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Construction and Optimization Strategies for an Online Teaching Platform for College Students' Innovation and Entrepreneurship Education

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Abstract: With the advent of a new era, college student entrepreneurship education has garnered significant attention from universities and society at large. The aid of information technology brings new opportunities for the smooth execution of this work. Traditional education modes, affected by objective factors, have clear drawbacks. To enhance contemporary students' innovative abilities and core competitiveness, it is necessary to build a comprehensive online teaching platform for entrepreneurship education based on actual development conditions. This platform can leverage the advantages of the internet and information technology to accurately analyze students' learning abilities and needs, providing them with personalized educational resources. Moreover, incorporating virtual laboratories and simulated entrepreneurship into practical teaching can effectively cultivate students' problem-solving abilities, fostering the development of entrepreneurship education in universities and nurturing more well-rounded talents for society.

Keywords: Higher Education, Innovation and Entrepreneurship, Online Platform.

1. Introduction

China's high-quality economic development and deepening educational reforms have set new requirements for "mass entrepreneurship and innovation," also raising higher demands for college student entrepreneurship education in the new era. Universities, being the primary places for talent cultivation, see entrepreneurship education gaining widespread attention, beneficial for fostering constructive talents under the new era and strengthening national soft power. With the rapid development of digital technology, universities should stay up-to-date while conducting entrepreneurship education, constructing a flexible and efficient online teaching platform[1-4]. This complements and expands traditional teaching modes, serving as a crucial pathway for cultivating innovative talents in the new era. Through online teaching platforms, time and space limitations can be overcome, providing students with personalized, interdisciplinary educational resources. Advanced technologies like big data and artificial intelligence can be used to grasp students' learning abilities and needs, formulating the best learning paths and providing precise teaching support. Thus, constructing and innovating the online teaching platform for college students' entrepreneurship education can better meet societal development needs.

2. Potential Advantages of Constructing an Online Teaching Platform

2.1. Overcoming Practical and Spatial Limitations

With the rapid development of information technology, modern society's demand for talent has become more diverse. Universities, while conducting entrepreneurship education, should focus on cultivating students' innovative spirit and practical abilities. Traditional education modes have many shortcomings and can no longer meet the current societal development needs. Constructing an online teaching platform has become a primary focus for promoting the innovative development of entrepreneurship education[5-6]. Online education platforms can break time and space constraints, allowing students to study according to their needs with high flexibility, enhancing their initiative and learning effectiveness, providing vast learning space and rich resources. Hence, through online teaching platforms, students can access the latest entrepreneurship knowledge and interact with people from various fields, stimulating innovative thinking and improving entrepreneurial abilities.

2.2. Realizing Personalized Teaching

To conduct personalized teaching activities, existing university entrepreneurship education online platforms can be innovated. With the rapid development of artificial intelligence technology, various advanced technologies provide strong support for online teaching platforms. By comprehensively analyzing students' learning behaviors, abilities, and interests, the platform can better understand their learning needs. This data-driven personalized teaching approach brings a new learning experience, stimulating students' interest and motivation. In the new learning environment, students no longer passively receive knowledge but actively participate and make autonomous choices, enhancing their independent learning ability and innovative thinking[7-8]. This personalized teaching approach is significant for improving the quality of innovation education.

3. Problems in Innovation and Entrepreneurship Education

3.1. Weak Innovation and Entrepreneurship Awareness

Innovation and entrepreneurship awareness is the driving force for entrepreneurs to move forward and innovate. Some university students, subconsciously, perceive entrepreneurship as too risky. The past emphasis on exams over practice means that to increase the likelihood of entrepreneurial success, one must have good projects, sufficient funds, and professional skills. These biased thoughts hinder students' innovation and entrepreneurship awareness. When faced with difficulties and obstacles, most students tend to give up due to fear, opting for stable and low-risk jobs in public institutions or enterprises. College students, being the main recipients of entrepreneurship education, often lack strong innovation and entrepreneurship awareness, with relatively low entrepreneurial enthusiasm. Currently, students have unclear goals, lack psychological preparation, low enthusiasm, and fear difficulties, often choosing postgraduate exams or civil service exams post-graduation to avoid the realities of self-employment, directly affecting the effectiveness of entrepreneurship education.

3.2. Relatively Weak Teaching Force

The professional ability and comprehensive quality of teachers directly impact the effectiveness of university innovation and entrepreneurship education. Compared to traditional courses, innovation and entrepreneurship courses are relatively new, with some teachers serving part-time roles. Internal teachers from employment centers, university counselors, and student management staff often take on the role of professional entrepreneurship teachers. Inviting entrepreneurs and alumni is effective but limited[9]. When conducting systematic innovation and entrepreneurship education, teachers' knowledge of business management, marketing, financial management, and company operations is limited. External entrepreneurs and alumni often have limited time, unable to fully meet students' knowledge and skills needs. Additionally, teachers' heavy daily workloads limit their ability to invest more effort into entrepreneurship education, reducing the overall course quality. The lack of high-level professional teachers results in ineffective educational guidance, hindering the effectiveness of innovation and entrepreneurship education.

3.3. Lack of a Comprehensive Education System

In recent years, the country has introduced many policies and regulations for innovation and entrepreneurship education, alongside related requirements, but the supporting policies need improvement. Universities' inadequate emphasis on entrepreneurship education, coupled with the lack of professional talent cultivation plans and reasonable curriculum systems, abstract educational content, and limited teaching resources, all affect the final teaching outcomes. During innovation and entrepreneurship activities, the content (Figure 1) often lacks practicality and innovation, with limited activities and poor outcomes. Innovation and entrepreneurship clubs' activities are few and have limited influence, with very few entrepreneurial practice activities, failing to provide a good communication and practice platform for students interested in entrepreneurship. Furthermore, the lack of a strong entrepreneurial atmosphere within universities fails to meet students' personalized needs, reducing their entrepreneurial awareness.

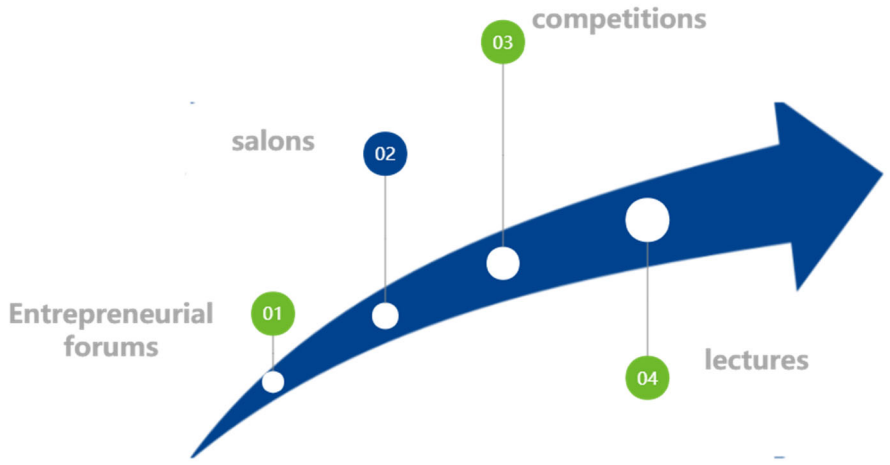

Figure 1. Traditional forms of entrepreneurial activity

3.4. Relatively Single Practice Platform

Modern society's demand for composite talents has significantly increased, with numerous policies related to innovation and entrepreneurship education. Society pays more attention to cultivating students' innovative thinking and practical abilities. However, influenced by traditional thinking, universities often focus on course content delivery while conducting entrepreneurship education, with limited practical education involvement[10-11]. Related policies have yet to be fully implemented within universities. Moreover, limited funding, human resources, and material resources for innovation and entrepreneurship practice platforms and bases result in low campus recognition and a need for improved entrepreneurial environments. The construction and use of these platforms require enhancement,

limiting the full potential of innovation and entrepreneurship practice education. If the theory and practice of entrepreneurship education are disconnected, even if universities establish practice bases and cooperate with enterprises, students are reluctant to invest more time, creating a vicious cycle where students lack innovation and entrepreneurship practice experience and interest.

4. Optimization Strategies for the Online Teaching Platform for College Students' Innovation and Entrepreneurship Education

4.1. Cultivating Students' Awareness of Innovation and Entrepreneurship

Innovation and entrepreneurship education should focus on cultivating students' awareness and thinking in these areas, teaching them to use innovative thinking to solve problems, which can lead to more development opportunities in their work and entrepreneurial endeavors. Universities should actively create an atmosphere of innovation and entrepreneurship, igniting students' passion and emphasizing increased participation in practical activities. Integrating innovation and entrepreneurship content into professional, general education, and entrepreneurship courses, combining theory with practice, and using both online and offline promotion are essential for comprehensively cultivating students' innovation and entrepreneurship awareness. Universities should encourage students to actively participate in major innovation and entrepreneurship competitions like "Challenge Cup", "China College Students' Service Outsourcing Innovation and Entrepreneurship Competition," and the "National College Students' Entrepreneurship Simulation Competition", to enhance their participation and practice abilities through competition.

4.2. Designing Personalized Learning Paths

In the higher education system, online education platforms play a crucial role. Each student is unique, and to meet their personalized needs, platforms should be tailored to actual conditions, considering students' learning paths and interests. Constructing an online teaching platform for innovation and entrepreneurship education should follow this principle, as shown in Figure 2, ensuring each student receives suitable educational resources. Identifying individual differences among students is a prerequisite for designing personalized learning paths. Using intelligent recommendation systems, the platform can analyze students' learning habits, performance, and preferences, providing them with appropriate learning resources and teaching methods. This personalized recommendation approach can significantly improve students' learning effectiveness, helping them understand and master innovation and entrepreneurship knowledge. Additionally, the platform should adjust content in real-time based on students' learning progress and feedback, ensuring they have the best learning experience at their own pace, and continue to progress.

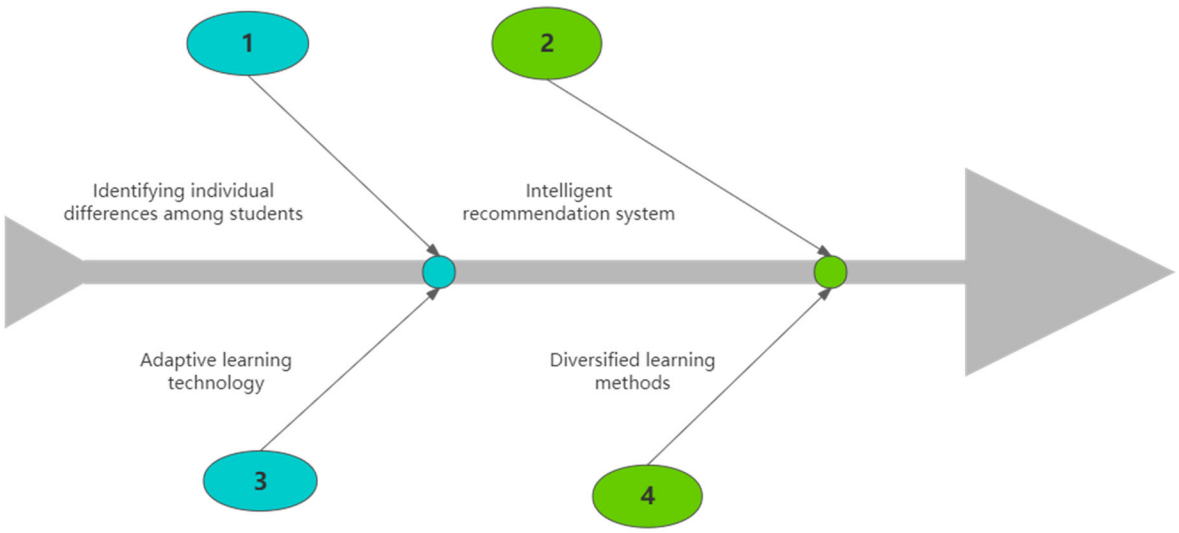

Figure 2. Design of Personalized Learning Paths

4.3. Strengthening Practical Teaching Segments

In innovation and entrepreneurship education, practical teaching segments play an essential role and should not be overlooked. Universities and teachers need to actively explore these aspects. Based on actual conditions, advanced virtual laboratory technology can be introduced into practical teaching segments, allowing students to conduct experimental operations in a virtual environment and simulate real innovation and entrepreneurship processes. The essence of learning knowledge is to apply it in practice. The platform can collaborate with enterprises and social institutions to provide students with rich online practical projects, integrating content like technological innovation, business planning, and market impact. This helps students combine theoretical knowledge with practical application. For instance, Chongqing University has partnered with enterprises through an online platform to launch "Entrepreneurship Training Projects." By combining online courses with practical on-site training, students can enjoy a one-stop entrepreneurial training service. Comparing the practical teaching segments of Chongqing University's online teaching platform before and after implementation, as shown in Table 1, students

participating in the project perform significantly better in entrepreneurial practices and have a higher success rate. This case fully demonstrates the effectiveness and outcomes of strengthening practical teaching segments through an online teaching platform[12].

Table 1. Comparison of Practical Teaching Segments on Chongqing University's Online Teaching Platform Before and After Implementation

Project	Before practice teaching (%)	After practice teaching (%)
Student engagement	50	85
Business plan submission rate	20	45
Entrepreneurial opportunity acquisition rate	10	30

4.4. Integrating Interdisciplinary Courses

As China's overall level continues to improve and industrial structures keep evolving, society's requirements for talents lean more towards innovation and comprehensiveness. For an online teaching platform, it is essential to integrate resources from different disciplines, focusing on promoting interdisciplinary education and learning. In the field of innovation and entrepreneurship education, integrating multiple disciplines can provide students with a comprehensive and systematic knowledge system. Designing courses that encompass various disciplinary fields helps students encounter more methods and theories, enhancing their problem-solving abilities. In practical activities, interdisciplinary projects can demonstrate the value of collaboration, with teachers encouraging students to actively participate. Students can use knowledge and skills from multiple disciplines and engage with peers from different academic backgrounds, improving their communication and teamwork abilities. Finally, teachers should also actively participate in interdisciplinary research and teaching collaborations, enhancing their professional competence and teaching abilities through cooperative research, providing high-quality educational services, and promoting the in-depth development of innovation and entrepreneurship education.

5. Practical Case - Chongqing University's Online Teaching Platform for Innovation and Entrepreneurship Education

In the practice of constructing and optimizing an online teaching platform for college students' innovation and entrepreneurship education, Chongqing University has achieved initial success. Firstly, student participation has significantly increased, with online learning time increasing by an average of 30%, and students willingly participating in various online discussion activities, indicating their recognition of the new teaching mode. Secondly, students' innovation abilities have improved. By introducing and strengthening practical teaching segments, students can apply theoretical knowledge in practice and have achieved excellent results in several innovation project competitions.

In the evaluation and feedback segment, the university shows great attention. It regularly collects student feedback and suggestions, constantly optimizing platform services, with over 85% of students expressing high satisfaction, further enhancing their learning experience[13]. Additionally, the university evaluates teachers' teaching effectiveness through course assessments and project reviews, leveraging the advantages of the online platform to better cultivate students' innovation and entrepreneurship abilities[14-15].

6. Conclusion

In the context of the new era, to improve employability, more and more college students are actively joining the entrepreneurial ranks. Although entrepreneurship is an important pathway to employment, many difficulties and dynamic issues exist. Therefore, under the backdrop of the information age, constructing an online platform for college students' innovation and entrepreneurship education is not only a reform of traditional teaching modes but also an active exploration of new-era talent cultivation modes. Teachers and related staff can leverage this platform to break time and space limitations, utilizing the advantages of big data and artificial intelligence to precisely push personalized teaching resources to students, thereby improving their learning effectiveness and innovative employability. In future development, continuous innovation based on application scenarios is necessary to explore more educational modes suitable for the times, contributing youthful strength to realizing the Chinese Dream of national rejuvenation.

7. Fund Project

This paper is a phased achievement of Hankou University's campus-level teaching reform research project, 'Developing an Efficient Online Teaching Model for College Students' Innovation and Entrepreneurship,' in 2024.

References

[1] Alfoudari A. M., Durugbo C. M., Aldhmour F. M. Understanding socio-technological challenges of smart classrooms using a systematic review. Computers and Education. 2021;173(85):104282–104367. doi: 10.1016/j.compedu.2021.104282.

[2] Aguilar J., Sánchez M., Cordero J. Learning analytics tasks as services in smart classrooms. Universal Access in the Information Society. 2017;(47):4562–5386.

[3] Lampoltshammer T. J., Albrecht V., Raith C. Teaching digital sustainability in higher education from a transdisciplinary perspective. Sustainability. 2021;13(42):473–587.

[4] Hou Z. K., Cheng H. L., Sun S. W., Chen J., Qi D. Q., Liu Z. B. Crack propagation and hydraulic fracturing in different lithologies. Applied Geophysics. 2019;16(2):243–251. doi: 10.1007/s11770-019-0764-3.

[5] Wolff C. E., Jarodzka H., Boshuizen H. Classroom management scripts: a theoretical model contrasting expert and novice teachers' knowledge and awareness of classroom events. Educational Psychology Review. 2020;2020(5):473–327.

[6] Cheng H., Wei J., Cheng Z. Study on sedimentary facies and reservoir characteristics of Paleogene sandstone in Yingmaili block. Tarim basin Geofluids. 2022;2022:p. 2321.

[7] Li X., Song J., Huang B. A scientific workflow management system architecture and its scheduling based on cloud service platform for manufacturing big data analytics. International Journal of Advanced Manufacturing Technology. 2016; 84(1-4): 119–131. doi: 10.1007/s00170-015-7804-9.

[8] Campo D., Cristina C.-M. Useful interactive teaching tool for learning: clickers in higher education. Interactive Learning Environments. 2016;234(4):346–434.

[9] Baturay M. H., Bay O. F. The effects of problem-based learning on the classroom community perceptions and achievement of web-based education students. Computers and Education. 2010;55(1):43–52. doi: 10.1016/j.compedu.2009.12.001.

[10] Han J., Cheng H., Shi Y., Wang L., Song Y., Zhnag W. Connectivity analysis and application of fracture cave carbonate reservoir in Tazhong. Science Technology and Engineering. 2016;16(5):147–152.

[11] Zhang J., Wenjun L. I. Cloud media platform applied to explore the advantages of broad-spectrum innovation and entrepreneurship education. Journal of Higher Education. 2018;42(00):43–682.

[12] Cheng H., Ma P., Dong G., Zhang S., Wei J., Qin Q. Characteristics of carboniferous volcanic reservoirs in beisantai oilfield, junggar basin. Mathematical Problems in Engineering. 2022;2022:1–10. doi: 10.1155/2022/7800630.

[13] Goos M., Salomons A. Measuring teaching quality in higher education: assessing selection bias in course evaluations. Research in Higher Education. 2017;37(837):724–547.

[14] Macleod J., Yang H. H., Zhu S., Li Y. Understanding students' preferences toward the smart classroom learning environment: development and validation of an instrument. Computers and Education. 2018; 122(8):80–91. doi: 10.1016/j.compedu. 2018.03.015.

[15] Hochweber J., Hosenfeld I., Klieme E. Classroom composition, classroom management, and the relationship between student attributes and grades. Journal of Educational Psychology. 2014;106(1):289–300.