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A Probe into the Deep Integration and the Collaborative Innovation Mechanism of Ideological and Political Elements and Innovation and Entrepreneurship Education under the Environment of AI

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Abstract: *Under the new economic development situation, the I&E of college students must be oriented by curriculum ideology and politics, making it the mainstream of the society, so as to truly achieve the ultimate goal of the country's implementation of the I&E strategy. At present, Chinese colleges and universities lack an effective collaborative innovation mechanism, this has emerged as a significant barrier to China's innovation talent growth, and I&E education in colleges and universities has been prioritized. In the context of artificial intelligence (AI) and collaborative innovation mechanisms, this paper found to investigate the importance of deeply integrating ideological & political curriculum aspects with I&E education. For the purpose of describing the benefits and drawbacks of the integration of the two in the context of AI, this study suggests a SWOT (Strengths, weaknesses, Opportunities, and Threats) analysis. On the basis of the AI Analytic Hierarchy Process (AHP) method, this article assessed the environment of the two when they are combined. The evaluation results found that the AI environment was conducive to the fusion of the two. The experimental findings in this research demonstrated that, 51% of students believed that doing so is absolutely essential when it came to the question of whether it is important to integrate the two, while 23% believed that doing so was necessary. Students who believed that integrating the two was generally necessary made up 14% of the student population, while students who believed that integrating the two was not necessary made up 6% of the student population and students who believed that integrating the two was completely unnecessary made up 6% of the student population. It was evident that most students desire to combine the two in order to advance ideological & political development as well as the development of new thinking.*

Keywords: *Innovation and Entrepreneurship, AI, Curriculum ideology and politics, Analytic Hierarchy Process*

1. Introduction

Scientific and technology advancement and development have taken the lead role in driving the international economy's expansion against a backdrop of such rapid economic growth. Every nation in the globe views scientific and technological advancement and development as a crucial means of boosting the nation's overall strength, which also quickens the advancement of science and technology. China's development history and its own system make it impossible for people to embark on the development path of relying on developed countries. Therefore, people must build an innovative country by continuously improving their scientific and technological innovation capabilities. China's economy has grown quickly since the reform and opening up, yet there is still a significant disparity when compared to the industrialized nations in the world. In order to adjust to the world economy's increasingly harsh international rivalry, China has proposed a collaborative innovation strategy. Collaborative innovation refers to the organic combination of various innovation elements in the entire innovation system, so as to achieve free circulation within the innovation system.

In contemporary China, I&E education has been regarded as an important teaching concept, and many scholars have done a lot of research on it. However, China's I&E education started late, and the

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theoretical and practical foundations are not solid. College classroom ideology and politics must also constantly enrich and explore new teaching methods and models, and constantly improve their own teaching theories and practices to improve their effectiveness, which is due to the comprehensive development of the knowledge economy and the development of society. Under the new normal of "mass entrepreneurship and innovation", both in terms of research status and development process, there are profound theoretical basis and practical resources, but there are also many restrictive factors and bottlenecks. This paper discussed the relationship between the two, which was consistent with the actual needs of the current college students' I&E education. The innovation of this paper was that it analyzed and discussed the integration of AI-based curriculum ideological & political elements and I&E education, expounded the current situation and problems of both, and conducted relevant investigations in the experiment.

2. Related Work

Classroom ideology and politics is an important part of higher education in China, and it has been crucial to the operation of colleges and universities for a long time.

Ishmukhametov E M believed that the concept of curriculum ideology and politics was very helpful to classroom teaching. In order to effectively integrate the relationship between majors and ideology and politics, he separated the classroom ideological & political part of the I&E course from different angles and incorporated it into classroom teaching [1]. Han G suggested that I&E be one of the compulsory courses in colleges and universities, but in view of today's social atmosphere, the classroom only paid attention to technical teaching and ignores ideological education, which made it difficult to keep up with the needs of the times. Therefore, it was very important to integrate ideological guidance and ideals into I&E, and to encourage students' ideological resonance and innovation initiative [2]. Luo Y believed that by expanding the ideological & political reform of college classrooms, people can carry out more in-depth classroom ideological & political teaching for students. He has carried out research and practice in improving teachers' ability, compiling moral education teaching materials, and encouraging students to innovate and start businesses [3]. To assess what students actually learn, Pepin M found that entrepreneurship education scholarships have recently been questioned, and he relied on constructing and analyzing entrepreneurial learning activities that incorporate ideology and politics [4]. Scholars believed that the combination of talent training and classroom teaching can significantly improve the effectiveness and quality of teaching, and it was also in line with contemporary educational concepts, helping to cultivate more outstanding talents for the country.

The collaborative innovation mechanism can encourage the integration of I&E with classroom ideology and politics. Wen F J found that ideology and politics were crucial in fostering entrepreneurship in China, he studied the interaction between the main current cooperation models, and took strong cooperative creativity as the basis for promoting innovation and development. He found that the collaborative innovation mechanism can support its progress [5]. Wei believed that for a long time, classroom ideology and politics have not been integrated with entrepreneurial spirit. This separation model was increasingly unsuitable to meet the needs of modern talent development. In order to maximize the benefits of collaborative innovation, it was necessary to combine educational concepts with I&E [6]. According to Thrall J H, interest in AI was high and growing rapidly, and it was widely used in classroom ideology as well as in industry and technology. The emergence of AI has changed the traditional and lifeless classroom, and it has given new life to the ideological & political and entrepreneurial spirit of the classroom [7]. Scholars have found that the AI-based collaborative innovation mechanism was more conducive to the integration of the two, and it was conducive to the cultivation of innovative talents with all-round development. The relationship between classroom ideology and I&E is inseparable.

3. Evaluation of the Integration of AI-based Curriculum Ideological & Political Elements and I&E Education

In today's fast-changing science and technology era, in an era dominated by knowledge and innovation, people are encountering new problems in the education of I&E. Although China is already a major player in the field of education, there is still a huge gap between China and the world's leading countries in this field. Especially in the case of the development of students' subjectivity and subjectivity, the healthy growth of the economy and society as well as the wealth and stability of the country are directly affected by the entrepreneurial ability [8]. The structure of I&E education is shown

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in Figure 1:

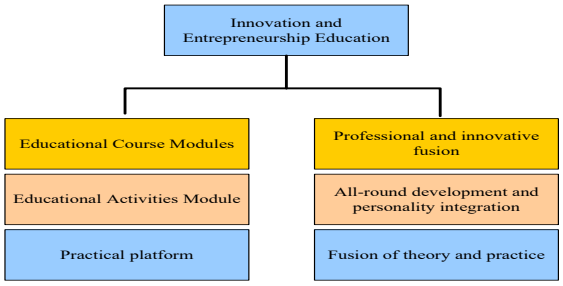

Figure 1. I&E Education Structure

Figure 1 illustrates how I&E education adapts to the changes in the business and society as well as the zeitgeist. It is a novel concept and a fresh approach to higher education in the modern day. I&E education is a significant component of the moral education discipline system in colleges and universities, both in terms of goals and substance [9].

The long-term growth of a nation's capacity for autonomous innovation requires collaborative creativity. In addition to the strong support of relevant national departments such as the Ministry of Education and the Ministry of Finance, the long-term growth of a country's independent innovation capability requires collaborative creativity, and the construction of a collaborative innovation platform requires the joint efforts of teachers and students [10-11].

3.1 Characteristics of Deep Integration Teaching Mode of AI and Ideological & Political Courses

(1) Give full play to the leading role of teachers in the teaching process

The characteristics of the teaching mode of deep integration of AI and ideological & political courses can be summarized as "dominant + subject combination", that is, teaching is equal, emphasizing the leading role of teachers, and fully reflecting the main body of students [12]. In the new century, teachers are active participants in educational reform, as well as educational designers and implementers. The deep integration of AI and ideological and political elements is shown in Figure 2:

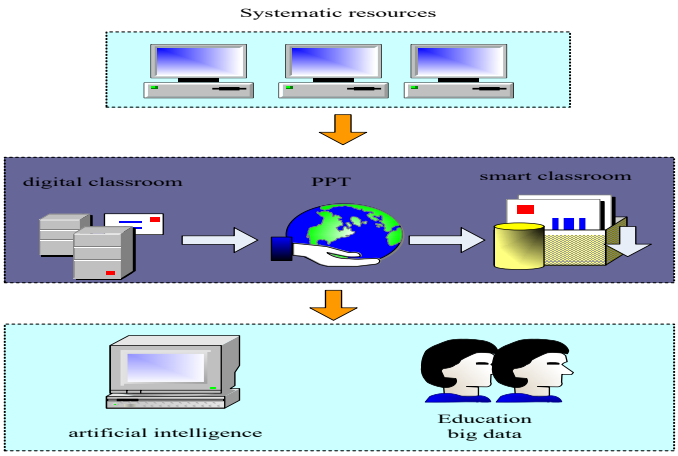

Figure 2. Deep integration of AI and ideological & political elements

As shown in Figure 2: In teaching, teachers should play the role of guidance and supervision. The responsibility of teachers should not be limited to imparting boring knowledge, but more to stimulate students' thinking. More time and effort needs to be devoted to productive, creative activities. Therefore, the role of a teacher is not only an active teacher or a transmitter of knowledge, but also to guide and supervise the whole process of teaching and student learning [13].

(2) Fully reflect the main body status of students in the learning process

The learning method of independent inquiry + cooperation is a teaching model with AI as the core. In the process of learning, it is mainly to give full play to the initiative of students, actively seek and solve problems, and develop their own abilities at the same time [14]. Students moved from passively accepting objects of knowledge to processing information, experiencing emotions, and cultivating

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emotions. According to the learning environment, goals and characteristics of AI, teachers should create an environment to encourage students to learn independently.

3.2 Evaluation of Ideological & Political Classroom and I&E Based on AI Collaborative Innovation Mechanism

The construction of collaborative innovation platform in colleges and universities is implemented in stages, and in the process of cooperation with other innovative resources, it can enable colleges and universities to enter a good model and mechanism for cultivating innovative talents [15].

Four elements were identified through a SWOT analysis: strengths, weaknesses, opportunities and threats. In order to ensure the scientificity of the evaluation, this paper adopted the method of combining qualitative and quantitative, and constructed the evaluation system using AHP. AHP is a relatively mature analytical method, and its accuracy and scientificity have been generally accepted by people.

The judgment matrix is used as the basis for determining the relative weights of factors in each layer, and the judgment matrix is constructed by comparing the standard layers a_1 to a_n with the overall target A according to a set of rules, and the judgment matrix is represented by formula 1:

$$A = \prod_{j=1}^{n} a_{ij} \left(i = 1,2,3,...,n\right) a_1 \tag{1}$$

If there are n criteria, use the sum-product method to normalize each column of the judgment matrix to obtain a new normalized judgment matrix a_{ij}, as shown in formula 2:

$$a_{ij} = \frac{a_{ij}}{\sum_{i=1}^{n} a_{ij}}, \left(j = 1,2,...,n\right) a_1 \tag{2}$$

Formula 3 can be used to determine the sum of each row in the normalized judgment matrix:

$$w_i = \sum_{i=1}^{n} a_{ij} \left(i = 1,2,...,n\right) a_1 \tag{3}$$

Only the relative weights generated by the judgment matrix of the consistency test are acceptable, otherwise the judgment matrix must be readjusted. The conformance test pass is mainly based on the conformance ratio $C \cdot R$, as shown in formula 4:

$$C \cdot R = \frac{C \cdot I}{R \cdot I} \, a_1 \tag{4}$$

Among them, $C \cdot I$ is the consistency index of single sorting, and the calculation method is formula 5:

$$C \cdot I = \frac{\lambda_{\max} - n}{R \cdot I} \, a_1 \tag{5}$$

The maximum eigenvalue $\lambda_{\max}$ of the judgment matrix and its corresponding normalized eigenphasor can be calculated according to the AHP analysis, and the square root method can be used to calculate $\lambda_{\max}$, as shown in formula 6:

$$\lambda_{\max} = \sum_{i=1}^{n} \frac{\left(AW\right)_i}{n w_i} \, a_1 \tag{6}$$

After the normalization is over, multiply the ith element of the vector AW by the component $\left(AW\right)_i$ of the judgment matrix.

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What is important is that after obtaining the relative weights generated by all the judgment matrices that meet the consistency requirements, the comprehensive weight $W^{(0)}$ of all factors related to the overall goal is further calculated, which can also become the absolute weight $w_m^{(0)}$. Formula 7 is the calculation formula:

$$W^{(0)} = w^{(2)} \times w^{(1)} = \left(w_1^{(0)}, w_2^{(0)}, ..., w_m^{(0)}\right)^T \ a_1 \tag{7}$$

Among them

$$w_t^{(0)} = \sum_{t=1}^{n} w_i^{(1)} \times w_{ti}^{(2)} \ a_1 \tag{8}$$

Finally, through SWOT analysis, it is analyzed and finally evaluated, and the elements in the problem are classified at the highest, secondary and lowest levels. The weight table of environmental evaluation for the integration of ideological & political classrooms and innovation is constructed, as shown in Table 1:

Table 1. Ideological & political classroom and innovation integration environment evaluation weight table

Level 1	Level 2	Level 3
Integrated Environmental Assessment	Opportunity O	O_1
		O_2
		O_3
		O_4
	Threat T	T_1
		T_2
		T_3
	Advantage S	S_1
		S_2
		S_3
	weakness W	W_1
		W_2

As shown in Table 1: O_1 represents the construction of an innovative country, O_2 represents the state's emphasis on the cultivation of innovative talents in colleges and universities, and O_3 represents the state's emphasis on classroom ideology and politics. O_4 represents the country's emphasis on and construction of AI collaborative innovation, the concept of talent training is T_3, the integration of scientific and technological resources is S_1, and the basis for scientific research is S_2. The elite of innovative talent training is S_3, the polarization trend of ideological & political classrooms in colleges and universities is strengthened to W_1, and the polarization trend of students' innovative ability training is strengthened to W_2.

4. Investigation of Classroom Ideological & Political Education and I&E Education

4.1 Development of I&E

The integration and application of the three forces of colleges and universities, enterprises and the government have formed the establishment of a collaborative innovation platform for colleges and

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universities. It is a powerful combination of scientific research resources that can significantly improve the scientific research capabilities of universities. In addition, through partnerships with businesses to rapidly translate scientific and technological progress into productivity, economic benefits can be increased. This paper conducts a survey on 100 students in a certain university. First, the number of innovation and entrepreneurship activities carried out by the school every week is investigated, as shown in Table 2:

Table 2. The number of weekly I&E activities

Activities per week	number of people	percentage
more than 6 times	5	5%
4-6	8	8%
2-4	12	12%
1-2	20	20%
0	55	55%

As shown in Table 2: 5 students indicated that they carried out I&E activities more than 6 times a week, accounting for 5%. 8 students indicated that they carried out I&E activities 4-6 times a week, accounting for 8%. 12 students indicated that the number of I&E activities was carried out 2-4 times a week, accounting for 12%. 20 students indicated that they carried out I&E activities 1-2 times a week, accounting for 20%. 55 students indicated that the number of I&E activities per week was 0, accounting for 55%. It can be seen that schools rarely carry out relevant activities, and do not pay attention to the development of I&E activities, and their coverage and publicity are not wide enough and need to be strengthened.

Then, the way of carrying out I&E education activities in schools was investigated, as shown in Figure 3:

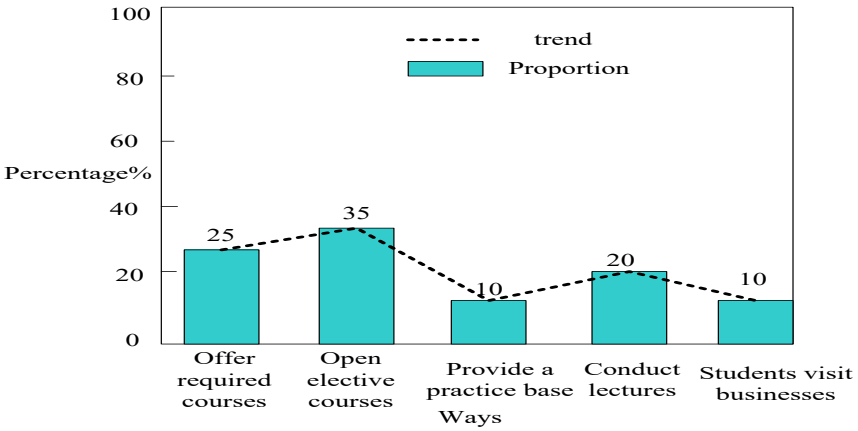

Figure 3. How school I&E education activities are carried out

As shown in Figure 3: in the way of school entrepreneurship activities, the proportion of compulsory courses was 25%, the proportion of elective courses was 35%, and the proportion of providing practice bases was 10%. The proportion of conducting relevant lectures was 20%, and the proportion of organizing students to visit enterprises was 10%, and the proportion of elective courses was the highest. Then, an investigation was conducted on which aspects schools should provide guidance and assistance to college students' I&E, as shown in Table 3:

Table 3. Ways to Provide Guidance for College Students' I&E

Ways	number of people	Proportion
systematic theoretical study	12	12%
Provide entrepreneurial support	19	19%
psychological training	10	10%
Skills Training	17	17%
financial support	42	42%

As shown in Table 3: Students hope to provide help through systematic theoretical study, entrepreneurial support, psychological training, skill training and financial support. Among them, 12% hoped to guide systematic theoretical study, and 19% hoped to provide entrepreneurial support. 10%

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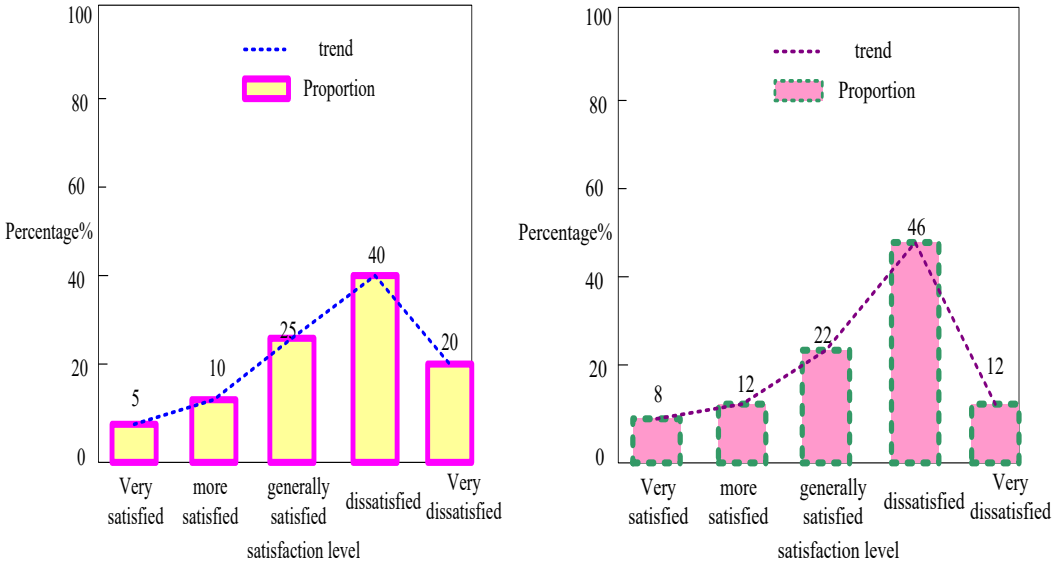
hoped to provide psychological training, 17% hoped to provide skill training, and 42% hoped to provide financial support. This showed that college students still had a great demand for entrepreneurial counseling, and it had many characteristics.

4.2 Evaluation of I&E Education and Classroom Ideology and Politics

The evaluation of ideological & political education in the classroom and I&E education in the school where the students are located is displayed in Figure 4:



(a). Evaluation of I&E education (b). Evaluation of classroom ideology and politics

Figure 4. Evaluation of I&E education and classroom ideology and politics

As can be seen from (a) in Figure 4, just 5% of students were very content with the current I&E activities, 10% were somewhat satisfied, 25% were usually satisfied, and some students believed theory and practice can be combined in school innovation and entrepreneur education to significantly enhance students' entrepreneurial skills. From this point, it can be seen that the I&E education work for college students was still very heavy, especially in terms of education methods. It can be seen from (b) that only 8% of the students were very satisfied with the current classroom ideology and politics, and 12% of the students were relatively satisfied. 22% of the students were generally satisfied, 46% were dissatisfied, and 12% were very dissatisfied.

Therefore, people should take innovative ideas as educational ideas and educational concepts to promote the connotation development of higher education, and focus on seizing opportunities and development, and gradually establish a new type of innovative talent training mechanism system. The necessity of incorporating ideological & political elements into entrepreneurship education is shown in Figure 5.

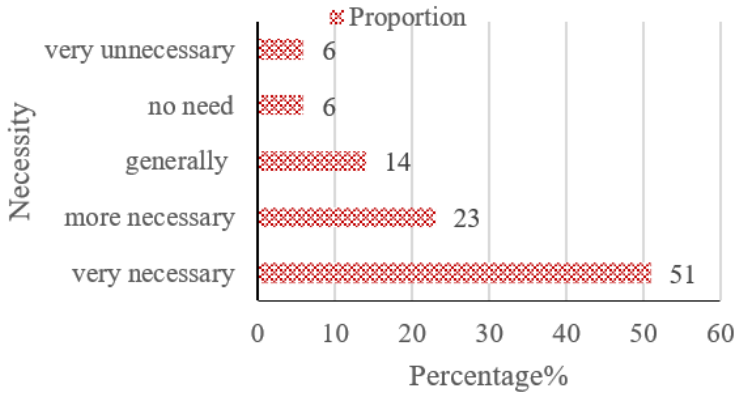


Figure 5. The necessity of incorporating ideology and politics into entrepreneurship education

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As shown in Figure 5: 51% of students feel that it is very necessary to combine classroom ideology with I&E. This proportion has accounted for a large proportion of the entire students, indicating that most of the students have realized the importance and necessity of combining ideology and politics with I&E. 23% of the students thought it is necessary to combine the two, 14% of the students thought it was generally necessary to combine the two, but 6% of the students thought it was not necessary and very unnecessary to combine the two.

Entrepreneurship education is rooted in full-time education and encourages college students to start their own businesses. Its content includes not only the improvement of cultural quality, the learning of professional knowledge, the learning of skills, but also the learning and training of personal quality, talent, creativity and so on. This paper expounded the methods to strengthen the effectiveness of college students' entrepreneurship education from the following aspects, as shown in Table 4:

Table 4. Methods to strengthen the effectiveness of entrepreneurship education for college students

ways	number of people	percentage
Teaching with artificial intelligence	63	63%
Infiltrating I&E in ideological & political	13	13%
Create an entrepreneurial culture	7	7%
Integrating ideological & political concepts into entrepreneurship	17	17%

As shown in Table 4: 63% of the students believed that AI teaching should be combined, and 13% of the students believed that the content of I&E should be infiltrated in ideology and politics. 7% of the students believed that creating an entrepreneurial culture atmosphere and 17% of the students believed that ideological & political concepts should be incorporated into entrepreneurship.

5. Conclusions

College students are the new force of I&E. It is necessary to have the quality of innovation, and the education and training mode that integrates classroom ideology and politics with I&E is to guide college students to establish appropriate entrepreneurial emotions and correct attitudes to determine appropriate entrepreneurial goals, and to promote their own entrepreneurship. Through educational practice, the understanding of the enterprise is made more solid, and it is put into practice. This study used the AHP analysis approach to examine the environment in which it is placed and conducted a thorough investigation and analysis of the issues and status quo of the integration of the two in order to determine if the integration of the two is appropriate in the AI era. It was found that the awareness of the collaborative innovation mechanism in major universities was not high enough, but the students also expected to apply AI to the integration of the two, which can stimulate their interest in learning, and finally put forward some measures for the integration of the two.

References

[1] Ishmukhametov E M, Khisaeva A I, Gaysina R R. Institutional Trends of Entrepreneurship Development in The Republic of Bashkortostan[J]. Bulletin USPTU Science education economy Series economy, 2020, 2(32):92-100.

[2] Han G, Liu R, Guan J. Exploration of Organic Chemistry Teaching under the Background of Course Ideology and Politics[J]. University Chemistry, 2019, 34(11):56-60.

[3] Luo Y. Artificial intelligence model for real-time monitoring of ideological & political teaching system[J]. Journal of Intelligent and Fuzzy Systems, 2020, 40(1):1-10.

[4] Pepin M, Audebrand L K, Tremblay M. Evolving students' conceptions about responsible entrepreneurship: a classroom experiment[J]. Journal of Small Business and Enterprise Development, 2021, 28(4):570-585.

[5] wen F J, Yang Z, Ou Y G. "Government-Industry-University-Research- Promotion" Collaborative Innovation Mechanism Construction to Promote the Development of Agricultural Machinery Technology - ScienceDirect[J]. IFAC-PapersOnLine, 2018, 51(17):552-559.

[6] Gu Xinsheng. On Collaborative Innovation Mechanism of National Defense Science and Technology Industry in China[J]. IOP Conference Series: Earth and Environmental Science, 2019, 233(4): 42035-42036.

[7] Thrall J H, Li X, Li Q. Artificial Intelligence and Machine Learning in Radiology: Opportunities, Challenges, Pitfalls, and Criteria for Success[J]. Journal of the American College of Radiology, 2018,

ISSN 2522-6398 Vol. 8, Issue 4: 271-279, DOI: 10.25236/FER.2025.080440

15(3):504-508.
[8] Sudarmo S, Rasmita R, Satria E. Investigation of best digital technological practices in millennial classroom innovation: critical review study[J]. International Journal of Social Sciences, 2021, 4(1):98-105.
[9] Hou Y. Students' emotional analysis on ideological & political teaching classes based on artificial intelligence and data mining[J]. Journal of Intelligent and Fuzzy Systems, 2020, 40(2):1-9.
[10] Kim S, Jeong Y. Exploring AI-based Teaching and Learning Activities for Software Education in Kindergarteners to the Second Graders[J]. Journal of the Korean Association of Information Education, 2020, 24(5):413-421.
[11] Adomaityt-Subaien I, Girkontait A, Petruyt D. Experiences of Social Entrepreneurship Pioneers in Lithuania[J]. Socialinė Teorija Empirija Politika ir Praktika, 2020, 21(2):8-25.
[12] Han W. Construction and innovation of new foreign language classroom teaching mode based on the "Internet Plus"[J]. IPPTA: Quarterly Journal of Indian Pulp and Paper Technical Association, 2018, 30(7):439-446.
[13] Francene, Larzelere, Lauren. Evaluation of an Entrepreneurship Education Intervention for American Indian Adolescents: Trial Design and Baseline Sample Characteristics. [J]. American Indian and Alaska native mental health research (Online), 2019, 26(3):1-20.
[14] Wu D, Shen H, Lv Z. An artificial intelligence and multimedia teaching platform based integration path of IPE and IEE in colleges and universities1[J]. Journal of Intelligent and Fuzzy Systems, 2020, 40(115):1-10.
[15] Lychuk M, Bilous N, Isaienko S. European Journal of Educational Research Smart Automated Language Teaching Through the Smart Sender Platform[J]. European Journal of Educational Research, 2021, 10(2):841-854.