Context of Digital Transformation Integration of Digital Technology Development and Innovation Entrepreneurship Education in Higher Education

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ABSTRACT

In the process of education digitisation, novel and powerful digital technologies have been widely innovated, developed and applied, which have greatly changed the technological environment of innovation and entrepreneurship education in colleges and universities. As the main position of talent input, colleges and universities should take full advantage of the east wind of the rapid development of digital technology to inject strong vitality and impetus into innovation and entrepreneurship education, and keep exploring new paths of dual-creation education. This paper aims to provide theoretical and practical guidance for the continuous optimisation of the higher education system. It analyses the necessity of carrying out innovation and entrepreneurship education in colleges and universities in the context of the new era, explores the relationship and role of the development of digital technology in colleges and universities and innovation and entrepreneurship education, and finally puts forward the strategies and paths to promote the development of innovation and entrepreneurship education.

KEYWORDS

Digital Transformation; Higher Education; Digital Technology; Innovation and Entrepreneurship.

1. INTRODUCTION

With the rapid development of science and technology, digital technology has become a powerful engine to promote social progress. Meanwhile, innovation and entrepreneurship education, as an important means of cultivating entrepreneurial spirit and practical ability, occupies an increasingly important position in higher education. The organic integration of digital technology and innovation and entrepreneurship education can not only promote the upgrading of the education system of colleges and universities, but also help to cultivate talents who are more adaptable to the needs of the future society.

2. BACKGROUND

In the context of the era of digital transformation, the rapid development of digital technology has profoundly changed the way we live, work and learn. The popularity and application of digital technology is not only the demand of enterprises and organisations, but also penetrates into the field of education. The development of digital technology provides unprecedented opportunities for education, especially in innovation and entrepreneurship education. The booming development of digital technology allows innovation and entrepreneurship education to be more relevant and flexible. Traditional education methods are no longer sufficient to meet the needs of the current society, and digital technology has injected new vitality into innovation and entrepreneurship education. Digital

not only makes local applied undergraduate colleges and universities face new challenges and impacts in school orientation, operation mode, education concept, quality evaluation, etc., but also brings innovative opportunities for them to optimise the allocation of education resources, enhance the fit between talent cultivation and social demand, empower the deep change of education mode, and grasp the initiative of reform in promoting the integration of industry and education [1].

Through digital transformation, students can experience the entrepreneurial process in a virtual environment, and cultivate innovation ability and teamwork spirit through simulation and practice. The development of digital technology also provides more teaching tools and resources for innovation and entrepreneurship education. The application of digital tools such as online learning platforms, virtual labs, and entrepreneurship simulation games allows innovation and entrepreneurship education to impart knowledge and skills in a more vivid and concrete way. Students can get real-time feedback through digital tools to improve their learning efficiency and better adapt to future career requirements. The development of digital technology has also given rise to new entrepreneurial opportunities and business models. Innovative entrepreneurship education is not just about fostering entrepreneurial spirit among students, but also providing them with opportunities to create new businesses using digital technologies. Digital transformation provides entrepreneurs with a broader market and more innovative tools to facilitate the development of the entrepreneurial ecosystem.

In summary, digital transformation brings unprecedented opportunities and challenges for innovation and entrepreneurship education. In this paper, we will discuss in depth the development and integration of digital technology in innovation and entrepreneurship education, and how to make better use of digital means to cultivate students' innovation and entrepreneurship, and to promote the development of the education field in the direction of more modernisation and innovation.

3. DEVELOPMENT NECESSITY

Digital technologies include artificial intelligence, big data, cloud computing, Internet of Things and other fields, and they are being rapidly popularised and applied worldwide. Colleges and universities should actively follow up the development trend of these technologies and comprehensively improve the application of digital technologies in higher education by building digital campuses, promoting online education, and carrying out scientific research and industrial cooperation. Digital transformation has not only changed the industrial structure and business model, but also profoundly affected the development of digital technology in colleges and universities. The application of digital technology in higher education has become an important means to improve teaching effectiveness and cultivate students' innovation ability. Through online learning and virtual labs, students can acquire knowledge more flexibly and improve their learning efficiency.

The necessity of carrying out innovation and entrepreneurship education in colleges and universities

Under the background of the new era, there is an urgent necessity to carry out innovation and entrepreneurship education in colleges and universities, which is mainly reflected in the following aspects:

The need to cope with economic transformation and upgrading: with the rapid development of science and technology and the adjustment of industrial structure, the social economy presents new characteristics, and the demand for talents has also changed. Innovation and entrepreneurship ability has become an important expectation of enterprises and society for college graduates. Through innovation and entrepreneurship education, colleges and universities can better meet the demand for diversified and innovative talents for economic transformation and upgrading.

Cultivate students' comprehensive literacy: innovation and entrepreneurship education helps to cultivate students' comprehensive literacy such as innovation spirit, teamwork ability and communication ability. In the new era, comprehensive literacy not only includes professional

knowledge, but also requires innovative thinking and entrepreneurial awareness to adapt to the increasingly complex and changing social environment.

Promote the combination of scientific and technological innovation and practice: the new era puts forward higher requirements for scientific and technological innovation, and innovation and entrepreneurship education can prompt colleges and universities to better combine theoretical knowledge with practice. Through innovation and practice, students can understand and apply what they have learnt more deeply and improve their ability to solve practical problems.

Cultivate talents adapted to future career development: with the rapid development of science and technology, the future career market will face new challenges and opportunities. Innovation and entrepreneurship education helps to cultivate students' independent entrepreneurial ability, making them more competitive and able to flexibly adapt to future career changes.

Promote the construction of entrepreneurial culture: innovation and entrepreneurship education helps to create a positive entrepreneurial culture in colleges and universities and stimulate the entrepreneurial enthusiasm of teachers and students. By providing entrepreneurial resources, mentor support and innovation and entrepreneurship activities, colleges and universities can cultivate more entrepreneurs and innovative teams and promote the inheritance and development of innovation and entrepreneurship culture.

In the context of the new era, innovation and entrepreneurship education in colleges and universities is not only for the personal development of students, but also a necessary task for the sustainable development of the social economy and the adaptation of future development needs. Through such education, colleges and universities can better fulfil the role of talent cultivation and promote the development of society in the direction of innovation, entrepreneurship and sustainability.

4. RELATIONSHIP AND ROLE

The development of digital technology in colleges and universities is closely related to innovation and entrepreneurship education, and the two promote each other and jointly promote the modernisation of the education system and the adaptation to future social needs.

Digital technology provides rich practical teaching tools for innovation and entrepreneurship education. Digital technology tools such as virtual labs, entrepreneurship simulation software, and online cooperation platforms enable students to practice in simulated environments, improve their practical problem-solving abilities, and promote the formation of innovation and entrepreneurship concepts. The development of digital technology has facilitated the rise of online learning platforms through which universities can offer innovative entrepreneurship courses, enabling students to learn relevant knowledge in a more flexible manner. Such platforms provide students with the opportunity to access resources and interactive learning anytime, anywhere, which promotes independent learning and the cultivation of innovative thinking. Using digital technologies, universities can create digital innovation environments to provide students with more entrepreneurial resources and support. This includes online guidance from entrepreneurial mentors and digital management of innovation and entrepreneurship projects, making the entrepreneurial process more efficient and controllable. In the digital era, entrepreneurs need to master digital marketing and promotion skills. Universities can help students better promote their entrepreneurial projects through teaching and developing their proficiency in the use of digital tools such as social media and search engine optimisation. Digital technology provides new tools and means for innovation, such as big data analysis, artificial intelligence, blockchain and so on. Universities can teach students to understand and apply these emerging technologies to help them become more competitive in the innovation and entrepreneurship process. The development of digital technologies has also facilitated the emergence of innovative teaching methods, such as project-based learning and reverse classroom. These methods can better stimulate students' creativity and develop teamwork and problem-solving skills.

The development of digital technology in colleges and universities provides more possibilities and opportunities for innovation and entrepreneurship education, making education closer to reality and more adaptable to the needs of the times. The combination of digital technology and innovation and entrepreneurship education helps to cultivate innovative talents with more creativity and practical ability, and promotes the education of colleges and universities to move towards modernisation and internationalisation.

5. INTEGRATION

In order to better adapt to the development trend of the digital era, colleges and universities need to explore the deep integration of digital technology and innovation and entrepreneurship education. Firstly, colleges and universities should update their education concepts, integrate innovation and entrepreneurship education into the curriculum system, and cultivate students' innovative thinking. Secondly, through the construction of digital education platforms and laboratories, they provide students with more practical opportunities and stimulate their entrepreneurial enthusiasm. At the same time, colleges and universities should also co-operate with the industry and introduce actual cases and projects, so that students can use digital technology for innovation and entrepreneurship in practice.

5.1. Concept of Integration

The integration of digital technology and innovation and entrepreneurship education is not only an integration on the technical level, but also a change of educational philosophy. Colleges and universities should establish a student-centred and problem-oriented integration concept, provide a more personalized and practical learning environment through digital technology, and stimulate students' innovative potential.

5.2. Education Mode Innovation

Colleges and universities can break the traditional disciplinary barriers by building digital teaching platforms, integrating interdisciplinary resources, designing innovation and entrepreneurship projects, and cultivating students' cross-border thinking and teamwork skills. At the same time, through virtual reality, artificial intelligence and other technical means, they provide a more vivid and interactive teaching experience to stimulate students' interest and initiative in learning.

5.3. Practice Base Construction

Colleges and universities should strengthen cooperation with industry and build innovation and entrepreneurship practice bases to provide students with real entrepreneurial environments and opportunities. Digital technology can help colleges and universities build virtual laboratories and simulated entrepreneurship platforms to provide an all-round practical experience and cultivate students' entrepreneurial ability.

6. STRATEGIES

To promote the integration of digital technology development and innovation and entrepreneurship education, a series of strategies and approaches are needed to ensure that the education system keeps pace with the times and better fosters innovative and entrepreneurial talents adapted to the digital era. Acquiring the necessary skills and knowledge in the digital age. Below are some suggested strategies and pathways:

Develop a holistic plan for digital transformation with clear strategic goals and plans for applying digital technologies in innovation and entrepreneurship education. This requires close collaboration with school leadership and relevant educational institutions to ensure a unified direction and goal for digital development across the education system. Integrate digital technology education resources and ensure that universities have advanced digital technology education resources, including virtual labs, online learning platforms, and entrepreneurship simulation software. Integrate and update these resources to meet the changing needs of innovation and entrepreneurship.

Cultivate the teaching force, enhance teachers' digital literacy, improve teachers' digital technology level, provide teachers with relevant digital technology training, so that they can effectively use digital technology tools for innovation and entrepreneurship education, and establish a rational view of the digital; strengthen the teachers' digital teaching practice and reflection efforts, and improve their digital application ability; innovate the training mode of teachers' digital literacy, and realise the digitalisation of the rural teachers' training development, which in turn promotes the improvement of teachers' digital literacy [10]. Encourage teachers to participate in training and seminars to continuously update their knowledge in the field of digital technology and innovation and entrepreneurship.

Digital upgrading of the education system to carry out digital upgrading of the education system, including curriculum design, teaching material development, assessment and evaluation. Use digital tools such as online learning platforms and virtual laboratories to make innovation and entrepreneurship education more relevant and practical [7]. Developing digital technology-related courses, designing and launching innovation and entrepreneurship courses closely related to digital technology, covering a full range of content from entrepreneurship basics to the application of digital technology. This includes, but is not limited to, big data analysis, artificial intelligence applications, blockchain technology, digital marketing, and so on. Ensure that the course content is in sync with industry needs and technology development.

Introducing digital innovation practice projects into the curriculum so that students can apply digital technology in practice for innovation and entrepreneurship [8]. This can include co-operative projects with enterprises, practical activities in innovation labs, etc. Build digital labs and makerspaces on campus to provide students with a place to practice and innovate. These labs can be equipped with high-end digital technology equipment to enable students to apply digital technology in real projects. Establish digital technology innovation centres within universities to bring together interdisciplinary expertise and resources to provide students with more comprehensive digital technology support and guidance on innovation and entrepreneurship.

Promote interdisciplinary co-operation and encourage interdisciplinary co-operation between different disciplines to promote the integration of digital technology and innovation and entrepreneurship education. For example, computer science majors and business schools can work together to launch joint programmes on digital innovation and entrepreneurship. Promote industry-university-research co-operation, strengthen the cooperation between universities and industries, and establish a platform for industry-university-research co-operation. Through collaborative projects, students can better understand the challenges and opportunities of actual innovation and entrepreneurship, while providing industry with fresh and innovative thinking. Advocating innovation and entrepreneurship culture on campus, organising entrepreneurship lectures, innovation and entrepreneurship competitions and other activities to stimulate students' entrepreneurial interest and innovative spirit.

By adopting these strategies and approaches, colleges and universities can better promote the integration of digital technology development and innovation and entrepreneurship education, and provide students with more comprehensive and practical innovation and entrepreneurship education.

7. CHALLENGES AND OPPORTUNITIES

The convergence of digital development and innovation and entrepreneurship education involves the deep integration of the field of education with technology and digitisation, and this convergence brings challenges as well as opens up new opportunities.

The pace of technological change is fast, digital technology is developing rapidly, and technology in the field of innovation and entrepreneurship is constantly being updated. The education system needs to keep up with this change and ensure that students are exposed to the latest technologies and trends. Uneven educational resources In some areas, digital infrastructure may be inadequate, leading to an uneven distribution of digital educational resources. This prevents some students from fully benefiting from digital developments and innovative entrepreneurship education. Pressure to innovate in the education system, traditional education models may find it difficult to adapt to the pace of digital development and the needs of innovation and entrepreneurship. The education system needs to innovate, including in terms of updating teaching materials and fostering innovative thinking. Talent cultivation needs to be comprehensive, focusing only on technical training may not be able to meet the comprehensive needs of innovation and entrepreneurship. Students need to be equipped with technical skills, innovative thinking, teamwork and other qualities.

Digital technology provides more possibilities for the establishment of an innovation and entrepreneurship ecosystem. Through digital platforms, students can more easily connect with industries and enterprises and access practical opportunities. Personalised learning, using digital technology, allows for better personalised education. Educators can tailor teaching plans to students' interests, levels and learning styles to improve learning outcomes. Interdisciplinary integration, digital innovation and entrepreneurship education helps break down barriers between disciplines. Students can more easily access knowledge from different fields, leading to the development of interdisciplinary thinking. Globalisation opportunities, the digital learning environment makes it easier for students to cross over to the international stage. They can expand their international horizons by participating in international innovation projects through online platforms. With the growth of digitalisation and innovative entrepreneurship, there is an increasing demand for people with relevant skills and mindsets. Students are more likely to meet the challenges of the job market through integrated education.

In general, the integration of digital technology and innovation and entrepreneurship education faces a number of challenges, including the difficulty of technology application, the construction of teachers, and the integration of educational resources. Colleges and universities should formulate a clear development strategy, improve policy support, enhance the quality of faculty, strengthen cooperation with enterprises and research institutions, and work together to deal with various challenges in the integration process. However, this also brings great opportunities, and colleges and universities can better adapt to the educational needs of the digital era by constantly innovating educational models and expanding cooperation channels.

8. CONCLUSION

The integration of digital technology development and innovation and entrepreneurship education in colleges and universities is an inevitable trend in the development of higher education system. Through reforming educational concepts, innovating educational modes, and constructing practice bases, colleges and universities should realise the in-depth integration of digital technology and innovation and entrepreneurship education with innovative thinking and flexible mechanisms, so as to cultivate talents with more creativity and practical application ability, and students with solid entrepreneurial ability, and to become comprehensive talents with the strength to make a positive contribution to the sustainable development of the society.

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