Philosophical Foundations and Cultural Implications of Ideological and Political Education in Higher Education: A Marxist Perspective

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Abstract: The core goal of ideological and political education in universities is to cultivate excellent successors with communist and socialist beliefs for the society. If this goal is to be accomplished, it can be achieved with the help of classic texts of Marxist philosophy. Contemporary college students can continuously absorb the wisdom of great men from classic texts, so as to improve their ability to analyze and solve problems. Although college students at this stage often encounter difficulties in studying classic texts, they can still solve them with the help of some specific methods. Only when the education and teaching work of classic texts is actually implemented in the classroom, can college students really benefit from it. The principles and laws of ideological and political education method innovation are the basic laws of its innovative development. In general, the innovation of ideological and political education methods should follow the law of ideological and political education, the law of social development and the law of human ideological and moral development, adhere to the principle of pertinence, emphasize the principle of effectiveness, give full play to the initiative, grasp the practicality, and move towards scientific and Modern, artistic and systematic development. Starting from the value demands of individualized growth and diversified development of college students, the integration and innovation of artificial intelligence and ideological and political education. Artificial intelligence is surging, and ideological and political educators should also actively respond to the arrival of new technologies, and deeply understand the reshaping of educational forms such as education, teaching, and learning by the new generation of scientific and technological revolution, as well as the huge opportunities brought to ideological and political education and challenge. The following intelligent optimization innovation modules are specially designed around the main application scenarios to optimize the teaching team, digital teaching process, and intelligent learning process. Carry out personalized, precise, interactive, and vivid ideological and political practice teaching,

and propose specific solutions. Comprehensively promote the reform of the essential connotation, basic characteristics and implementation steps of the teaching mode of ideological and political courses, and cultivate newcomers of the era with firm belief, both ability and political integrity, and national self-confidence, self-esteem and pride.
Keywords: College Students; Ideological And Political Education; Marxist Philosophy; Philosophical Analysis

1. INTRODUCTION

The classic texts of the Marxist Philosophy series have tenacious vitality. They have been continuously improved with the times, and have successively formed a series of thoughts and theories of great men. They are the concentration and essence of the spirit of each era and the sublimation of different historical stages. In summary, it has very important educational significance for universities to cultivate high-cultivation, high-level, high-quality talents for the new era. Many scientific ideas and theories in classic texts have a great guiding and leading role in the maturity of college students' values and worldview and the formation of scientific cognition. The classic texts related to Marxist philosophy are the root of all-round research on Marxist thought. At the same time, it also provides a relevant theoretical basis for the formation of socialism with Chinese characteristics. College students should actively participate in the development and construction of socialist cause , Consciously establish a learning awareness of classic texts. Although there are many problems in college students' narration of classic texts of Marxist philosophy, there are ways to solve them and reasons to fill them. The classic texts of Marxist philosophy are precious wealth in the history of human civilization. Its scientific methods and understandings are the source of wisdom for the development of my country's socialist cause and also a guide to action. Therefore, contemporary college students should study and study Marxism more diligently. It promotes the spirit of the times of Marxism with its own actions, and constantly promotes the progress and perfection of ideological and political education in colleges and universities. However, the obscure and abstract theoretical content in classic texts often makes college students lose interest in their studies. University teachers have no way to change the specific theoretical content in classic texts in classroom teaching, but they can use relevant cases to transform the abstract However, we cannot blindly teach students. We need to combine the actual situation of our country’s development and teach students according to the road of socialist construction in our country. For example, when university

teachers explain the relationship between cognition and practice to students, they should not just talk about time can determine cognition, and at the same time cognition can have a negative effect on practice. Keep in mind the relationship between cognition and practice, but when students use this principle to analyze and solve the surviving problems, they are at a loss, and the questions are always wrong. However, if university teachers can tell students philosophical stories or cases about dialectics of cognition practice, it can not only stimulate students' interest in learning, but also let college students have a more thorough understanding of this part of the principles and theories (Chen & Wong, 2024; Yin, 2023).

In recent years, the ways and means of IPE have been continuously innovated and explored in the aspects of system construction, and promoted its sublimation and development from experience summary to application innovation (Yang et al., 2020). The principle and law of the innovation of IPE ways is the basic compliance of its innovation and development (Liu, 2020). Generally speaking, the innovation of IPE ways should follow the law of IPE, the law of social development and the law of people's ideological and moral development, adhere to the principle of pertinence, stress the principle of effectiveness, give play to the principle of initiative, grasp the principle of practicality, and develop towards scientific, modern, artistic and systematic development (Lilingling, 2020). Different from mathematics, physics and chemistry or specialized courses, the IPE has neither mathematical formula nor operational experiment, and the intangible and formless thoughts are transmitted between giving and receiving (Liu & Wang, 2021). The level of pupils' acceptance and mastery of this knowledge largely depends on the level of teachers' tuition (Jiang, 2021). Starting from the value demands of university pupils' individualized growth and diversified development, AI and IPE are integrated and innovated (Gandedkar et al., 2021). The following intelligent optimization and innovation modules are specifically designed around the main application scenarios, in order to carry out personalized, accurate, interactive and vivid ideological and political practice tuition through the optimization of teachers, digitization of tuition process and intelligence of learning process, and provide concrete solutions (Ahmad et al., 2022). The theory of deep integration of AI and IPEs is developed on the basis of computer-assisted instruction theory (Ma, 2021). In view of the advantages of AI, this article adopts the appraisal way of BPNN in AI in order to reduce the execution cost of the arithmetic. Practice has proved that this combination can not only reduce the error accuracy, but also improve the quality and efficiency of research and application optimization in IPE. With

the development of emerging information skill, it pushes human society into a new era and space, profoundly affects people's way of thinking in study, life and work, and also changes the way of tuition, from a single traditional tuition mode to a multi-dimensional, diverse, mixed and complex pattern of tuition and learning (Su et al., 2021).

The innovation of IPE under the background of AI requires a correct view of the relationship between the whole and part, change and unchanged, subject and carrier in AI and IPE (Gao, 2022). In this article, a feature reconstruction model of research and application optimization design in IPE tuition is established. The IPE tuition is systematically constructed by AI, and the appraisal of tuition quality is optimized by using BPNN to select functions.

Its innovation lies in: This article adopts the appraisal way of BPNN in AI in order to reduce the execution cost of the arithmetic. This article studies the research and application optimization design in Ideological and political education tuition. The structure is as follows: The first section is the introduction. This part mainly expounds the background and significance of research and application optimization in Ideological and political education tuition, and puts forward the research purpose, way and innovation of this article. The second section is a summary of the relevant literature, summarizes the advantages and disadvantages, and puts forward the research ideas of this article. The third section is the way part, which focuses on the research and application optimization design way in the IPE tuition combined with AI. The fourth section is the experimental analysis. In this part, experimental verification is carried out on the data set to analyze the performance of the model. Section V, conclusions and prospects. This part mainly reviews the main contents and results of the study, summarizes the research conclusions and points out the direction of further research.

2. RELATED WORK

With the surge of AI, IPE should also actively respond to the arrival of new technologies (T. Liu et al., 2021). Bai et al. Pointed out that the era of big data has put forward higher requirements for IPE educators of university pupils, which is a lasting revolution (Bai & Li, 2021). Wang Analyzed the connotation of IPE from the perspective of the new era, and thought that IPE is a comprehensive educational concept that regards moral education as the basic task of education, a systematic project, and a

new measure, new reform and new direction of talent cultivation and IPE in the new era (Wang, 2021).

Allen Becky et al. Think that curriculum IPE bears a kind of educational responsibility, shows a new way of education and tuition, and should be implemented as an educational system. It is an educational and tuition way based on all-round reform, incorporating all kinds of knowledge, consciousness, quality, personality and other guiding ideological and political elements to promote pupils' full improvement in moral education and scientific knowledge (Allen et al., 2021).

Núez and Lantada analyzed from the perspective of curriculum, and thought that we should take the joint efforts of curriculum as the axis and the creation of environment as the radius, constantly expand the radiation area of IPE, and enhance its effectiveness (Nuñez & Lantada, 2020).

Duong et al. Analyzed from the perspective of geography specialty, and thought that the lag in the construction of national conditions education, aesthetic value, rule of law education, integrating theory with practice, etc. was the main problem of curriculum ideological and political construction (Duong et al., 2019). Liu et al. Analyzed from the perspective of the inherent regulations of curriculum IPE, and thought that knowledge imparting (Liu & Ren, 2022). Gao et al. Put forward the "internet plus" thinking from the perspective of Internet to promote the IPE of curriculum. The technical foundation is based on the general Internet platform, and the emphasis is on the educational content (Guo et al., 2021).

Liu et al. Think that the socialist core values should be taken as an important breakthrough, and the construction path and institutional mechanism should be discussed by means of cultural enlightenment, classroom enlightenment, teacher demonstration and practical learning (Y. Liu et al., 2021).

3. METHODOLOGY

3.1 Using Artificial Intelligence to Construct the Teaching System of Ideological and Political Education

Focus on solving the problems of intelligence and value discovery of various elements, so that AI can truly empower educators, educational objects, resource supply, educational process, tuition appraisal and management services of IPE, and develop intelligent optimization and innovation platforms in different scenarios (Zhen et al., 2021). The overall application framework is shown in Figure 1:

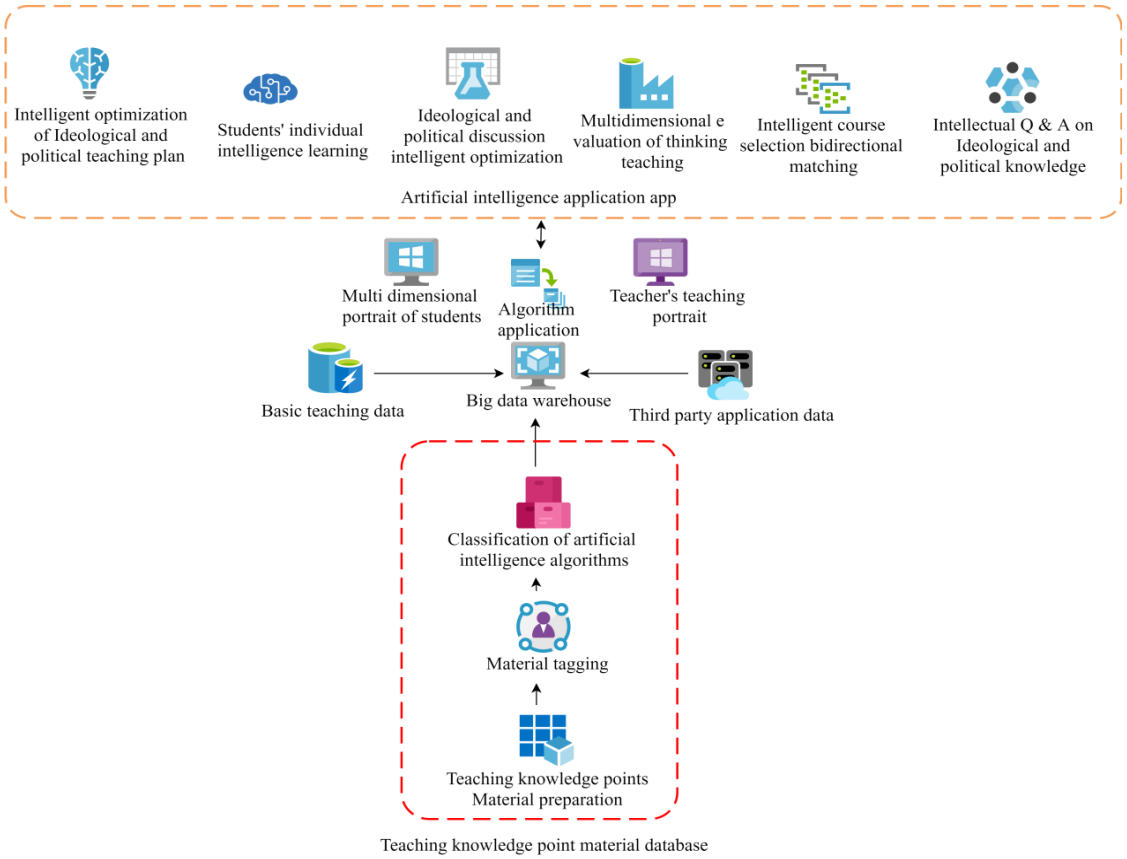

Figure 1: Application framework of AI in College Ideological and Political Education

The core ideas of constructing the above application framework include: (1) Constructing the material database of IPE and tuition knowledge. Generally, it includes three steps. (2) Build and improve the big data warehouse. The basic tuition data and the data of third-party applications needed by subsequent AI applications will be integrated into the big data warehouse, which will provide the cornerstone of data analysis and arithmetic calculation for more subsequent AI applications. (3) Develop intelligent optimization and innovation modules in different scenarios. Promote the integration of AI and IPE from value discussion to practical application. Aiming at the application scenarios of teachers' lesson preparation, intelligent learning, thought discussion, quality appraisal, etc., the arithmetic application engine provides different arithmetic models to support users' use, and all kinds of usage information data of users will also enter the big data warehouse in reverse, and participate in the subsequent arithmetic application. DM (data mining) emerges as the times require. It can not only mine the effective information in massive data (Brooks et al., 2022). The core value of big data lies in using the logical process of data itself to reveal laws, judge trends and provide solutions, so as to realize

value realization. Accelerating the implantation of big data in personnel training and building a big data tuition platform for work are not only the necessity of responding to the big data revolution, but also the need to explore the self-development path of work's collaborative education. Big data tuition platform is supported by pupil information database, user portrait system, intelligent appraisal and feedback system, which embodies the operation logic and management ideas of data collection and verification, arithmetic modeling, content supply and learning feedback. Big data builds a collaborative education platform for work with multiple functions, real-time regulation, information sharing and human-computer interaction, which not only promotes precise tuition and information management, but also optimizes, expands and upgrades the intelligent service function of work, as shown in Figure 2.

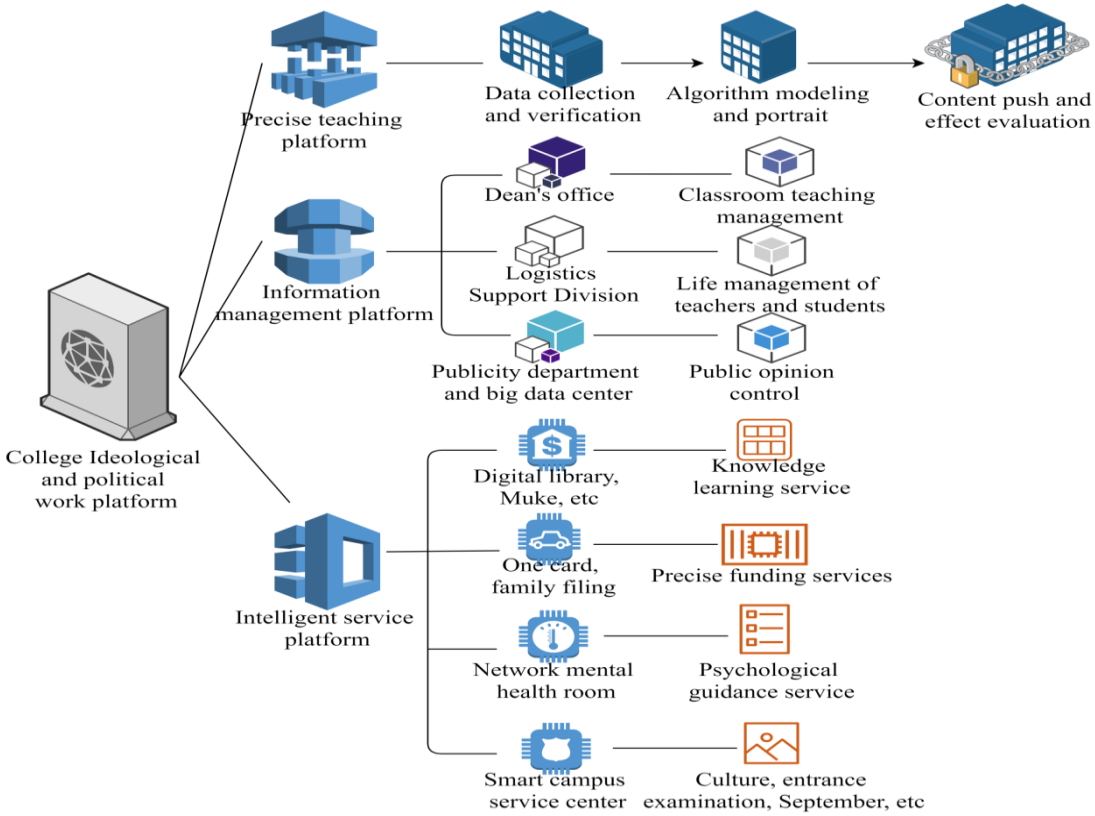

Figure 2: Big data application College Ideological and political work platform

In the era of big data, universitys and universities should tilt their work services towards the direction of intelligence, informatization and networking, so as to meet the diversified service needs of pupil groups accurately, timely and comprehensively. Big data analysis can timely and truly reflect people's spiritual needs. According to the differences in the needs of work objects, it is an inevitable requirement for universitys and universities to cooperate with other subjects and resources to upgrade the

service content of collaborative education of Ideological and political work. Colleges and universities should deepen the awareness of building an intelligent service platform for work, and provide work services through multi-channel communication, multi platform display, and multi forms to enhance pupils' sense of gain.

3.2 Optimization Design of Ideological and Political Teaching Evaluation Based on BP Neural Network

When preparing the ideological and political tuition plan, the preparation and selection of materials are time-consuming and troublesome. The intelligent optimization module based on AI can provide teachers with several intelligent choices. Such as: (1) popular recommendation. That is, in the past, all pupils made popular choices in personalized learning. Of course, there are also multi-dimensional options, such as time selection (such as popular in the past year) and grade selection. (2) Recommendation of the current class. Combined with the professional background and past learning records of the current class, more suitable material content is screened, and the matching knowledge point materials are recommended by the collaborative filtering arithmetic of AI. Teaching appraisal needs to be guided by values, which will have a corresponding impact on the relevant theory and practice of tuition appraisal. In order to give full play to the function of education appraisal, it is necessary to establish a correct value concept of tuition quality, which will play a positive role, and reflect these value factors through talent concept, quality concept and education concept. There are different distinctions between values in philosophy: dialectical materialist values, objectivist values, and subjective values. In the dialectical materialist values, it is believed that the value can be displayed through the special effect of the object on the subject, and the subject and the object can be unified to a certain extent. Only when the subjective needs and the objective things show a certain consistency can the value be displayed. The appraisal of education covers a variety of value issues, which is more complex than other aspects of appraisal. The learning process of BP arithmetic is that two parts are repeated, and the weights of each layer are adjusted. The learning and training process of the network constantly adjusts the weights of each layer. Cycle these two parts until the error of network output is within an acceptable range or the number of cycles reaches the upper limit. The error E between the network output and the expected output is as follows:

$$E = \frac{1}{2}(d-o)^2 = \frac{1}{2}\sum_{k=1}^{1}(d_k - o_k)^2 \quad (1)$$

The formula of error E in the hidden layer is as follows:

$$E = \frac{1}{2}\sum_{k=1}^{1}\left[d_k - f\left(\sum_{j=0}^{m} w_{jk} y_j\right)\right]^2 \quad (2)$$

The error E is expanded to the output layer as follows:

$$E = \frac{1}{2}\sum_{k=1}^{1}\left\{d_k - f\left[\sum_{j=0}^{m} w_{jk} f\left(\sum_{i=0}^{n} v_{ij} x_i\right)\right]\right\}^2 \quad (3)$$

Using the gradient descent way, the weights are continuously adjusted as follows.

$$\Delta w_{jk} = -\eta \frac{\partial E}{\partial w_{jk}} \; j = 0,1,\ldots,m; k = 1,2,\ldots,l \quad (4)$$

$$\Delta v_{jk} = -\eta \frac{\partial E}{\partial v_{jk}} \; i = 0,1,\ldots,n; \; j = 1,2,\ldots,m \quad (5)$$

After repeated cycles, the value adjustment function of the weight of the BP learning arithmetic is:

$$\Delta w_{jk} = \eta \delta_k^o y_j = \eta (d_k - o_k) o_k (1 - o_k) y_j \quad (6)$$

$$\Delta v_{jk} = \eta \delta_j^y x_i = \eta \left(\sum_{k=1}^{1} \sigma_k^o w_{jk}\right) y_j (1 - y_j) x_i \quad (7)$$

The normalization formula of input data is as follows:

$$P = \frac{I - I_{\min}}{I_{\max} - I_{\min}} \quad (8)$$

The arithmetic programming steps of the BPNN of the pupil appraisal subsystem are as follows:

(1) Initialize: The weight matrix of the input layer node and the hidden layer node is *V*, and the weight matrix of the hidden layer node and the output layer node is *W*. Random initial values are respectively assigned to the two weight matrices, *p* is the iterative sample pattern counter, which is set to 1, *q* is the training number counter, which is set to 1, E is the error, which is set to 0, η is the learning rate, which is set to 0.001, and E_{min} is the accuracy achieved after network training, which is set to a positive decimal.

(2) Input training samples: The vector *X, d* is assigned with the current sample *Xp, dp*.

(3) Calculate network output error: The number of training samples is P, and the BP network has different errors E_p for different samples. The total error of the network can be represented by the largest E_{max} or the root mean square $E_{rms} = \sqrt{\frac{1}{p}\sum_{p-1}^{p} E_p}$ of the error. In this article, the mean square is used as the total error E.

(4) Calculate error signal of each layer: Calculate δ_k^o, δ_j^y using equation (9) and equation (10)

$$\delta_k^o = (d_k - o_k)o_k(1-o_k) \tag{9}$$

$$\delta_j^y = \left[\sum_{k=1}^{1}(d_k - o_k)f^{'}(net_k)w_{jk}\right]f^{'}(net_j) = \left(\sum_{k=1}^{1}\delta_k^o w_{jk}\right)y_j(1-y_j) \tag{10}$$

The design of BP artificial neural network includes many aspects, which is a comprehensive problem. The following aspects should be considered in the design: network structure, complexity of the problem and sample size. In the design of tuition appraisal based on BPNN, the determination of the number of network layers, the selection of the initial value, the number of neurons in each layer, the learning rate, the expected error and the activation function of the network must be considered.

4. RESULT ANALYSIS AND DISCUSSION

In the new era, the reform and innovation of IPE should adhere to the fundamental task of "cultivating people by virtue", focus on improving talents' training ability, adhere to the combination of integrity and innovation, simplification and expansion, and information and management, and promote path innovation on the basis of scientific understanding of pupils' growth needs. Such as exploring innovation-driven growth points from the dimensions of digital drive, network drive and intelligent drive, and strive to achieve the integration and development between tradition and modernity, virtual and reality, skill and society, so as to realize accurate political thinking and intelligent thinking. Promote the coordinated development of IPE and IPE courses, establish a three-level linkage guarantee mechanism of the state, schools and universitys, provide complete organizational guarantee and institutional guarantee, and build a pattern of "great IPE" from point to point. For a long time, many institutions and scholars have carried out a lot of research work on how to track the tuition situation of teachers, how to accurately evaluate pupils' mastery and understanding of different knowledge points in the tuition process, and how to horizontally compare and evaluate the tuition effect of different teachers on the same knowledge point in the same course. Generally speaking, the basic data of these research and analysis, investigation and statistics mainly rely on spot check, questionnaire survey, classroom observation by teachers or tuition supervisors, subjective grading, etc. These ways are simple and effective, but they are also random and subjective, and the statistical process is tedious and time-consuming.

For the appraisal of the tuition quality of teachers, the main focus is on teachers' language expression ability, proficiency in knowledge points, ability to communicate and interact with pupils, courseware production level and teachers' style and appearance on the platform. In the appraisal system of IPE quality, the way of collecting input data and information adopts the way of pupils' online appraisal. The above-mentioned indicators are input into the classroom tuition quality appraisal system, and then the educational administration department classifies the types of courses, and then organizes pupils to evaluate each teacher in order. In the process of appraisal, each pupil's appraisal is required to be conducted independently. At the same time, besides appraisal, pupils can also input their own opinions or opinions for a teacher. After 15 times of training, the error of the network meets the requirements. The error curve of the network is shown in Figure 3. Trainlm is selected as the learning arithmetic.

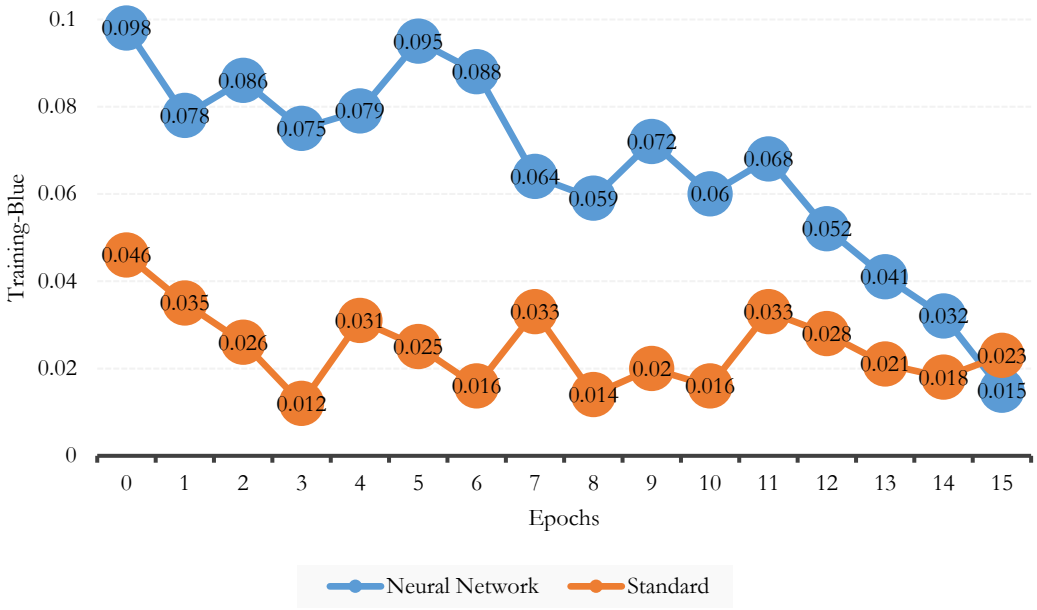

Figure 3: Training results (Function: trainlm)

The advantage of this training function is that it converges quickly. Optimization by using functions is mainly for the validity test of the system. The higher the coincidence degree, the better the construction effect of the system. Content validity, criterion validity and structural validity are three types of validity. Content validity is to test the content of the whole system to see if it meets the content to be examined. This subjective factor has great influence. Validity is whether the measured data is consistent with the standard variables or standard data prepared for implementation, and whether it is within a certain error range. Structural validity refers to whether the structure obtained by the experiment conforms to the theory,

and the degree of consistency between the structure and the theory. The error curve of the network at this time is shown in Figure 4.

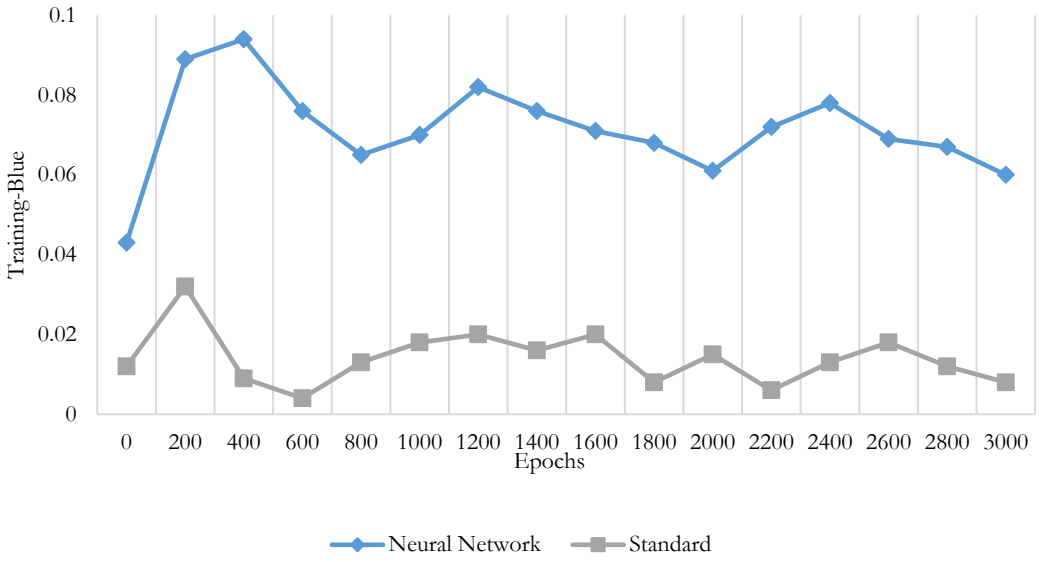

Figure 4: Training results (Function: traingd)

The learning arithmetic of this function is gradient descending momentum way, and the learning speed is adaptive in the training process. After 2000 times of training, the error target of the network is still not met, and the training curve of the network is shown in Figure 5.

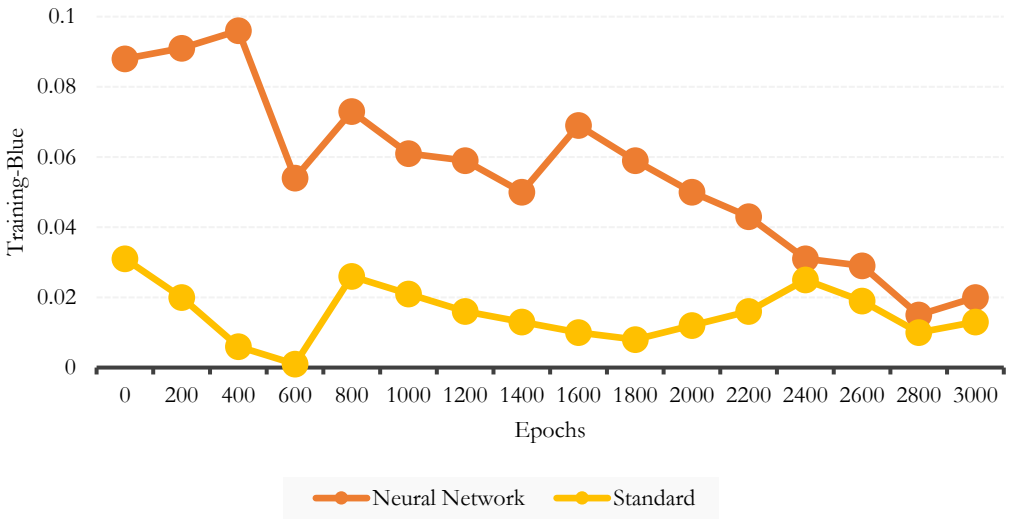

Figure 5: Training results (Function: traingdx)

BPNN is a multi-layer feedforward network. The basic principle used for comprehensive appraisal is to take the information used to describe the characteristics of the appraisal object as the input vector of the neural network, take the value representing the corresponding comprehensive

appraisal as the output of the neural network, and then train the network with enough samples, so that different input vectors can get different output values. The trained neural network can be used as an effective tool combining qualitative and quantitative methods to make a comprehensive appraisal of the object system outside the sample mode. In fact, the tuition content of the school is relatively large, and the scope of work involved is also relatively wide. It is not easy to make a reasonable appraisal of the teachers. Therefore, the appraisal should stick to the core link. In real life, because the quality of tuition involves many factors, its appraisal results are often relatively comprehensive. Generally, tuition appraisal is to put forward an overall appraisal index for a certain appraisal object, then divide the overall appraisal index into multiple first-level appraisal indexes, and then subdivide the first-level appraisal indexes into second-level appraisal indexes. According to the above steps, the system carries out simulation training experiments in MATLAB neural network toolbox, and the appraisal results after network training and those of experts are shown in Figure 6.

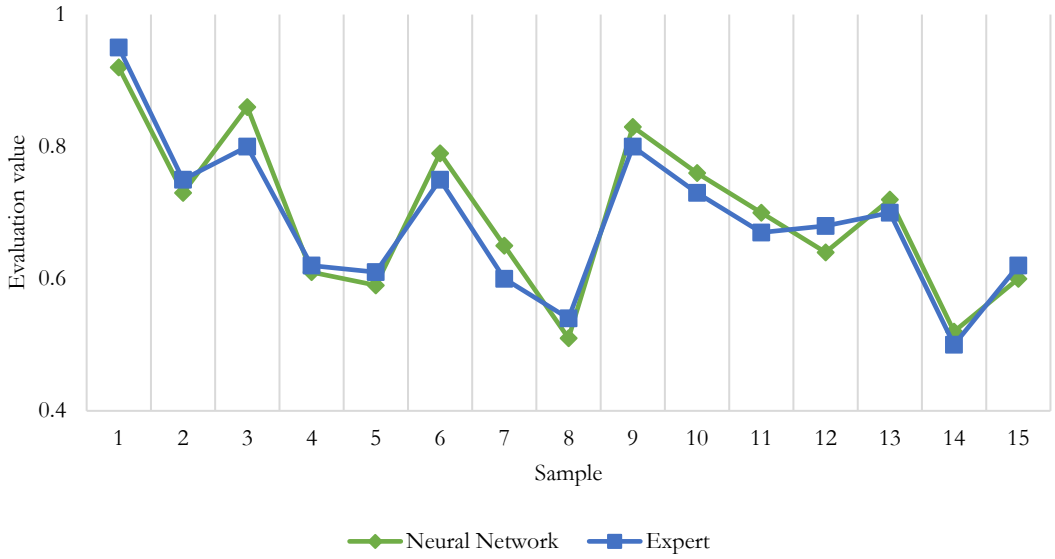

Figure 6: Comparison between expert appraisal results and neural network appraisal results

Classroom tuition is still the main channel to implement education, and its quality largely reflects and determines the quality of education. Therefore, improving the quality of classroom tuition has become the top priority. In the tuition quality appraisal, teachers' tuition work is identified or graded, so that the tuition management department can better understand the tuition quality and level of teachers, which can be used as one of the important bases for teachers' promotion, appraisal and use.

Classroom tuition includes many factors, such as tuition conditions, course difficulty, teachers' tuition and learning effect, which interact with each other to form a tuition network. In order to verify the accuracy of the appraisal results of the model, the 30 groups of test data mentioned above are input into the trained neural network. The results obtained through experimental analysis are shown in Fig. 7.

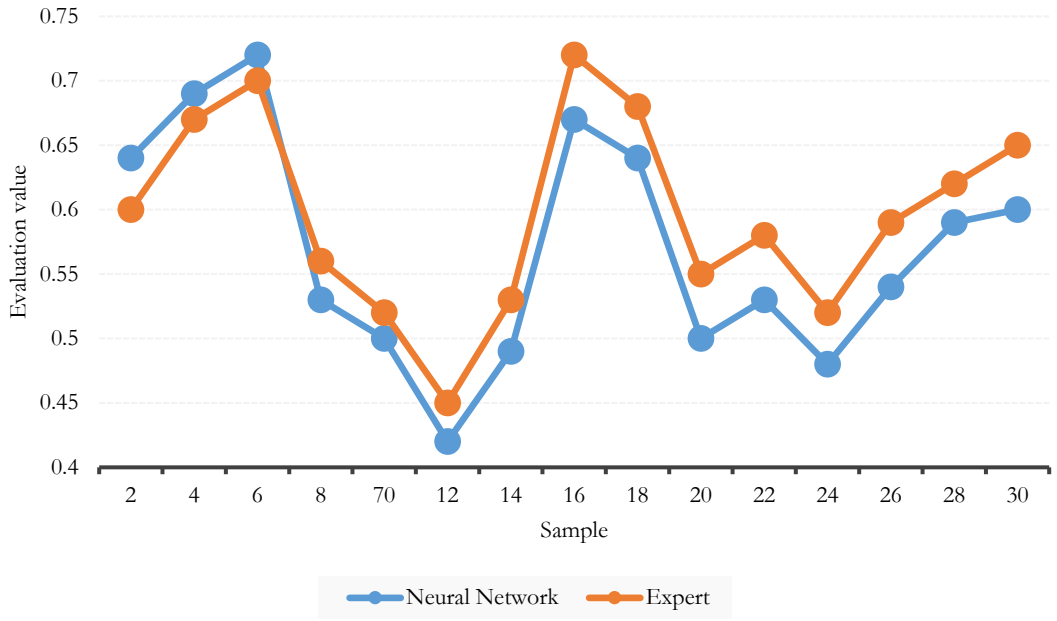

Figure 7: Comparison between simulation appraisal results and expert appraisal results

By comparing fig. 6 with fig. 7, not only is the training and prediction accuracy completely within the acceptable range, but also the error of the test sample is very close to that of the test sample. At present, the appraisal of tuition quality generally takes the form of manual scoring, which inevitably leads to certain subjectivity. In particular, teachers mainly undertake the tuition mission of cultivating and leading values, and it is obviously not comprehensive enough to evaluate their tuition quality with a single score. Therefore, rational scoring can be supplemented by some perceptual multi-dimensional label appraisal, which is helpful to use the intelligent skill of data analysis to form a multi-dimensional portrait of teachers' tuition. For example, during the epidemic prevention and control period, the live webcast lectures adopted by major universities can be based on manual scoring.

5. CONCLUSIONS

In this article, an optimization design scheme of research and application

of AI in IPE tuition is put forward. The overall system of IPE tuition is constructed by AI skill, and then the appraisal of teachers' tuition quality is optimized by using BPNN to realize the optimization of IPE tuition. Simulation results show that this arithmetic has a certain accuracy, which is 8.69% higher than the traditional arithmetic. This result fully shows that the established neural network can not only meet the requirement of error accuracy, but also train quickly with little error, so it is completely feasible to use neural network in tuition quality appraisal, and it does provide a convenient and practical tool for tuition quality appraisal. On political and moral issues, AI can't make choices like human consciousness, but turns them into technical problems to solve. AI itself doesn't contain a position, but the machine may actually make different technical choices for the same thing because of the manufacturer's political concept and moral level.

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