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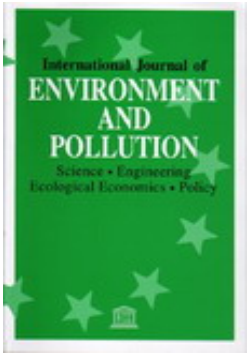

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Research on the path of integrating the concept of sustainable development into innovation and entrepreneurship education

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Research on the path of integrating the concept of sustainable development into innovation and entrepreneurship education

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Abstract: In order to improve the quality of innovation and entrepreneurship education, we should study the path of integrating the concept of sustainable development into innovation and entrepreneurship education. Under the understanding of the relationship between sustainable development and innovation and entrepreneurship education, this paper analyses the main problems of innovation and entrepreneurship education, and according to the analysis results, integrates the concept of sustainable development into innovation and entrepreneurship education, builds a brand-new innovation and entrepreneurship education system, and puts forward the innovation and entrepreneurship education path based on this. Through the experimental test, it can be seen that the highest satisfaction of the students in this study can reach 98%, and the highest efficiency of innovation and entrepreneurship education can reach 98.6%, which improves the satisfaction of students and the efficiency of innovation and entrepreneurship education.

Keywords: sustainable development; innovation and entrepreneurship education; analytic hierarchy process; index weight; relationship; satisfaction.

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1 Introduction

With the advent of the economic era, the sustainable development model has brought great challenges to China's economy, and innovation and entrepreneurship have a direct impact on the rapid economic development (Wang et al., 2022; Yu et al., 2018). Therefore, the development of higher vocational education should take the road of

innovation, and innovation and entrepreneurship education is the inevitable path of higher vocational education reform. With the continuous development of the economy, the old industry and the old mode are gradually replaced by the new industrial mode and emerging industries. Cultivating a college student with innovative consciousness, innovation and entrepreneurship ability, professional knowledge and technical content is the real purpose of the current higher vocational education reform, so as to promote the transformation of China's economic development (Ogochukwu, 2021; Zhang, 2020).

Shao and Huo (2021) studies the integration of the concept of sustainable development into innovation and entrepreneurship education and practice, analyses the problems existing in innovation and entrepreneurship education, combines the concept of sustainable development with learning theory, and studies the reform path of innovation and entrepreneurship education through case study methods according to the existing problems, and applies it to practice. Ou and Qiu (2021) studies the proper choice to promote the sustainable development of innovation and entrepreneurship education in vocational colleges, clarifies the training concept of innovation and entrepreneurship education in vocational colleges, scientifically positions the talent objectives, and modifies the talent training system; The construction of practice experience platform and education quality assurance system based on "integration of specialty and innovation" have provided support and guarantee for the sustainable and healthy development of innovation and entrepreneurship education in Higher Vocational Colleges to a wider scope, higher level and deeper level, and for further creating an integrated, collaborative and shared "innovation and entrepreneurship" ecological environment and achieving actual results (Li, 2020). Based on the perspective of innovation and entrepreneurship education concept, combined with the characteristics of Environmental Engineering Technology Specialty in higher vocational colleges, analyses and grasps the innovation and entrepreneurship education concept and the significance of integrating environmental engineering technology specialty into "innovation and entrepreneurship education", and explores the practical path and measures of environmental engineering technology specialty teaching reform. Yin (2020) studies the path of the sustainable development of innovation and entrepreneurship education in Colleges and universities in China, analyses the basic problems of innovation and entrepreneurship education in Colleges and universities in China through the lack of deep cooperation between colleges and enterprises, the imperfect innovation and entrepreneurship education system, and the enthusiasm of the government and the indifference of enterprises, and based on these problems, puts forward the implementation countermeasures for the plight of innovation and entrepreneurship education, including the implementation of the integration policy of industry and education, the reform of school enterprise cooperation mode, and the integration of discipline education.

However, the above-mentioned innovation and entrepreneurship education path reduces student satisfaction and innovation and entrepreneurship education efficiency. Therefore, this paper studies the path of integrating the concept of sustainable development into innovation and entrepreneurship education to lay a foundation for the development of innovation and entrepreneurship education. The specific research route of this paper is as follows:

1 Through understanding the connotation of sustainable development and innovation and entrepreneurship education, this paper analyses the relationship between sustainable development and innovation and entrepreneurship education.

2 According to the relationship between sustainable development and innovation and entrepreneurship education, the main problems of innovation and entrepreneurship education are analysed from four aspects: the low awareness of innovation and entrepreneurship among college students, the low professional knowledge or technology content in innovation and entrepreneurship education, the unmet needs of innovation and entrepreneurship among college students, the small number of students participating in innovation and entrepreneurship practice activities, and the low conversion rate of achievements.

3 According to the existing problems, we should integrate the concept of sustainable development into innovation and entrepreneurship education and build a brand-new innovation and entrepreneurship education system.

4 According to the construction of the innovation and entrepreneurship education system, the innovation and entrepreneurship education path is proposed, including the establishment of the mass education concept of innovation and entrepreneurship education, the implementation of "integrated and progressive innovation and entrepreneurship education throughout the academic career", and the training of innovation and entrepreneurship talents with "global vision".

2 The relationship between sustainable development and innovation and entrepreneurship education

2.1 Connotation of sustainable development

Sustainable development is a resource-saving economic growth mode, which relies on the continuous innovation of human capital to form an "innovation driven", which is the embodiment of the optimisation and upgrading of economic growth. There are both connections and differences between economic growth and sustainable development. There is a continuous line between economic growth and sustainable development, which is an internal connection step by step. Economic growth refers to the continuous growth of a country's total output level, population growth and labour output. Sustainable development includes not only changes in the total output of labour services and commodities, but also changes in social and economic structure, product quality improvement, structural adjustment, income distribution, and consumption demand structure (Liang, 2019).

2.2 Connotation of innovation and entrepreneurship education

In terms of innovation and entrepreneurship alone, they are completely different, but when we combine the two, they are interlinked. First of all, innovation is the most basic and the prerequisite for entrepreneurship. Entrepreneurship is a form of innovation through a series of processes. The success or failure of entrepreneurship will reflect the degree of innovation (Deng, 2019). Therefore, innovation and entrepreneurship are interlinked to a certain extent. Both of them are to reflect a new thing. Entrepreneurship education can not only solve the employment problem of college students, but also promote social development. It is the most specific form of innovation. Innovation

education and entrepreneurship education intersect and connect with each other. On the whole, it is an inevitable trend to combine them for research.

The core point of innovation and entrepreneurship education, which is different from traditional education, is to cultivate students' innovation and entrepreneurship ability, emphasise the unity of knowledge and practice, and combine "learning, doing and doing", which has its unique educational content and objectives. Generally speaking, the innovation and entrepreneurship education in Colleges and universities is a three-dimensional concept, which is formed and developed under the vision of school quality education. It is the educational achievement of localisation research based on learning and learning from the experience of developed countries. Innovation and entrepreneurship education in Colleges and universities is a value orientation and educational concept that deepens the understanding of higher education laws and takes improving talent quality as its mission (Bai and Jiang, 2019).

Innovation and entrepreneurship education is produced and developed under the background of social development. It not only expresses the educational concept that is consistent with the background of the times and the social situation, but also conforms to the particularity of higher vocational education (Liu, 2020). The characteristics of innovation and entrepreneurship education in higher vocational colleges are mainly shown in the following aspects:

First, innovation and entrepreneurship education in Higher Vocational Colleges emphasises innovation. At present, new requirements are put forward for the innovation ability of talents, especially for the innovation ability of front-line technology application-oriented talents. Therefore, in the process of carrying out innovation and entrepreneurship education, we should pay attention to innovation on the basis of tradition. In terms of educational content and methods, it is required to change and seek innovation, not be limited by traditional education, and cultivate talents with innovative ideas and innovative ability that meet the needs of social development.

Second, innovation and entrepreneurship education in Higher Vocational Colleges emphasises practicality. To carry out innovation and entrepreneurship education in higher vocational colleges, we should not only pay attention to the innovative guidance of consciousness, but also strengthen the practical advantages of higher vocational colleges. In the process of carrying out innovation and entrepreneurship education, we should pay attention to practical teaching and cultivate students' ability to transform conscious innovation into behavioural innovation.

Third, innovation and entrepreneurship education in Higher Vocational Colleges emphasises openness. Innovation and entrepreneurship education emphasises an innovative idea. If you want to innovate, you can't do without communication and cooperation, and you can't do without openness (Jin, 2021). Therefore, the innovation and entrepreneurship education in higher vocational colleges should strengthen the concept of open education, so that the development of education is not limited to the campus, so that education can contact the society in a wider range, so that talent training is based on social needs and based on adapting to the current situation of social development, and educatees can improve their ability to withstand tests by feeling social needs (Li and Jin, 2021).

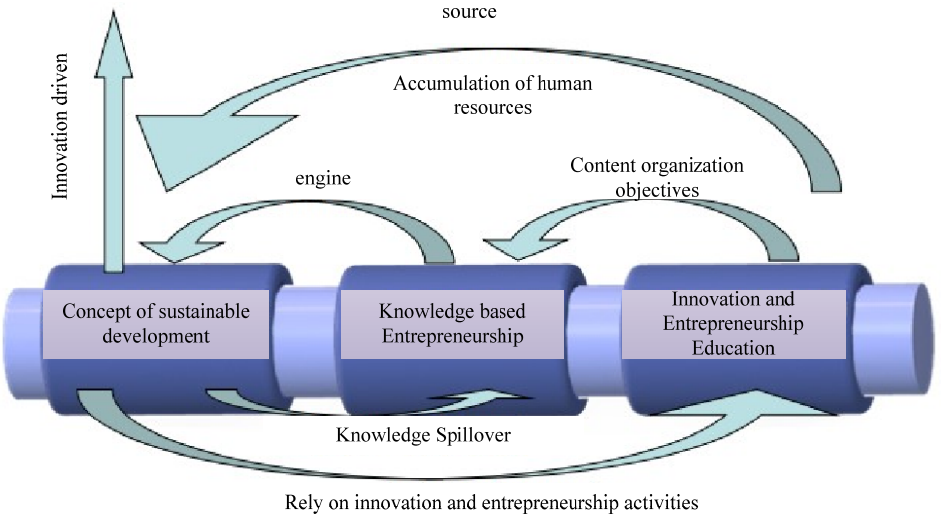
Fourth, innovation and entrepreneurship education in Higher Vocational Colleges emphasises sociality. Higher vocational education is an education that originates from the regional economy and serves the regional economy, and it has the closest relationship with society. Therefore, in carrying out innovation and entrepreneurship education, we

should fully realise that innovation and entrepreneurship education is a complex social project, which must involve the participation of the whole society, including the investment of colleges and universities in carrying out innovation and entrepreneurship education, the support of the government, and a good social atmosphere to promote its development (Zhang and Gai, 2020).

2.3 The relationship between the two

The relationship between sustainable development and innovation and entrepreneurship education is shown in Figure 1.

Figure 1 Relationship between sustainable development and innovation and entrepreneurship education (see online version for colours)

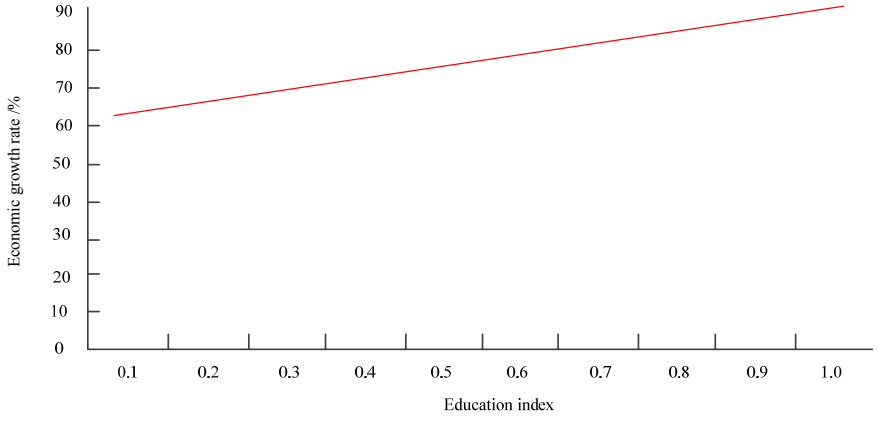


It can be seen from the graph of the relationship between sustainable development and innovation and entrepreneurship education in Figure 2 that the economic growth rate increases with the continuous enhancement of innovation and entrepreneurship education index. Sustainable development and innovation and entrepreneurship education complement each other. The main influence factor on sustainable development is innovation. Without innovation, knowledge-based Entrepreneurship cannot be carried out. Without knowledge-based entrepreneurship, there is no innovation in the economic engine (Yang, 2021). It can be seen that sustainable development and innovation and entrepreneurship education are interrelated, and innovation and entrepreneurship education is the source of sustainable development (Li, 2019).

3 Main problems in innovation and entrepreneurship education

Through the form of questionnaire survey, this paper understands the current situation of innovation and entrepreneurship education in Colleges and universities in a province, and analyses the main problems of innovation and entrepreneurship education, as follows.

Figure 2 Relationship curve (see online version for colours)



3.1 College students' awareness of innovation and entrepreneurship is not high

The consciousness of innovation and entrepreneurship refers to that people dig for ideas or things that are not involved and of great interest, show their interests and attitudes in the process, and meet people's needs for society (Chen and Wang, 2022). Innovation and entrepreneurship consciousness is a positive and enterprising form of expression, the foundation of people's creativity, and the main source of people's creative and innovative activities. Only with the awareness of innovation and entrepreneurship can we carry out innovation and entrepreneurship activities. The statistics of innovation and entrepreneurship awareness and interest of college students in a province are shown in Table 1.

Table 1 Statistics of college students' awareness and interest in innovation and entrepreneurship

Investigation content	*Number of people*	*Number of questionnaires*	*Proportion/%*
Have a relatively complete understanding of innovation and Entrepreneurship Education	132	693	19.05
Interested in various innovation and entrepreneurship activities	56	693	8.08
It is necessary and rewarding to participate in innovation and entrepreneurship activities	108	693	15.58
Understand entrepreneurship related policies	205	693	29.58
Entrepreneurship is far away from oneself	565	693	81.53
Students have independent entrepreneurial ideas	36	693	5.19
Number of students who have started their own businesses	11	693	1.59
Number of students starting businesses and driving employment	15	693	2.16

According to the data in Table 1, 19.05% of the college students have a relatively complete understanding of innovation and entrepreneurship education, 8.08% of the college students are interested in various innovation and entrepreneurship activities, 15.58% of the college students feel necessary and beneficial to participate in innovation and entrepreneurship activities, 29.58% of the College Students understand the policies related to entrepreneurship, 81.53% of the college students feel that entrepreneurship is far away from them, and 5.19% of the college students have the idea of independent entrepreneurship, 1.59% of college students started their own businesses, and 2.16% of college students started their own businesses and promoted employment. Among them, the proportion of college students who feel that entrepreneurship is far away from themselves is relatively large, and the proportion of college students who start their own businesses is the least. It shows that college students have low awareness of innovation and entrepreneurship, little interest in innovation and entrepreneurship activities, low participation, and fewer college students start entrepreneurship and promote employment (Huang and Wang, 2019).

3.2 The professional knowledge or technology content of college students' innovation and entrepreneurship education is not high

Through the survey, it is found that in the process of innovation and entrepreneurship education, college students do not have enough professional knowledge and low professional technology content. The statistics of professional knowledge or technology content of innovation and entrepreneurship activities are shown in Table 2.

Table 2 Statistical table of professional knowledge or technology content of innovation and entrepreneurship activities

Investigation content	*Number of people*	*Number of questionnaires*	*Proportion/%*
Learn about the "Challenge Cup" innovation and Entrepreneurship Competition	177	693	25.54
The entries are related to the professional knowledge learned	298	693	43.00
The entries have high technical content	278	693	40.12
The award-winning work is the work of the instructor	271	693	39.11
Access to cutting-edge knowledge	98	693	14.1

According to the data in Table 2, 25.54% of the college students know about the "Challenge Cup" innovation and entrepreneurship competition, 43.00% of the college students think that the entries are related to the professional knowledge they have learned, 40.12% of the college students think that the entries are highly technical, 39.11% of the college students think that the award-winning work is a teacher's work, and 14.1% of the college students think that innovation and entrepreneurship activities can acquire the most advanced knowledge. Among them, 43.00% of college students feel that the entries are related to the professional knowledge they have learned, and a small number of college students feel that participating in innovation and entrepreneurship activities can obtain the most advanced knowledge. It can be seen that college students' mastery of

professional knowledge in the process of innovation and entrepreneurship education is low, and the content of professional technology is insufficient.

3.3 College students' needs for innovation and entrepreneurship are not met

According to the survey in Table 3, 91.34% of college students need sufficient funds to carry out innovation and entrepreneurship activities, 92.78% of college students need to improve their knowledge structure, 81.96% of college students need family support to carry out innovation and entrepreneurship activities, 85.86% of college students need practical training and experience, and 99.57% of college students need the guidance and services of innovation and Entrepreneurship of the school, 83.84% of college students need supportive policies. Among them, the proportion of college students who need school innovation and entrepreneurship guidance and services to carry out innovation and entrepreneurship activities is the highest, followed by insufficient funds for innovation and entrepreneurship activities. It can be seen that college students' needs for innovation and entrepreneurship cannot be met by society, schools and families in the process of innovation and entrepreneurship activities.

Table 3 Statistics of innovation and entrepreneurship needs of college students

Investigation content	*Number of people*	*Number of questionnaires*	*Proportion/%*
Need sufficient funds	633	693	91.34
Need to improve knowledge structure	643	693	92.78
Need family support	568	693	81.96
Need practical training and experience	595	693	85.86
Need school innovation and entrepreneurship guidance and services	690	693	99.57
Supportive policies are needed	581	693	83.84

3.4 The number of people participating in innovation and entrepreneurship practice activities is small, and the conversion rate of achievements is low

According to the data in Table 4, 12.55% of the college students have participated in the innovation and entrepreneurship base or park, 13.28% of the college students have participated in the training and practice of the innovation and entrepreneurship Park, 3.75% of the college students have participated in the innovation or entrepreneurship activities, 1.44% of the college students have transferred or been adopted innovation and entrepreneurship projects, and 0.29% of the college students whose innovation achievements are joint docking with enterprises. Among them, only 13.28% of the students have participated in the training or practical activities of the innovation and entrepreneurship Park, and a few students have transferred or passed the innovation and Entrepreneurship Project (Yu et al., 2020). It can be seen that the number of college students participating in innovation and entrepreneurship practice activities is small and the conversion rate of achievements is low.

Table 4 Statistics of innovation and entrepreneurship practice activities and achievement transformation

Investigation content	*Number of people*	*Number of questionnaires*	*Proportion/%*
There are innovation and entrepreneurship bases or parks	87	693	12.55
Participated in the training and practice of innovation and entrepreneurship Park	92	693	13.28
Participated in innovation or entrepreneurship activities	26	693	3.75
Innovation, entrepreneurial project transfer, adoption	10	693	1.44
Joint completion of docking with enterprises	2	693	0.29

4 Integrating the concept of sustainable development into the evaluation index system of innovation and entrepreneurship education

According to the above analysis of the main problems of innovation and entrepreneurship education, build a new evaluation index system for the integration of the concept of sustainable development into innovation and entrepreneurship education, determine the impact of indicators at all levels of the integration of the concept of sustainable development into innovation and entrepreneurship education, and lay the foundation for the subsequent integration of the concept of sustainable development into the path of innovation and entrepreneurship education. The new education system is shown in Table 5.

The multi-level structure model takes the evaluation object as the target layer, divides the attributes that affect the evaluation object into multiple factors, and forms an index system with a hierarchical structure, i.e., the target layer, the criterion layer and the index layer, according to the subordinate relationship of different attributes. Then compare the relative importance of the two indicators under the same upper layer to determine the weight relative to the upper layer, and then sort out the weight of the lowest layer (index layer) relative to the highest layer (target layer), and calculate the total ranking weight. Therefore, according to the newly constructed system, the general objective, criterion level and indicator level of the indicator system are determined, and a multi-level structural model is established:

The evaluation factor set of the criterion level is:

$$u_1 = (u_{11}, u_{12}, u_{13}, u_{14}, u_{15}) \tag{1}$$

$$u_2 = (u_{21}, u_{22}, u_{23}, u_{24}, u_{25}) \tag{2}$$

$$u_3 = (u_{31}, u_{32}, u_{33}, u_{34}, u_{35}, u_{36}) \tag{3}$$

$$u_4 = (u_{41}, u_{42}, u_{43}) \tag{4}$$

$$u_5 = (u_{51}, u_{52}) \tag{5}$$

$$u_6 = (u_{61}, u_{62}, u_{63}) \tag{6}$$

$$u_7 = (u_{71}, u_{72}) \tag{7}$$

The comprehensive evaluation factor set of the target layer is:

$$U = (u_1, u_2, u_3, u_4, u_5, u_6, u_7) \tag{8}$$

After the subordinate relationship of each factor between the upper and lower levels is determined, the relative importance of the same factor set is compared by the scale method. The main scale method is shown in Table 6.

Table 5 Construction of evaluation index system for integrating the concept of sustainable development into innovation and entrepreneurship education

Target layer	*Standard layer*	*Index layer*
Innovation and entrepreneurship education system U	School u_1	School running Philosophy u_{11}
		management system u_{12}
		Policy implementation u_{13}
		financial support u_{14}
		Scientific research u_{15}
	Education teacher u_2	Teacher qualification u_{21}
		Team structure u_{22}
		Teaching ability u_{23}
		Scientific research ability u_{24}
		Training u_{25}
	Teaching courses u_3	Curriculum u_{31}
		content of courses u_{32}
		Textbook content u_{33}
		teaching method u_{34}
		reform in education u_{35}
		Assessment method u_{36}
	Practical teaching u_4	Innovation and Entrepreneurship Competition u_{41}
		Lectures on innovation and Entrepreneurship u_{42}
		Innovation and entrepreneurship training practice u_{43}
	Educational environment u_5	Innovation and entrepreneurship incubation base u_{51}
		Innovation and entrepreneurship service facilities u_{52}
	Excitation mechanism u_6	Credit setting u_{61}
		Innovation and entrepreneurship bonus u_{62}
		School enterprise cooperation job opportunities u_{63}
	Feedback mechanism u_7	Feedback demand channel u_{71}
		Evaluation mechanism u_{72}

Table 6 Main scale method

Relative importance	*Meaning*	*Explain*
1	Equally important	Both contribute equally to the goal
3	Slightly important	According to experience, *i* is slightly stronger than *j*
5	Relatively important	According to experience, *i* is more powerful than *j*
7	Very important	*i* is more powerful than *j*, and its advantages have been proved in practice
9	Absolutely important	The degree of importance can be asserted as the highest
2,4,6,8	Intermediate value of two adjacent degrees	Adopt when a compromise is needed

Set the judgement matrix coefficient as a_{ij} , and use the square root method to calculate the weight of the evaluation index of the integration of the concept of sustainable development into innovation and entrepreneurship education, whose expression is:

$$W_i = \sqrt{\prod_{j=1}^{n} a_{ij}} \tag{9}$$

5 Implementation path

According to the above calculated sustainable development concept and the evaluation index weight of innovation and entrepreneurship education, appropriate solutions are taken, as follows:

1 *Establish the public education concept of innovation and Entrepreneurship Education*

The integration of the concept of sustainable development into innovation and entrepreneurship education is not only for students with innovation and entrepreneurship intention, but also should expand the scope of education to the whole students, and pay attention to the comprehensive and in-depth combination of students' existing professional education and innovation and entrepreneurship education. According to the new requirements of innovation and entrepreneurship, it is an effective strategy to set up and select the content of innovation and entrepreneurship courses, the objectives and methods of education, and integrate them into the teaching of students' existing professional courses, which is to promote the integration of the concept of sustainable development into the development of innovation and entrepreneurship education. According to their own characteristics, higher vocational colleges offer courses in related aspects for the whole students, and incorporate innovation and entrepreneurship learning into credit management, so as to build a scientific, reasonable and systematic innovation and entrepreneurship curriculum group.

2 *Implement the innovation and entrepreneurship education of "integrated and progressive throughout academic career"*

Entrepreneurship education courses are fragmented, lack of integration, and fail to form a good connection with the talent demand of "mass entrepreneurship and innovation". The implementation of innovation and entrepreneurship education throughout students' academic career, from classroom theory teaching to the establishment of a complete cultivation model of enterprise practice, has achieved remarkable results. To realise the integration of theory and practice in the cultivation of innovative and entrepreneurial talents in Chinese colleges and Universities under sustainable development, it is necessary to integrate the original fragmented innovative and entrepreneurial education courses into systematic innovative and entrepreneurial courses in the course content, which should involve all aspects of enterprise operation, such as enterprise financing and management, risk prevention and resolution, personnel recruitment and compensation. In terms of teaching methods, we should take students' overall academic career as the time axis and grade as the time node, and implement differentiated and chain innovation and entrepreneurship education according to the changes of students' growth.

3 *Cultivate innovative and entrepreneurial talents with "global vision"*

Cultivate talents with global vision of innovation and entrepreneurship leadership, establish numerous platforms for students' knowledge theory learning and accumulation to connect with innovation and entrepreneurship practice activities, provide students with a favourable training environment and space, and strengthen international exchanges and contacts of innovation and entrepreneurship activities. Therefore, domestic colleges and universities should not stick to the digital employment rate, but should focus on the national and international development needs, take into account students' professional and personal characteristics, carry out educational reform, and give full play to the talent advantages of colleges and universities. We will strengthen cooperation in innovation and entrepreneurship projects, exchange talents and make joint efforts in scientific research, and further explore the laws of innovation and entrepreneurship. Cultivate students' awareness of the concept of "breaking through interdisciplinary" and cultivate students' Outlook on life and values to contribute to the common development of human society.

6 Application effect test and analysis

6.1 Experimental scheme

In view of the effectiveness of the path of integrating the concept of sustainable development into innovation and entrepreneurship education in the practical application, this paper selects a higher vocational education institute as the research object, designs an application effect test and analysis experiment in the form of questionnaire, and selects student satisfaction and innovation and entrepreneurship education efficiency as the experimental indicators to test and compare with the traditional methods, so as to highlight the application advantages of this study. See Table 7 for the basic information of the survey.

Table 7 Basic information of college students in a province

School	*Number of people*
Jilin University	87
Northeast Normal University	78
Jilin Agricultural University	72
Changchun University of Technology	75
Northeast Electric Power University	77
Changchun Taxation College	76
Changchun University of Traditional Chinese Medicine	70
Beihua University	78
Jilin Institute of Chemical Engineering	80
Total	693

6.2 Experimental data

Take a province as an example, there are 670 research institutions in a province, 310 research institutions in Colleges and universities, 139627 scientific and technological personnel, 45115 in Colleges and universities, 70704 research and experimental development (R & D) personnel in 2011, and 32038 in Colleges and universities. The research and experimental development (R & D) funds totalled 8913.38 million yuan, the expenditure of colleges and universities was 1666 million yuan, and the research and experimental development (R & D) projects (Topics) totalled 19356. There are 15175 colleges and universities. In the research and experimental development (R & D) output, there were 3999 patent applications in Jilin Province, 1259 in Colleges and universities, 2195 in invention patents, 841 in Colleges and universities, 1021 in patent authorisation, 707 in Colleges and universities, 56 in patent ownership transfer and licensing, 8 in Colleges and universities, 6.77 million yuan in patent ownership transfer and licensing income, 5.43 million yuan in Colleges and universities, 47363 scientific and technological papers and 27915 in Colleges and universities. From the above comparative figures, it can be seen that the relatively concentrated independent innovation resources provide conditions for the sustainable development of innovation and entrepreneurship education. Colleges and universities should constantly explore talent advantages, transform ordinary talents into innovative talents, and transform talent resource advantages into scientific and technological innovation advantages.

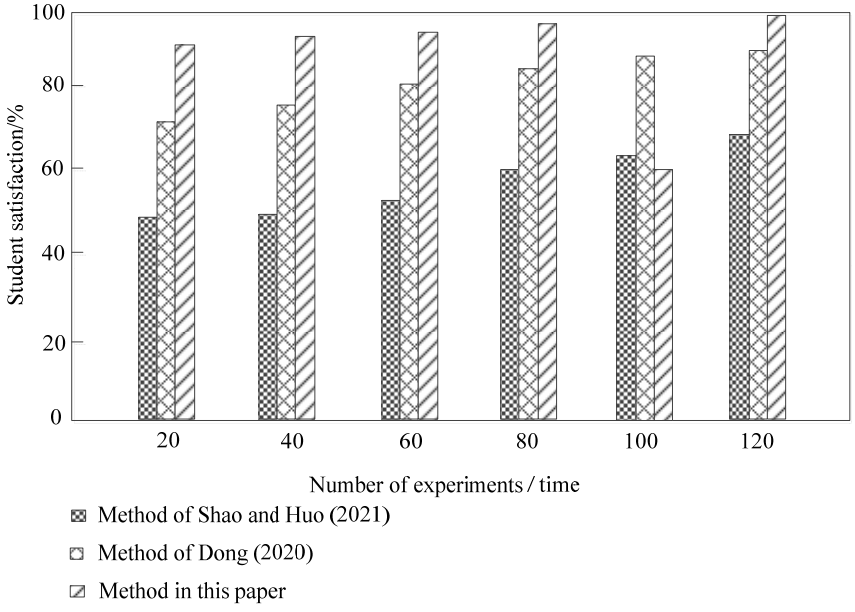
6.3 Experimental comparison results

By using the methods of this paper, Shao and Huo (2021) and Ou and Qiu (2021), the student satisfaction is compared and analysed. The comparison results are shown in Figure 3.

According to Figure 3, students' satisfaction with innovation and entrepreneurship education using this method can reach up to 98%, while students' satisfaction with innovation and entrepreneurship education using Shao and Huo (2021) method and Ou and Qiu (2021) method is only 68% and 90%. Applying the concept of sustainable

development into the path of innovation and entrepreneurship education can increase students' satisfaction, thereby improving the quality of innovation and entrepreneurship education.

Figure 3 Comparison results of student satisfaction



In order to further verify the effectiveness of this study, the methods of this paper, references Shao and Huo (2021) and references Ou and Qiu (2021) are used to compare and analyse the efficiency of innovation and entrepreneurship education. The comparison results are shown in Table 8.

Table 8 Comparison results of innovation and entrepreneurship education efficiency/%

Number of experiments/time	*Method in this paper*	*Shao and Huo (2021) method*	*Ou and Qiu (2021) method*
10	93.2	81.0	62.3
20	93.6	81.5	63.4
30	94.1	81.8	63.8
40	94.6	82.4	64.2
50	94.9	82.9	64.8
60	95.6	83.2	65.4
70	95.8	83.4	65.8
80	96.7	84.6	66.2
90	97.5	85.3	67.3
100	98.6	85.6	68.6

According to the data in Table 8, the innovation and entrepreneurship education efficiency of this method can reach 98.6%, which is higher than that of Shao and Huo (2021) method and Ou and Qiu (2021) method, indicating that the integration of the concept of sustainable development into innovation and entrepreneurship education can improve the education efficiency.

7 Conclusion

In order to improve the efficiency of innovation and entrepreneurship education and student satisfaction, the concept of sustainable development is integrated into innovation and entrepreneurship education, and a new path of innovation and entrepreneurship education is studied. By analysing the connotation of sustainable development and innovation and entrepreneurship education, we can obtain the relationship between sustainable development and innovation and entrepreneurship education, and analyse the problems existing in the current innovation and entrepreneurship education according to the relationship between them. On this basis, we can build a new evaluation index system of innovation and entrepreneurship education, and determine the impact of indicators at all levels of the integration of the concept of sustainable development into innovation and entrepreneurship education, By establishing the public education concept of innovation and entrepreneurship education, implementing "integrated and progressive innovation and entrepreneurship education throughout academic career" and cultivating innovation and entrepreneurship talents with "global vision", this paper puts forward the path of integrating the concept of sustainable development into innovation and entrepreneurship education. The experimental test shows that the application of this method to innovation and entrepreneurship education, student satisfaction up to 98%, innovation and entrepreneurship education efficiency up to 98.6%, this study of student satisfaction and innovation and entrepreneurship education efficiency are high.

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