework designed for the systematic development and education of individuals aspiring to become entrepreneurs. This model integrates various elements such as training objectives, content, methods, and evaluation to offer a comprehensive and effective training program for individuals seeking to venture into entrepreneurship.

Research evaluation form

Subject

Entrepreneur training development model for undergraduate students at Liuzhou Institute of Technology

Research objective

To evaluate the elements of entrepreneur training model for undergraduate students at Liuzhou Institute of Technology.

Explanation

1. This element evaluation form is intended to collect your opinions as an expert. The questions in the assessment are about the details of the elements of entrepreneur training model for undergraduate students at Liuzhou Institute of Technology. The assessment is divided into 9 Sections.

2. Comments are given to assess the consistency of the elements of entrepreneur training model for undergraduate students at Liuzhou Institute of Technology. Please consider what is specified in each item. How consistent is it in practice? Then check ✓ in the box according to your opinion as follows:

Score level 5 means most consistent.

Score level 4 means very consistent.

Score level 3 means moderately consistent.

Score level 2 means less consistent.

Score level 1 means least consistent.

The last section suggestions and reasons asks you to express your opinions. In order to make the details of the elements of the model more complete.

Open-ended questions at the end of each episode's schedule. Please give additional comments or suggestions for the completeness of each aspect of the format in particular.

Part 1: General information of the interviewee

Part 2: Training objective

Part 3: Training content

Part 4: Training method

Part 5: Training teacher

Part 6: Training environment

Part 7: Entrepreneurship practice

Part 8: Entrepreneurship policy

Part 9: Training evaluation

Part 10: Continue learning

Part 11: Supplement and suggestion

Note: Definitions of terms are at the end of the evaluation form.

Part 1: General information of the evaluator.

1. Name..... .....

2. Age.....years

3. Highest educational qualification.....

4. Work experience.....years

5. Current job position..... .....

Part 2: The elements of entrepreneur training model for undergraduate students at Liuzhou Institute of Technology, **Training objective**.

Explanation: Please mark ✓ in the box for the level of consistency that you think is most appropriate for the elements of entrepreneur training model for undergraduate students at Liuzhou Institute of Technology, along with your comments, suggestions, and reasons.

	Training objective	level of compliance					Suggestions and reasons (if any)
		5	4	3	2	1	
1	Cultivate innovative thinking and enhance entrepreneurial willingness						
2	Learn the basic processes and required skills for entrepreneurship						
3	Practical to up skills and teamwork capabilities						
4	Practice and apply learned professional knowledge to solve problems						
5	Cultivate entrepreneurial insight and adaptability						
6	Develop comprehensive entrepreneurial management and leadership abilities						
7	Learning continuous innovation and personal development						
8	Adapt to change market environments and technological trends						
9	Offer continue learning courses and industry research projects						

Additional comments or suggestions regarding training objective.

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Part 3: The elements of entrepreneur training model for undergraduate students at Liuzhou Institute of Technology, **Training content.**

Explanation: lease mark ✓ in the box for the level of consistency that you think is most appropriate for the elements of entrepreneur training model for undergraduate students at Liuzhou Institute of Technology, along with your comments, suggestions, and reasons.

	Training content	level of compliance					Suggestions and reasons (if any)
		5	4	3	2	1	
1	Provide theoretical knowledge and case studies of entrepreneurship						
2	Integrated entrepreneurship thinking into varieties subjects.						
3	Encourage to knowledge and skills related to entrepreneurship process management						
4	Learning entrepreneurship project incubation and guideline-services						
5	Entrepreneurship practice courses and internship in entrepreneur						
6	Encourage to knowledge and skills related to business management						
7	Share innovative entrepreneurship cases by seminars and others						

Additional comments or suggestions regarding training content.

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Part 4: The elements of entrepreneur training model for undergraduate students at Liuzhou Institute of Technology, **Training method.**

Explanation: lease mark ✓ in the box for the level of consistency that you think is most appropriate for the elements of entrepreneur training model for undergraduate students at Liuzhou Institute of Technology, along with your comments, suggestions, and reasons.

	Training method	level of compliance					Suggestions and reasons (if any)
		5	4	3	2	1	
1	Teaching in classroom and group discussions						
2	Use simulation and entrepreneurship sandbox methods						
3	Guide student entrepreneurship teams through mentors						
4	Enterprise internships and facilitate industry exchange activities						
5	Continue guide student entrepreneurship projects						
6	Provide short course training by expert lectures and discussion						
7	Provide an online learning and cross-disciplinary cooperation platform						

Additional comments or suggestions regarding training method.

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Part 5: The elements of entrepreneur training model for undergraduate students at Liuzhou Institute of Technology, **Training teacher.**

Explanation: lease mark ✓ in the box for the level of consistency that you think is most appropriate for the elements of entrepreneur training model for undergraduate students at Liuzhou Institute of Technology, along with your comments, suggestions, and reasons.

	Training teacher	level of compliance					Suggestions and reasons (if any)
		5	4	3	2	1	
1	Employ teachers with entrepreneurship knowledge and educational backgrounds						
2	Teachers should be having experience and guidance capabilities with project management						
3	Teachers should be having professional backgrounds and problem-solving abilities						
4	Mentors should be having industry backgrounds and project guidance capabilities						
5	Employ mentors who are experts in specific fields in laws, finance, tax and another related						

Additional comments or suggestions regarding training teacher.

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Part 6: The elements of entrepreneur training model for undergraduate students at Liuzhou Institute of Technology, **Training environment.**

Explanation: lease mark ✓ in the box for the level of consistency that you think is most appropriate for the elements of entrepreneur training model for undergraduate students at Liuzhou Institute of Technology, along with your comments, suggestions, and reasons.

	Training environment	level of compliance					Suggestions and reasons (if any)
		5	4	3	2	1	
1	Provide facilities for entrepreneurial learning spaces and communities						
2	Provide simulation technology to simulate the entrepreneurial process						
3	Provide entrepreneurship incubators and laboratory facilities						
4	Provide shared entrepreneurship resources and periodic mentor guidance						
5	Provide entrepreneurship internships and office space for entrepreneurial practice projects						
6	Provide startup networks and connections for early-stage enterprises						
7	Cooperation between university and enterprise (entrepreneurship practice projects on campus)						
8	Create a favorable ecosystem for innovation and entrepreneurship (culture, public opinion)						

Additional comments or suggestions regarding training environment.

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Part 7: The elements of entrepreneur training model for undergraduate students at Liuzhou Institute of Technology, **Entrepreneur practice.**

Explanation: lease mark ✓ in the box for the level of consistency that you think is most appropriate for the elements of entrepreneur training model for undergraduate students at Liuzhou Institute of Technology, along with your comments, suggestions, and reasons.

	Entrepreneur practice	level of compliance					Suggestions and reasons (if any)
		5	4	3	2	1	
1	Encourage and guide students to participate in university entrepreneurship training programs						
2	Encourage and guide students to explore university science and technology project proposals						
3	Encourage and guide students to engage in virtual simulation entrepreneurship training courses						
4	Encourage and guide students to participate in entrepreneurship competitions						
5	Encourage and guide students to engage in university-enterprise cooperation practice projects						
6	Encourage and guide students in executing personal entrepreneurial plans						
7	Provide guidance on managing the entrepreneurial process for students						

Additional comments or suggestions regarding entrepreneur practice.

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Part 8: The elements of entrepreneur training model for undergraduate students at Liuzhou Institute of Technology, **Entrepreneurship policy.**

Explanation: lease mark ✓ in the box for the level of consistency that you think is most appropriate for the elements of entrepreneur training model for undergraduate students at Liuzhou Institute of Technology, along with your comments, suggestions, and reasons.

	Entrepreneurship policy	level of compliance					Suggestions and reasons (if any)
		5	4	3	2	1	
1	Provide entrepreneurship learning materials and platform resources						
2	Formulate entrepreneurship policies and support measures						
3	Provide startup funding and funding policies for entrepreneurship projects						
4	Establish entrepreneurship training subsidies and incentive policies						
5	Offer funding support and tax incentives for entrepreneurship incubation projects						
6	Develop entrepreneurship project selection and certification policies						
7	Provide funding for continuous entrepreneurship development and technology transfer policies						
8	Formulate entrepreneurship mentor and professional service subsidy policies						
9	Develop incentive policies for internal entrepreneurship mentors						

Additional comments or suggestions regarding entrepreneurship policy.

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Part 9: The elements of entrepreneur training model for undergraduate students at Liuzhou Institute of Technology, **Training evaluation.**

Explanation: lease mark ✓ in the box for the level of consistency that you think is most appropriate for the elements of entrepreneur training model for undergraduate students at Liuzhou Institute of Technology, along with your comments, suggestions, and reasons.

	Training evaluation	level of compliance					Suggestions and reasons (if any)
		5	4	3	2	1	
1	Establish entrepreneurship learning objectives and assessment criteria						
2	Conduct assessments and feedback on entrepreneurial intentions and capabilities						
3	Establish evaluation criteria for entrepreneurship projects						
4	Conduct presentations and defenses of entrepreneurship project outcomes						
5 6	Evaluate and track the performance of entrepreneurship practices Conduct evaluations and adjustments of entrepreneurship project outcomes						
7	Establish certification standards for continuing entrepreneurship education						
8	Evaluate entrepreneurship achievements and societal impacts.						

Additional comments or suggestions regarding training evaluation.

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Part 10: The elements of entrepreneur training model for undergraduate students at Liuzhou Institute of Technology, **Continue learning.**

Explanation: lease mark ✓ in the box for the level of consistency that you think is most appropriate for the elements of entrepreneur training model for undergraduate students at Liuzhou Institute of Technology, along with your comments, suggestions, and reasons.

	Continue learning	level of compliance					Suggestions and reasons (if any)
		5	4	3	2	1	
1	Provide continue learning opportunities and resources for entrepreneurs						
2	Offer entrepreneurs platforms for interdisciplinary learning and exchange						
3	Provide entrepreneurs with industry updates and trend analysis						
4	Offer entrepreneurs mentorship, guidance, and coaching services						
5 6	Facilitate the sharing of innovative entrepreneurship cases and seminars for entrepreneurs Provide industry research and project support for entrepreneurs						

Additional comments or suggestions regarding Continue learning.

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Part 11: Supplement and suggestion

What elements do you believe should be included in the entrepreneur training model that are not mentioned in this interview outline? Please list them and provide a brief description.

Definition of terms

Definition of terms used in this research The researcher has defined the meanings used for mutual understanding as follows:

1. Training Objectives: The expected outcomes or goals of entrepreneurial training, including the enhancement of knowledge, skills, and qualities, aiming to better adapt to the entrepreneurial environment.

2. Training Content: Specific topics, courses, or skills covered in training, including market research, business plan writing, etc.

3. Training Method: The ways used to impart knowledge and cultivate skills, including classroom training, field visits, case analysis, mentor guidance, etc.

4. Training Teacher: The instructor or mentor who imparts knowledge and experience, typically an experienced professional, including on-campus teachers, entrepreneurial mentors, and experienced entrepreneurs.

5. Training Environment: The location and conditions where training activities take place, including on-campus theoretical classrooms, practical training bases, corporate internship bases, etc.

6. Entrepreneurship Practice: Participants engaging in operational and practical activities in real entrepreneurial situations to enhance practical operational capabilities.

7. Entrepreneurship Policy: Government policies and measures supporting entrepreneurship, including financial support, tax incentives, etc.

8. Training Evaluation: The process of regularly assessing training outcomes, including exams, project evaluations, feedback reviews, etc.

9. Continue learning: The duration of training and any subsequent learning support provided after training concludes, ensuring participants have sufficient time to master the required content.

10. Entrepreneur training: Entrepreneur training refers to the systematic process of providing individuals with the knowledge, skills, and resources necessary to develop and enhance their entrepreneurial abilities. This training aims to prepare individuals for the challenges and opportunities associated with starting and managing a business.

11. Entrepreneur Training Model: An entrepreneur training model is a structured approach or framework designed for the systematic development and education of individuals aspiring to become entrepreneurs. This model integrates various elements such as training objectives, content, methods, and evaluation to offer a comprehensive and effective training program for individuals seeking to venture into entrepreneurship.

Research evaluation form

Subject

Evaluate the entrepreneur training model for undergraduate students at Liuzhou Institute of Technology

Research objective

To evaluate the entrepreneur training model for undergraduate students at Liuzhou Institute of Technology.

Explanation

This entrepreneur training model evaluation form is intended to collect your opinions as an expert. The questions in the assessment are about the details of the effectiveness of entrepreneur training model for undergraduate students at Liuzhou Institute of Technology. The assessment is divided into 4 Sections include Section 1: Overall Effectiveness of the Model; Section 2: Completeness of Model Elements; Section 3: Interrelationship of Model Elements; Section 4: Additional Evaluation Aspects

Comments are given to assess the consistency of the effectiveness of live broadcast management model of fresh fruit E-commerce on consumers' online purchase in Guangxi. Please consider what is specified in each item. How consistent is it in practice? Then check ✓ in the box according to your opinion as follows:

Score level 0 means disagree.

Score level 1 means agree.

The last part suggestions and reasons asks you to express your opinions. In order to make the details of the effectiveness of entrepreneur training model for undergraduate students at Liuzhou Institute of Technology.

Part 1: Overall Effectiveness of the Model

Do you think this model can effectively cultivate learners' innovative thinking and entrepreneurial willingness?

Do you believe this model comprehensively covers the knowledge and skills required for entrepreneurship in the provided training content?

Does this model effectively stimulate learners' entrepreneurial enthusiasm and enhance practical abilities through the adopted training methods?

Regarding the role of training teachers, do you think this model can provide sufficient support from experienced and professional teachers?

In terms of the provided training environment, do you think this model can offer enough resources and space to support learners' entrepreneurial practices?

Do you believe this model can effectively promote learners' entrepreneurial practices and project outcomes?

With respect to resource allocation and policy settings, do you think this model can provide ample support and incentive measures for learners?

Regarding assessment and evaluation, do you think this model can accurately assess learners' entrepreneurial abilities and project presentations?

In terms of continuous learning, do you think the model provides effective and comprehensive follow-up learning plans for entrepreneurs?

Part 2: Completeness of Model Elements

In the setting of training objectives, do you think these objectives cover the comprehensiveness of entrepreneurship education?

Regarding the arrangement of training content, do you think these contents cover various aspects required for entrepreneurship?

Concerning the selection of training methods, do you think these methods fully utilize different teaching tools and resources?

For the requirements of training teachers, do you think they possess sufficient professionalism and practical experience?

In the construction of training environment, do you think sufficient resources and support are provided?

Regarding the promotion of entrepreneurial practices, do you think sufficient practical opportunities and support are provided?

Concerning resource allocation and policy settings, do you think sufficient funding and policy support are provided?

Regarding assessment and evaluation systems, do you think they possess comprehensiveness and objectivity?

Part 3: Interrelationship of Model Elements

In the evaluation of overall effectiveness, do you think there is good coordination and cooperation among various elements?

Regarding the assessment of the completeness of model elements, do you think they form an organic whole?

In the interrelationship of model elements, do you think there are deficiencies or conflicts between some elements?

Do you think there are relationships between some elements that can be further strengthened or improved?

Part 4: Additional Evaluation Aspects

Do you think this model has long-term sustainability and can continuously provide effective entrepreneurship education?

In terms of social impact and contribution, do you think this model can have a positive impact on society, promoting economic growth and job creation?

Regarding internationalization and cross-cultural adaptability, do you think this model possesses sufficient characteristics to operate effectively in different cultural backgrounds and provide support for cross-border entrepreneurship?

Regarding the innovativeness and forward-looking nature of the model, do you think it can keep up with the times and continuously innovate and improve?

Please answer the above questions carefully based on your professional knowledge and experience, and provide your valuable opinions and suggestions. Your feedback will play a crucial role in improving and optimizing our entrepreneurial training model. Thank you for your cooperation and support!

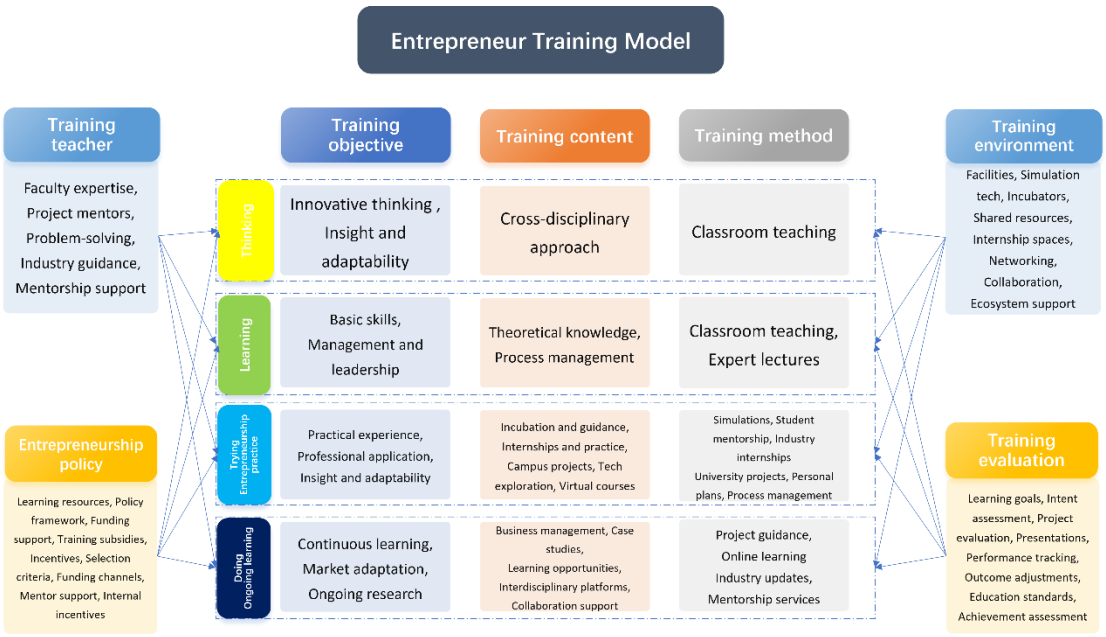

Figure 1.1 The entrepreneur training model for undergraduate students at Liuzhou Institute of Technology

Model Explanation:

This entrepreneurial training model divides the process of entrepreneurship training into four stages: thinking, learning, trying, and doing. Each stage has corresponding training objectives, training content, and training methods. Training teachers, training environments, training evaluations, and entrepreneurship policies play roles in the four training stages, with different impacts on the training process at each stage. The specific guidelines for using each element of the model are as follows when used in practice:

1.Define Training Objectives

Training objectives determine the direction and standards of the training. Based on the entrepreneurial vision and needs of the trainees, specify the specific outcomes they aim to achieve through the training. Training objectives should be specific, measurable, achievable, relevant, and time-bound.

2. Design Training Content

Training content determines the substance and scope of the training. Based on the training objectives of the trainees, select and arrange training content that suits

their entrepreneurial knowledge, skills, attitudes, and behaviors. Training content should be consistent, practical, and flexible.

3. Select Training Methods

Training methods determine the manner and form of the training. Based on the training content determined in the previous step, choose and utilize appropriate teaching and learning methods. Training methods should be adaptive, stimulating, facilitating, reflective, and effective.

4. Identify Training Teachers

Training Teachers determine the personnel and quality of the training. Based on the training objectives, content, and methods, identify and select suitable teachers, mentors, and experts. Training Teachers should possess professionalism, mastery, experience, affinity, and guidance.

5. Create Training Environment

The training environment determines the conditions and atmosphere of the training. Based on the training objectives, content, methods, and instructors, create and select appropriate physical, social, and cultural environments. The training environment should be safe, comfortable, and open.

6. Engage in Entrepreneurial Practice

Entrepreneurial practice determines the effectiveness and value of the training. Based on the training objectives, content, methods, instructors, and environment, participate in and experience entrepreneurial projects, activities, and processes. Entrepreneurial practice should be authentic, challenging, and feedback-oriented.

7. Entrepreneurial Policy Support

Entrepreneurial policy determines the support and regulation of the training. Based on the training objectives, introduce entrepreneurial policies from the government and society, and the school should also enact relevant entrepreneurial support policies. Entrepreneurial policies should be rational, fair, and transparent.

8. Conduct Training Evaluation

Training evaluation determines the improvement and refinement of the training. Based on the training objectives, content, methods, instructors, environment,

practice, and policies, conduct and accept training evaluations on aspects such as entrepreneurs, entrepreneurial projects, and entrepreneurial outcomes. Training evaluations should be objective, comprehensive, and timely.

9. Continue learning

Continue learning is the continuation and development of the entrepreneurial training model, enabling entrepreneurs to continuously update and expand their entrepreneurial knowledge and skills, optimize and improve their entrepreneurial projects and activities, and adapt and respond to their entrepreneurial environment and policies. Continue learning should be sustainable and successful.

Appendix F

Certificate of English

BANSOMDEJCHAOPRAYA
RAJABHAT UNIVERSITY

This is to certify that

Mr. Xiao Wenjun

Achieved BSRU English Proficiency Test (BSRU-TEP) level

C1

Given on 25th January 2021

(Assistant Professor Dr Kulsirin Aphiratvoradej)
Director

Appendix G

Accepting Letter for Publication of Full Paper

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คณะเทคโนโลยีอุตสาหกรรม
มหาวิทยาลัยราชภัฏสุรินทร์
อ.เมืองสุรินทร์ จ.สุรินทร์
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๒๒ เมษายน ๒๕๖๗

เรื่อง หนังสือรับรองการพิจารณาเพื่อร่วมตีพิมพ์บทความลงวารสารวิชาการเทคโนโลยีอุตสาหกรรม มหาวิทยาลัยราชภัฏสุรินทร์

เรียน Xiao Wenjun, Nutdanai Singkhleewon, Sombat Teekasap and Sirigarn Phokheaw

ตามที่ท่านได้ส่งบทความวิจัย **เรื่อง** Development of an Entrepreneurship Training Model for Student in the Liuzhou Institute of Technology เพื่อรับการพิจารณาตีพิมพ์ในวารสารวิชาการเทคโนโลยีอุตสาหกรรม มหาวิทยาลัยราชภัฏสุรินทร์ นั้น

ในการนี้กองบรรณาธิการได้ส่งบทความวิจัยของท่านให้ผู้ทรงคุณวุฒิพิจารณาประเมินแล้ว กองบรรณาธิการ มีมติให้ตีพิมพ์เผยแพร่ในวารสารวิชาการเทคโนโลยีอุตสาหกรรม คณะเทคโนโลยีอุตสาหกรรม มหาวิทยาลัยราชภัฏสุรินทร์ ปีที่ ๙ ฉบับที่ ๑ (มกราคม - มิถุนายน ๒๕๖๗)

จึงเรียนมาเพื่อโปรดทราบ

ขอแสดงความนับถือ

(ผู้ช่วยศาสตราจารย์ณัฐกานต์ พวงไพบูลย์)
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