Path and Model Construction for Cultivating Core Competences of Innovation and Entrepreneurship Teachers in Applied Undergraduate Colleges

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Abstract: This paper aims to explore the cultivation path and model construction of core competencies for innovation and entrepreneurship teachers in applied undergraduate colleges. A systematic, complete, and scientifically reasonable framework for teacher core competency model has been established by integrating relevant theories from education, management, and innovation and entrepreneurship fields. We extracted key factors that affect teachers’ core competencies from aspects such as educational background and professional knowledge, teaching methods and skills, practical experience in innovation and entrepreneurship, teamwork and leadership abilities, and teaching evaluation and feedback abilities, and conducted in-depth analysis. This paper constructs a core competency model for innovation and entrepreneurship teachers using methods such as expert interviews, questionnaire surveys, and case analysis, and verifies it. The research results show that the model has certain effectiveness and feasibility in practice, but it needs to be continuously updated and improved to adapt to the development and changes of innovation and entrepreneurship education. The research in this article is of great significance for promoting the in-depth development of innovation and entrepreneurship education.

Keywords: applied undergraduate colleges, innovation and entrepreneurship education, core competencies of teachers

1. Introduction

In today’s knowledge economy era, innovation and entrepreneurship capabilities have been widely recognized as key elements in responding to social changes and promoting economic development. In this context, as an important battlefield for cultivating innovative talents, applied undergraduate colleges and universities have particularly important innovation and entrepreneurship education. As an important component of education, teachers’ ability in innovation and entrepreneurship education is directly related to the cultivation of students’ innovation and entrepreneurship literacy [1]. However, there is currently a gap between the abilities and needs of innovation and entrepreneurship teachers in applied undergraduate colleges in China. The insufficient abilities of some teachers in innovation and entrepreneurship education have become an important factor restricting the improvement of education quality [2]. Therefore, studying how to effectively cultivate the core abilities of innovation and entrepreneurship teachers in application-oriented undergraduate colleges, and constructing a teacher training path and model suitable for the characteristics of application-oriented undergraduate colleges, has important theoretical and practical significance.

This paper aims to provide theoretical and practical support for improving the quality of innovation and entrepreneurship education in application-oriented undergraduate colleges by deeply exploring the path and model construction of core competency cultivation for innovation and entrepreneurship teachers in application-oriented undergraduate colleges. Firstly, the literature review section will be used to sort out and analyze the core competencies of innovation and entrepreneurship teachers and their current cultivation status, laying a foundation for subsequent research. Secondly, this paper will explore the cultivation paths of core competencies for innovation and entrepreneurship teachers in applied undergraduate colleges from the aspects of curriculum design, practical teaching, mentor guidance, and student participation, and deeply explore the advantages, disadvantages, and feasibility of various paths. Finally, this paper will construct a core competency model for innovation and entrepreneurship teachers in applied undergraduate colleges, and based on this, propose specific teacher...
training strategies and suggestions.

Through the research in this paper, it will contribute to further improving the training system for innovation and entrepreneurship teachers in applied undergraduate colleges, enhancing their innovation and entrepreneurship education abilities, promoting the quality and level of applied undergraduate education, and making positive contributions to China's higher education.

2. Literature review

2.1 Definition and connotation of core competencies of innovation and entrepreneurship teachers

The core competencies of innovation and entrepreneurship teachers refer to a series of basic qualities, knowledge, and skills that teachers need to possess in the field of innovation and entrepreneurship education, as well as a profound understanding and positive attitude towards innovation and entrepreneurship concepts [3]. These abilities include but are not limited to innovative thinking ability, entrepreneurial orientation ability, innovation and entrepreneurship course design and teaching ability, innovation and entrepreneurship case study and practical ability, student innovation and entrepreneurship guidance and coaching ability, etc. Firstly, innovative thinking ability is one of the important qualities that teachers should possess in teaching practice, which can inspire students' innovative consciousness and thinking methods, and stimulate their initiative and creativity in problem-solving. Secondly, entrepreneurial orientation ability encompasses a deep understanding of the entrepreneurial process, entrepreneurial environment, and entrepreneurial resources, as well as an accurate grasp of entrepreneurial risks and opportunities, thus providing students with professional entrepreneurial guidance and support. In addition, the design and teaching ability of innovation and entrepreneurship courses require teachers to have a scientific arrangement of innovation and entrepreneurship course content and flexible application of teaching methods, in order to achieve effective knowledge transmission and maximize learning effectiveness. Furthermore, the case study and practical ability of innovation and entrepreneurship refer to teachers continuously accumulating experience and improving their teaching level and guidance ability through practical case analysis and innovation and entrepreneurship project practice. Finally, the guidance and coaching abilities for student innovation and entrepreneurship require teachers to provide personalized guidance and guidance based on the individual characteristics of students and the needs of innovation and entrepreneurship projects, helping students overcome difficulties, achieve self growth and value realization. Overall, the improvement of core abilities of innovation and entrepreneurship teachers not only contributes to their professional development and career achievements, but also effectively promotes the comprehensive improvement of students' innovation and entrepreneurship awareness, ability, and quality, laying a solid foundation for their future development.

2.2 Analysis of the current situation of core competence cultivation for innovation and entrepreneurship teachers in applied undergraduate colleges

At present, the cultivation of core competencies for innovation and entrepreneurship teachers in applied undergraduate colleges in China is facing a series of problems that cannot be ignored [4-5]. Firstly, there is a significant deficiency in the awareness of innovation and entrepreneurship education among teachers, as they lack a profound understanding of the concepts and methods of innovation and entrepreneurship education. Although many teachers are actively involved in their teaching positions, they are still unclear about how to integrate innovation and entrepreneurship elements into the curriculum and stimulate students' entrepreneurial enthusiasm. Secondly, there are certain problems in the curriculum of innovation and entrepreneurship, lacking systematicity and completeness. The content of innovation and entrepreneurship courses in some universities is relatively lagging behind, unable to match the development of the times and industrial needs. This leads to students lacking necessary knowledge and skill support in the actual entrepreneurial process. In addition, the teaching methods for innovation and entrepreneurship by teachers are relatively single, lacking specificity and flexibility. Traditional teaching methods often focus on imparting knowledge, lacking practical operations and case analysis, making it difficult to truly stimulate students' potential for innovation and entrepreneurship. The teaching of applied undergraduate colleges should pay more attention to practice and case teaching, guiding students to deeply understand the entrepreneurial process and the challenges they face through real entrepreneurial cases and simulated practical activities. Finally, the lack of effective evaluation and incentive mechanisms is also one of the current problems, which has not effectively stimulated the enthusiasm and enthusiasm of teachers for innovation and entrepreneurship...
education. Teachers have invested a lot of energy and time in teaching, but lack scientific evaluation and recognition of their teaching effectiveness, which has led to a gradual decrease in the investment of some teachers in innovation and entrepreneurship education. Therefore, establishing a scientific and reasonable teaching evaluation mechanism to timely motivate and commend outstanding teachers will help stimulate their enthusiasm for innovation and entrepreneurship education, and promote the continuous improvement of teaching level.

In summary, to solve the problems in cultivating the core abilities of innovation and entrepreneurship teachers in applied undergraduate colleges in China, it is necessary to start from multiple aspects, including improving the awareness of innovation and entrepreneurship education among teachers, improving the curriculum of innovation and entrepreneurship, improving teaching methods, and establishing effective evaluation and incentive mechanisms. Only in this way can we better cultivate high-quality talents who meet the needs of the times and possess innovative and entrepreneurial spirit.

2.3 Overview of related theory and model research

In terms of cultivating the core abilities of innovation and entrepreneurship teachers, domestic and foreign scholars have conducted a large amount of theoretical research and practical exploration [6-7]. Among them, disciplines such as education, management, and psychology provide rich theoretical support for the construction and cultivation of core competencies of innovation and entrepreneurship teachers; At the same time, some application-oriented undergraduate colleges are actively exploring models and paths for cultivating core competencies of innovation and entrepreneurship teachers, forming some experiences and practices that have certain reference value. For example, the innovative entrepreneurship teacher training model led by case teaching, combined with the mentor system and practical teaching, has achieved certain results in some universities.

A review of theoretical and model research on the core competencies of innovation and entrepreneurship teachers can provide theoretical basis and practical reference for constructing a suitable training model for innovation and entrepreneurship teachers in applied undergraduate colleges.

3. Exploration of the path for cultivating core competences of innovation and entrepreneurship teachers in applied undergraduate colleges

In applied undergraduate colleges, cultivating teachers with innovative and entrepreneurial education concepts and practical abilities is the key to promoting the development of innovation and entrepreneurship education [8]. To meet this demand, there are various ways and means to construct a path for cultivating core competencies of innovation and entrepreneurship teachers, including curriculum design, practical teaching, mentor guidance, and student participation.

3.1 Core competency development path based on curriculum design

In terms of curriculum design, applied undergraduate colleges can take a series of measures to better meet the characteristics of disciplines and industry needs, and provide comprehensive innovation and entrepreneurship education and training for teachers. Based on the characteristics and industry trends of different disciplines, universities can design diverse professional courses, covering theories, methods, and case analysis of innovation and entrepreneurship education. These courses aim to provide teachers with a systematic theoretical foundation and help them gain a deeper understanding of the core concepts and practical skills of innovation and entrepreneurship education. Through the study of these professional courses, teachers will be able to systematically master the basic theories and methods of innovation and entrepreneurship education, thereby enhancing their teaching ability in innovation and entrepreneurship. These courses can cover multiple aspects such as entrepreneurship management, marketing, innovation and entrepreneurship policies, enabling teachers to have a comprehensive understanding of the knowledge system in the field of innovation and entrepreneurship, and providing students with more comprehensive guidance and support.

In addition to professional courses, applied undergraduate colleges can also invite successful entrepreneurs or industry experts to give lectures or provide practical guidance. Such activities can not only provide teachers with more direct and practical training, but also stimulate their enthusiasm for innovation and entrepreneurship education by sharing successful experiences and case studies. At the same time, universities can also organize teachers to participate in on-site inspections and practical
activities, allowing them to have a deep understanding of the latest developments and market demands in the field of innovation and entrepreneurship. By collaborating with enterprises or participating in entrepreneurial projects, teachers can combine theoretical knowledge with practical experience to further enhance their innovation and entrepreneurship teaching abilities, providing students with richer and more practical teaching content and methods.

In general, application-oriented undergraduate colleges can provide comprehensive innovation and entrepreneurship education and training for teachers, promote the improvement of their innovation and entrepreneurship teaching abilities, and provide better innovation and entrepreneurship education services for students by offering diversified professional courses, inviting entrepreneurs or industry experts to give lectures and practical guidance, as well as organizing on-site inspections and practical activities.

3.2 Path for cultivating core competencies based on practical teaching

Practical teaching is one of the important ways to cultivate the core abilities of innovation and entrepreneurship teachers [9]. Applied undergraduate institutions can deepen their teachers' involvement in practical innovation and entrepreneurship activities by organizing innovation and entrepreneurship practice projects, conducting enterprise internships, or school enterprise cooperation projects. Through personal participation and practice, teachers will be able to better understand the challenges and opportunities in the field of innovation and entrepreneurship, accumulate rich practical experience and cases, and thus enhance their practical ability and experience accumulation in innovation and entrepreneurship education.

In innovation and entrepreneurship practice projects, teachers can participate with students in project planning, team collaboration, market research, business model design, and other activities to gain a deeper understanding of various aspects and processes of innovation and entrepreneurship. Through close cooperation with students, teachers can leverage their professional knowledge and experience to guide students in solving practical problems and cultivate their innovation and entrepreneurship abilities. At the same time, conducting enterprise internships or school enterprise cooperation projects is also an important way to enhance the innovation and entrepreneurship education ability of teachers. Teachers can intern in enterprises to understand their operational models, management mechanisms, and innovative practices, so as to better introduce practical cases into teaching and enrich classroom content. By collaborating with enterprises to carry out projects, teachers can design innovation and entrepreneurship courses based on the needs of enterprises, cultivate students' ability to solve practical problems, and enhance their employment competitiveness.

In summary, through practical teaching, teachers can not only enhance their own innovation and entrepreneurship education abilities, but also provide students with more diverse and practical innovation and entrepreneurship education services, promoting their comprehensive development and improving their employability. Therefore, application-oriented undergraduate institutions should attach importance to the importance of practical teaching, continuously improve the mechanism of practical teaching, provide more opportunities and support for teachers to participate in practice, and promote the in-depth development of innovation and entrepreneurship education.

3.3 Core competency development path based on mentor guidance

Mentor guidance is an important support tool for personalized growth and ability enhancement of teachers [10]. Applied undergraduate colleges can establish a teacher mentor system for innovation and entrepreneurship, providing personalized guidance and guidance to teachers, thereby promoting their professional development and ability enhancement in the field of innovation and entrepreneurship education.

Under the innovation and entrepreneurship teacher mentor system, teachers can communicate and learn from experienced innovation and entrepreneurship education experts or senior teachers. This kind of communication and learning can not only help teachers solve problems encountered in actual teaching, but also enable them to receive more systematic and effective training. Mentors can tailor training plans based on the individual situation and professional needs of teachers, guiding them to continuously innovate in course design, teaching methods, case introduction, and other aspects to improve teaching quality and level. Through communication and learning with mentors, teachers can learn from the successful experiences and lessons of others, avoid detours, and grow and progress faster. Mentors can also provide teachers with the latest information and trends in the industry, helping
them adjust teaching content and methods in a timely manner, and maintaining the forefront and pertinence of teaching. In addition, the innovation and entrepreneurship teacher mentor system can also promote communication and cooperation among teachers. Teachers can establish a platform for cooperation and sharing through the mentor system, jointly explore the theory and practice of innovation and entrepreneurship education, learn from each other's experiences, and grow together.

3.4 Core competency development path based on student participation

Student participation is one of the core elements of innovation and entrepreneurship education, and it is also an important way for teachers to cultivate their abilities [11]. Applied undergraduate colleges can encourage teachers to participate in guiding and managing student innovation and entrepreneurship projects, and continuously exercise and improve their innovation and entrepreneurship education abilities through interaction and cooperation with students. At the same time, teachers can also be organized to participate in innovation and entrepreneurship competitions, forums, or seminars, expanding their horizons and communication space, and promoting the improvement of their innovation and entrepreneurship education abilities.

Through the comprehensive application of the above multiple paths, applied undergraduate colleges can effectively enhance the innovation and entrepreneurship education ability of teachers, laying a solid foundation for the cultivation of students' innovation and entrepreneurship abilities. At the same time, it is also necessary to focus on establishing effective evaluation and incentive mechanisms, stimulating the enthusiasm and enthusiasm of teachers for innovation and entrepreneurship education, and promoting the in-depth development of innovation and entrepreneurship education in applied undergraduate colleges.

4. Construction of core competence model for innovation and entrepreneurship teachers in applied undergraduate colleges

Building a core competency model suitable for innovation and entrepreneurship teachers in applied undergraduate colleges is an important part of promoting the sustainable development of innovation and entrepreneurship education. By establishing an effective model, it can guide teacher training and evaluation, improve their teaching level and practical ability.

4.1 Theoretical framework for model construction

The construction of the core competency model for innovation and entrepreneurship teachers needs to be based on relevant theoretical frameworks, which means that it is necessary to deeply reference and integrate relevant theories in education, management, and innovation and entrepreneurship fields. Firstly, theories in education can provide important guidance on teaching methods, learning theories, and curriculum design. This includes teaching theory, which involves principles and methods in teaching strategies, classroom management, and student participation. At the same time, educational evaluation theory is also crucial as it can help determine how to evaluate the effectiveness and effectiveness of innovation and entrepreneurship education, thereby continuously improving teaching practices. Secondly, relevant theories in the field of management are also important resources for constructing a model of teacher core competencies. Leadership theory can guide teachers on how to stimulate students' innovative potential and teamwork spirit, as well as how to effectively manage classrooms and projects. In addition, innovative management theory can provide teachers with practical methods and strategies on how to promote innovative thinking, manage innovative projects, and cultivate student entrepreneurial spirit.

By integrating these theories, a systematic, complete, and scientifically reasonable model framework can be constructed, providing a solid theoretical foundation and guiding principles for improving the abilities of innovation and entrepreneurship teachers. This model can not only help teachers comprehensively improve their teaching level and innovation and entrepreneurship abilities, but also promote the comprehensive development and growth of students in the field of innovation and entrepreneurship. Therefore, when constructing a core competency model for innovation and entrepreneurship teachers, it is necessary to comprehensively consider relevant theories from multiple disciplinary fields to ensure the scientificity and practicality of the model.
4.2 Extraction and analysis of key capability factors

In the process of model construction, it is necessary to extract and analyze the key factors that affect the core competencies of innovation and entrepreneurship teachers. These factors can include but are not limited to the following aspects: educational background and professional knowledge: The educational background and professional knowledge of teachers themselves have a significant impact on their innovation and entrepreneurship education ability. Having disciplinary knowledge and professional skills in relevant fields, able to better understand and apply innovation and entrepreneurship theory and practice; Teaching methods and skills: Teachers' teaching methods and skills are important factors that affect their teaching effectiveness. Including classroom teaching design, case analysis ability, practical teaching ability, etc., it is crucial to improve students' innovation and entrepreneurship ability; Innovation and Entrepreneurship Practice Experience: Whether a teacher has practical experience in innovation and entrepreneurship directly affects the quality and depth of their teaching. Entrepreneurial experience can make teachers more realistic and better guide students in innovative and entrepreneurial practices; Teamwork and leadership skills: Innovation and entrepreneurship education emphasizes the cultivation of teamwork and leadership skills. Teachers need to have a good sense of teamwork and leadership skills in order to effectively organize and manage student innovation and entrepreneurship activities; Teaching evaluation and feedback ability: Teachers need to have effective teaching evaluation and feedback ability, timely identify student problems and provide guidance and assistance, and promote the comprehensive development of their innovation and entrepreneurship abilities.

4.3 Model construction and validation

Building a core competency model for innovation and entrepreneurship teachers requires consideration of the key abilities and qualities that teachers need to possess in the field of innovation and entrepreneurship education. Through analysis, this study believes that innovation and entrepreneurship teachers primarily possess leadership skills. Leadership skills can help teachers establish a positive learning atmosphere in the classroom, stimulate students' innovative thinking and entrepreneurial spirit, promote teamwork among students, demonstrate a positive leadership style, and guide students in innovative practice and entrepreneurial activities. Secondly, the core competency model of innovation and entrepreneurship teachers also includes their teaching abilities, requiring them to master effective teaching methods and strategies, such as case teaching, project-based learning, etc. They should be able to design and organize innovation and entrepreneurship courses, including course outlines, teaching plans, and evaluation methods, understand students' learning needs, and adjust teaching content and methods according to actual situations. Thirdly, innovation ability. Teachers possess their own innovation ability and entrepreneurial experience, which can provide practical guidance and support to students. They can continuously update their knowledge and skills, keep up with the latest developments in the field of innovation and entrepreneurship, encourage students to explore innovation, and guide them to transform innovative concepts into practical actions. Fourthly, communication skills. We believe that through this approach, we can establish good communication and interaction relationships with students, promote information exchange and sharing, and effectively communicate and cooperate with peers, industry experts, and business partners. We have cross-cultural communication skills and can adapt to student groups with different backgrounds and cultures. Fifthly, evaluating abilities. We believe that this approach can effectively evaluate students' innovation and entrepreneurship abilities and achievements, including project outcomes, team collaboration abilities, etc. Based on the evaluation results, it can provide targeted feedback and guidance to students, help them continuously improve their own abilities, evaluate teaching effectiveness, and adjust teaching strategies and methods in a timely manner. Sixth, continuous learning ability. We believe that teachers should have the ability to self reflect and learn, continuously improve their teaching level and professional competence, actively participate in professional training and academic exchange activities, and keep up with the forefront of the industry. Teachers should be willing to accept new concepts and concepts, and continuously update teaching content and methods. As is shown in Figure1.
As shown in Figure 1, this model can serve as a framework that can be further refined and improved through specific research and practical experience to meet the needs of different schools and teaching environments. At the same time, teachers can provide targeted ability enhancement and training based on their own situation and development needs. Meanwhile, in the specific construction process, it is also necessary to consider the differences between different universities, disciplines, and teachers, in order to make the model as universal and applicable as possible. And it is necessary to focus on the sustainable development of the model, continuously update and improve it to adapt to the changes and developments in the field of innovation and entrepreneurship education.

5. Conclusion

The cultivation path and model construction of core competencies for innovation and entrepreneurship teachers in application-oriented undergraduate colleges is a key link in promoting the sustainable development of innovation and entrepreneurship education. This article explores the path and model from three aspects: constructing a theoretical framework, extracting and analyzing key competency factors, and constructing and validating the model. In terms of constructing a theoretical framework, this article draws on relevant theories from education, management, and innovation and entrepreneurship fields to construct a systematic, complete, scientifically reasonable model framework for teacher core competencies. This framework provides theoretical guidance and basic support for subsequent ability development. In terms of extracting and analyzing key competency factors, this article extracts key factors that affect teachers' core competencies from aspects such as educational background and professional knowledge, teaching methods and skills, practical experience in innovation and entrepreneurship, teamwork and leadership abilities, and teaching evaluation and feedback abilities. The analysis of these factors provides specific reference basis for subsequent ability development. In terms of model construction and validation, this article constructed a core competency model for innovation and entrepreneurship teachers through methods such as expert interviews, questionnaire surveys, and case analysis, and conducted validation. The verification results indicate that the model has certain effectiveness and feasibility in practical applications, but it also needs to be continuously updated and improved to adapt to the changes and developments in the field of innovation and entrepreneurship education.

In summary, the cultivation path and model construction of core competencies for innovation and entrepreneurship teachers in applied undergraduate colleges are important ways to promote the sustainable development of innovation and entrepreneurship education. Through continuous in-depth research and practical exploration, relevant theoretical frameworks and training paths can be further improved, and the teaching level and practical ability of teachers can be improved, laying a solid foundation for the cultivation of students' innovation and entrepreneurship abilities.

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