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# Research on Innovation and Entrepreneurship Education in Colleges and Universities Led by Science and Technology Innovation

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**Abstract:** Technology is contributing to social development and change at an unprecedented rate. STI plays an important role in innovation and entrepreneurship education in universities and colleges, and innovation in entrepreneurship education can be made clearer and more effective through the use of Artificial Intelligence, Big Data, Virtual Reality, and other advanced technologies that provide new ideas, innovative approaches, and tools in entrepreneurship education. STI can help students customise their learning paths according to their characteristics and needs. At the same time, STIs provide students with a wealth of practical resources and scenario simulations in order to practise their innovation and entrepreneurship skills in a virtual environment. STI also encourages global sharing of educational resources, breaking down geographical constraints and benefiting more students. With leading technologies in the fields of innovation, entrepreneurship and education, high calibre talents are developed to meet the needs of the times.

**Keywords:** Technology-led; university innovation; Innovation and entrepreneurship research

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## 1. Literature review

Innovation and entrepreneurship education is the educational concept and practice of cultivating talents with innovative spirit and entrepreneurial ability. With the arrival of the education model combining “theory + practice”, it emphasises the comprehensive mastery of innovation and entrepreneurship theory and methods and the cultivation of innovation and entrepreneurship through practice. Science, technology and innovation education is leading the development of all elements of new productivity with its unique charm. In this ever-changing era, only through continuous innovation can we continue to meet the growing needs of the people for a better life and promote the sustained and healthy development of society and economy. In the whole process of entrepreneurship must master the relevant knowledge, concepts and tools, the previous entrepreneurial knowledge will be deepened and refined in the process of new learning practices<sup>[1]</sup>. Innovation education is about breaking out of existing frameworks, exploring uncharted territory, and creating new value. It is not only limited to inventions in the field of science and technology, but also covers the innovation and change of system, culture, management and other aspects. Innovation is the sign of the times, the driving force of development, and the source of social progress.

## 2. Science and technology innovation to lead the development of innovation and entrepreneurship education in colleges and universities SWOT analysis

### 2.1 Advantages of Science and Technology Innovation Leading the Development of Innovation and Entrepreneurship Education in Colleges and Universities

Science and technology innovation leading innovation and entrepreneurship education in colleges and universities is an inevitable trend of the progress of the times. Firstly, science and technology innovation brings such things as innovation and entrepreneurship teaching and research rooms, online course platforms, and big data analysis tools, which provide students with richer learning and practice resources and break the time and space limitations of traditional education. Secondly, new technologies themselves often stimulate students' curiosity and desire to explore, and the development of artificial intelligence, blockchain and other fields prompts students to think about problems and find solutions from new perspectives. Again, through virtual reality, simulation software and other technological means, the real entrepreneurial environment and market dynamics can be highly restored, allowing students to feel and cope with various challenges in advance. Intelligent teaching systems can personalise teaching according to students' characteristics and progress, improve the relevance and efficiency of educa-

tion, and enable students to master the knowledge and skills required for innovation and entrepreneurship more quickly. Finally, science and technology innovation promotes the communication and integration between different disciplines, and the theoretical mechanism of science and technology empowerment is to bring more innovative products and services for science and technology empowerment through the use of advanced digital technology and innovative means<sup>[2]</sup>.

## **2.2 Science and technology innovation leads the development of innovation and entrepreneurship education in colleges and universities disadvantages**

Students may focus more on the use of technological tools and relatively neglect practical aspects such as hands-on practice and in-depth market research, resulting in insufficient practical skills to cope with complex and changing realities. Excessive reliance on technology may limit students' thinking and make them think only from a technical perspective, ignoring other innovative points and possibilities. In case of technical failure or inability to obtain technical support in time, students may become helpless and lack the ability to respond flexibly to various emergencies. Focusing only on the technical aspects and not sensitive enough to market dynamics and consumer needs may easily lead to a disconnect between the project and market needs.

## **2.3 Opportunities for the Development of Innovation and Entrepreneurship Education in Colleges and Universities Led by Science and Technology Innovation**

Firstly, with the help of virtual reality, augmented reality and other technologies, an immersive learning experience is created, allowing students to carry out practical operations and simulated entrepreneurship in the virtual environment to improve the learning effect and participation. Using artificial intelligence and big data analysis, according to students' interests, abilities and learning styles, under the strong support of the party and the state, facing the severe situation of college students' graduation and employment, and stimulated and promoted by the Internet economy, college students' innovation and entrepreneurship has become the first choice of many college graduates for graduation<sup>[3]</sup>. To provide personalised learning paths and resources to meet the needs of different students, and to cultivate more innovative and practical talents. Secondly, promote the cross-fertilisation of different subject areas to stimulate students' innovative thinking and creativity. Provide more practical projects and opportunities so that students can apply their theoretical knowledge to practical projects and exercise their innovative and entrepreneurial abilities. Again, strengthen cooperation with enterprises and industries, combine scientific and technological innovations with actual needs, promote the deep integration of industry, academia and research, and provide students with more entrepreneurial opportunities and practice platforms. Finally, through the Internet and online platforms, students can communicate and co-operate with entrepreneurs, investors and experts around the world, broaden their horizons and obtain more entrepreneurial opportunities and resources.

## **2.4 Challenges in the development of innovation and entrepreneurship education in universities led by science and technology innovation**

The field of science and technology is developing rapidly, and new technologies are constantly emerging. Colleges and universities need to keep up with the pace of technological development in a timely manner and constantly update their teaching content and equipment to ensure that students can master the latest technological knowledge and skills. To carry out high-quality innovation and entrepreneurship education, teachers with rich practical experience and professional knowledge are needed. The evaluation system of innovation and entrepreneurship education in colleges and universities is not yet perfect, making it difficult to accurately assess students' innovation and entrepreneurship abilities and achievements. Colleges and universities need to establish a scientific and reasonable evaluation system to incorporate students' innovation and entrepreneurship ability into the comprehensive quality evaluation system of students, and also can inspire students' innovation and entrepreneurship enthusiasm by carrying out innovation and entrepreneurship competitions and other ways.

## **3. Science and technology innovation to lead the development of innovation and entrepreneurship education in colleges and universities path investigation**

Colleges and universities can recruit talents with rich experience in innovation and entrepreneurship or relevant industry backgrounds to fill the faculty. At the same time, experts and entrepreneurs from outside the university can be actively introduced as part-time teachers to provide students with guidance that is closer to reality. Teachers are provided with training opportunities to learn the latest innovation and entrepreneurship concepts, methods and technologies, and to improve their teaching level and guidance ability. Participation in various innovation and entrepreneurship training courses and seminars can be organised. Encourage teachers to participate in innovation and entrepreneurship practical activities, such as entrepreneurial projects and enterprise consulting, to accumulate practical experience and better guide students. Set up incentive mechanisms to encourage teachers to actively participate in innovation and entrepreneurship education work, such as teaching rewards, project results rewards, etc., to improve teachers' motivation and initiative. Establish co-operative relationships with enterprises,

and select and send teachers to work in enterprises, so as to understand the operation and needs of enterprises and provide more practical cases and experiences for teaching and guidance. Carry out international exchanges and co-operation, and select and send teachers to participate in international innovation and entrepreneurship education and training programmes, so as to learn advanced international experience and broaden their horizons. Encourage teachers to conduct self-study and research, follow the latest developments in the field of innovation and entrepreneurship, and constantly update their knowledge and skills. Provide teachers with professional development support, such as research funding and academic exchange opportunities, to promote in-depth research and development in the field of innovation and entrepreneurship education.

#### **4. Summary**

Science and technology innovation leading innovation and entrepreneurship education in colleges and universities is an important research direction in the current education field. The development of innovation and entrepreneurship education in colleges and universities has provided advanced teaching tools and resources, virtual reality, artificial intelligence, etc., which have enriched teaching means and content. It promotes interdisciplinary integration and cultivates students' innovative thinking and practical ability. It breaks the limitations of time and space and realises the sharing of global educational resources. Enhanced the efficiency and effectiveness of education and achieved personalised learning. Scientific and technological innovation has brought new opportunities and challenges for innovation and entrepreneurship education in colleges and universities, and colleges and universities should actively respond to these challenges, constantly innovate educational concepts and methods, and actively cultivate innovative and entrepreneurial talents that meet the needs of the times.

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