Simulation of Ideology Dynamic Early Warning Tutoring System Based on Intelligent CAD and DA-BP Algorithm

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Abstract. This paper presents a novel tutoring system designed for early warning of ideological dynamics, leveraging Intelligent Computer-Aided Design (CAD) and the Dynamic Adjustment Backpropagation (DA-BP) algorithm. The system aims to provide educators and students with real-time insights into ideological shifts, enhancing critical thinking and awareness in educational settings. By integrating Intelligent CAD, the system facilitates the creation of interactive learning materials and simulations, making complex ideological concepts more accessible. The DA-BP algorithm dynamically adjusts its learning parameters based on incoming data, improving the accuracy and responsiveness of ideological trend analysis. The architecture consists of a user-friendly interface, a robust data collection module, and an analytical engine synthesizing information from diverse sources such as social media, surveys, and academic literature. Preliminary testing demonstrates the system's potential to foster informed discussions and preemptively address ideological challenges. This work underscores the importance of technology in education, particularly in navigating the complexities of ideological discourse in contemporary society.

Keywords: DA-BP algorithm; Intelligent CAD; Ideology; Dynamic early warning; Tutoring system
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1   INTRODUCTION

The research on ideological education began in the late 1990s, but it has only been more than ten years now. The research on early warning mechanisms of ideological education for college students is an important part of ideological education research, and its continuous improvement is a beneficial improvement and strengthening of ideological education in the times [1]. Whether the education function can play an effective role or not, crisis early warning is an extremely important link. Ideology guides the correct ideological orientation for the early-warning mechanism of

student management. The early-warning mechanism of student management in colleges and universities is mainly to warn and supervise students' behavior, which usually shows obvious compulsory characteristics. Students will inevitably feel that their dominant position has been violated and then gradually produce a lot of boredom and resistance [2]. However, the integration of ideology in the process of implementing the early warning mechanism of student management has changed the previous mandatory working ideas. Through enlightening education and incentive measures, students are guided to have a sense of identity with the early warning mechanism and gradually accept it, which is conducive to students' self-management awareness and ability [3]. Early-warning mechanism of college students' management is an important carrier of current ideological education. By giving full play to its ideological function, it can better guide college students' ideological values and political beliefs.

Establishing a dynamic early warning system of ideological education for college students fully embodies the principle of being "people-oriented." It is an essential embodiment of implementing the scientific development concept. The early warning mechanism of college students' ideological education can prevent ideological distortion and correct the ideological deviation of the educated object by understanding the ideological trends and psychological needs of college students. All these ways and means reflect the humanistic care of colleges and universities for the educated object and fully respect the subjective status of the educated object [4]. Because of the particularity of the subject, the audience of ideological education in colleges and universities tends to be adults and has a specific ideological basis and behavioral patterns, so there are bound to be some difficulties in the process of implementing ideological education [5]. The establishment and effective implementation of the early warning mechanism of ideological education for college students can deeply understand the dynamic changes in college students' thoughts, timely and accurately discover the potential problems of college students in their thoughts, lives, hearts, and other aspects, and take feasible measures to eliminate them in the bud. This not only ensures students' physical and mental health but also establishes an excellent campus environment and contributes to the construction of a harmonious campus [6]. Psychological early warning is committed to the formation, prediction, and intervention of a psychological crisis before it breaks out, and it is an advanced intervention mechanism, the early warning index system is a very important part of the psychological early warning system [7]. On the basis of a deep understanding of the psychological crisis, colleges and universities should build an ideological dynamic early warning system with a dynamic monitoring function as the main function, pay attention to the trend of college students, discover and identify potential or actual psychological crisis factors in time, send out crisis warning and take corresponding preventive measures to effectively prevent the occurrence of college students' psychological crisis [8]. By exerting the ideological education function of college students' management early-warning mechanism, it can form effective problem early-warning and intervention for college students who are in the learning and growth stage, help them solve problems from the perspective of students, provide them with humanistic care, promote students' continuous self-pursuit and self-worth, and broaden their space for growth and healthy development [9]. Therefore, it is of practical significance to deeply study the ideological education function of the early warning mechanism of college student management. At present, there are some problems in ideological work in colleges and universities, such as lagging information feedback, imperfect early warning and intervention mechanisms, weak risk management and control ability, etc. In this paper, an ideological dynamic early warning system based on the DA-BP algorithm is developed. The DA and BP algorithms are introduced and integrated into the early warning classifier to establish an ideological dynamic early warning model, and the effectiveness of the model is simulated and verified in a Matlab environment, which better solves problems such as the imbalance of actual effectiveness and the lag of information feedback in the process of dynamic early warning of college ideology under the multidimensional application background. It has the advantages of accurate dynamic early warning, strong generalization early warning ability, and high efficiency of risk management and control trend prediction.

This paper discusses and analyzes the ideological dynamic early warning system based on the DA-BP algorithm and simulates the system. The work and innovations of this paper are as follows:

(1) Innovation of research perspective. In this paper, the DA-BP algorithm is combined with the ideological dynamic early warning system, and the early warning mechanism is successfully applied to the ideological education, which is an innovation of the current ideological education of college students. It makes up for the deficiency of the traditional theory of the dynamic early warning system and focuses the research on ideological education mechanisms on the specific group of college students, which makes up for the deficiency in that previous related research was mostly limited to the universal level. It promotes the multi-disciplinary research of ideology.

(2) Research content: The definition of dynamic early warning mechanism of ideological education and other related connotations. At present, the academic circles lack a complete and unified definition of acceptance, the dynamic early warning mechanism of ideological education and other related concepts, and the previous academic circles' research on it is rather scattered. This paper further combs and defines it based on the viewpoints of previous studies that are representative. There is also a lack of in-depth analysis of the current situation and existing problems of the mechanism.

2 RELATED WORK

The purpose of establishing the early warning mechanism of ideological education is to prevent and correct extreme thoughts, eliminate crises, and promote students' all-round development. In a certain sense, the establishment of an early warning mechanism is also an integral part of crisis management. The research on campus crisis management has been a long process, and many scholars have achieved fruitful research results during this period. Wei Qi, Liu Xue, and others think that the ideological education of college students is in a new environment where opportunities and challenges coexist. It has brought more convenient access to information for college students, and at the same time, it has made college students face the influence of multi-network culture. The construction of a dynamic early warning mechanism can improve the ideological education mechanism of college students and carry out targeted ideological education for college students, which is conducive to further improving the ideological quality of college students [10]. Liu Ce et al. put forward the application of an early-warning mechanism in the field of education. With the development of social material civilization and spiritual civilization and the gradual enrichment and perfection of early-warning theory, the fields of education and teaching also use the successful experience of early-warning mechanism in other fields for reference and incorporate early-warning mechanism into the theoretical system construction of education and teaching construction. It provides another perspective for the development of ideological education [11]. Chen Wei al. analyzed the theoretical basis of establishing the early-warning mechanism of education quality in colleges and universities and summarized the early-warning mechanism of education quality in colleges and universities from the aspects of function, function, principle, composition, and operation [12]. Taking the actual problems faced by colleges and universities at present as the starting point, Liu Zhijie expounded on the necessity of building an early-warning mechanism for ideological education and put forward his own opinions on how to build an early-warning mechanism for ideological education in colleges and universities. He believed that based on the characteristics and functions of early-warning mechanisms in academics, colleges and universities should strive to build an information mechanism for ideological education and a quick solution mechanism for ideological education [13]. Sheng Li mainly analyzes the three components of the early warning mechanism in colleges and universities and thinks that the early warning mechanism in colleges and universities includes the information collection mechanism, the analysis mechanism, and the communication and feedback mechanism of ideological education [14]. Goldoni et al. put forward their views on the ideological education mechanism, which includes two meanings: First, the ideological education mechanism is the way in which all elements in the ideological education system are interrelated, interacted, and mutually restricted. The mechanism of ideological education refers to the mechanism and operation mode formed by the various

elements in the operation process of ideological education according to a certain combination mode [15]. Biglaiser G. et al. pointed out that the ideological education mechanism refers to the relatively stable relationship formed by the interaction of various elements of the ideological education system on the basis of following a certain mechanism and its internal operation process and mode. The innovation path of the ideological education mechanism mainly includes enhancing the joint force of ideological education, perfecting the management laws and regulations, and perfecting the ideological education system [16]. Lin believes that the mechanism of ideological education refers to the effective connection of internal factors in solving the special contradictions in the process of ideological education. The basic mechanisms of ideological education include persuasion, motivation, adjustment, and communication. It's a way of correlation and interaction between various elements in a larger system, including an ideological education system and various elements of ideological education [17].

3 METHODOLOGY

3.1 On the Early Warning Mechanism of the Ideological Education Crisis in Colleges

Ideology is an important part of higher education, which runs through the whole process of higher education and teaching. It is an important institutional carrier for colleges and universities to train builders and successors. It plays a fundamental role in strengthening the value guidance of college students, strengthening the propaganda and education of patriotic dedication, and establishing an all-round education mechanism for all staff in the whole process. The ideology of colleges and universities involves a wide range of subjects with diverse audiences and has not formed a unified standard model. It is a complex system of engineering, so it must be analyzed using systematic methods. It is the only way to realize the overall coordinated control of colleges and universities ideology by drawing lessons from the collaborative theory, building a collaborative platform, perfecting the collaborative mechanism, creating a collaborative culture, and establishing a dynamic early warning model [18]. Ideological education cultivates students' humanistic qualities and promotes their all-around and balanced development. Ideological education is an independent education based on people-oriented and students' self-management, which helps students improve their ideological, moral quality, and humanistic qualities. Not only are their professional skills excellent, but their professional ethics and ideological morality also contribute to improving students' competitiveness [19]. Management is only an auxiliary means. Therefore, the early warning mechanism in colleges and universities should take service as the core, supplemented by management, and give students enough room for growth so that students can develop freely and comprehensively. Establish an early warning system and give play to the hidden function of education. Schools can invest money to establish a network early warning system, grasp students' psychological trends in time, and deal with them in time. In a subtle way, they can change students' psychological state so that students can spend their college life with a cheerful and positive attitude and develop strong psychology to cope with all kinds of difficulties in the future society [20].

Dynamic early warning is an automatic early warning based on the development of science and technology. With the popularization and development of the Internet, computers and mobile phones have become indispensable learning and entertainment tools in college life. College students spend a lot of time on the Internet for entertainment, communication, shopping, etc., after studying. Their activities on the Internet will produce a lot of information that reflects their personality and real-time psychological state. We can analyze individuals according to this information. This mainly involves three issues: information collection, big data analysis, and the establishment and improvement of the psychological crisis model. Collect students' ideological education and management early warning information. Whether the education function can play an effective role or not, crisis early warning is an extremely important link. Ideology guides the correct ideological orientation for the early-warning mechanism of student management. The early-warning mechanism of student management in colleges and universities is mainly to warn and supervise students' behavior, which usually shows obvious compulsory characteristics.

Students will inevitably feel that their dominant position has been violated and then gradually produce a lot of boredom and resistance. Schools should pay more attention to students' ideological education, take full control of students' ideological laws, ensure the balance with the current development, ensure that every educational work can get practical results, and transmit information to decision-making departments. Studying college students' psychological crises, strengthening the management of college students' psychological crises, and establishing a scientific, systematic, and operable early warning mechanism are of great significance for preventing the occurrence of college students' psychological crises, cultivating college students' crisis consciousness, grasping the opportunity of mental growth, successfully completing the socialization process and realizing the educational goal.

3.2 For the Implementation of DA-BP Algorithm

Distributed algorithm ("DA" for short) is a meta-heuristic optimization algorithm that imitates the behaviors of dragonflies, such as avoiding enemies and foraging, and seeks the best position of dragonflies globally and locally. DA algorithm has good global and local searching ability and can help the BP neural network optimize globally. It is a new optimization algorithm. We can roughly divide the behavior of dragonflies into five behaviors: separation, alignment, cohesion, foraging, and avoiding enemies. In the dynamic group behavior, dragonflies converge and integrate into a large group and fly in a unified direction, which is beneficial to the local development of the algorithm. Dragonflies update their current position by separating and gathering. In addition, the basic idea of the algorithm is that dragonflies will first judge whether there are other dragonflies in their own domain; if there are, they will update their position by their behavior and inertia; if not, they will update their position by a random walk. The flow diagram of this algorithm is shown in Figure 1.
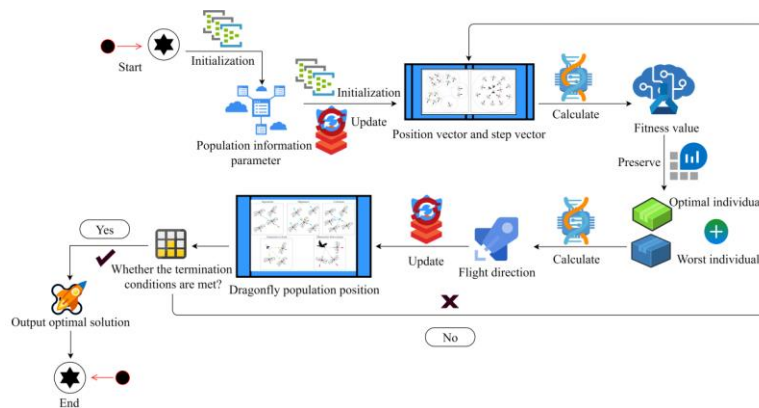

Figure 1: DA algorithm flow diagram.

(1) Separation behavior refers to the separation between a single dragonfly and its neighbors, and its behavior expression is:

$$Q_i = -\sum_{t=1}^{N} L - L_t \tag{1}$$

Where Q_i represents the degree of separation between a single dragonfly and adjacent dragonflies; L refers to the position of a single dragonfly; L_t refers to the position of adjacent dragonflies; N is the number of adjacent dragonflies.

(2) Alignment behavior, which represents the alignment speed of a single dragonfly with its neighboring dragonflies, is expressed as follows:

$$H_i = \frac{\sum_{t=1}^{i} V_t - V_t}{N} \qquad (2)$$

Where V_t represents the speed of a non-single dragonfly.

(3) Cohesive behavior, which refers to the collective gathering between a single dragonfly and its neighboring companions. Its behavior expression is:

$$Y_i = \frac{\sum_{t=1}^{N} V_t - L_t}{N} - L \qquad (3)$$

Type Y_i refers to the cohesion of the behavior.

Foraging behavior refers to the dragonflies in the group looking for food separately, and the expression is as follows:

$$C_i = L_i + L^+ - L \qquad (4)$$

Where C_i indicates the foraging ability of the species and L^+ refers to the specific location of the food sought.

(5) Enemy avoidance behavior refers to the behavior of the species challenging to avoid external interference and foreign enemies. The expression is as follows:

$$F_i = L^- + L \qquad (5)$$

Where F_i indicates the ability of the species to avoid external enemies; L^- refers to the specific position of external enemies. The DA algorithm is an algorithm that constantly seeks to update the specific location of dragonflies. Usually, there are two situations. In the first case, when there are companions or the same kind of species nearby, the species can find its own position through the five behaviors listed above and constantly adjust its flying speed and direction, resulting in its own air position constantly changing. For the change of direction and position, it is necessary to find the best result. $\pi+$ is the next generation of π, and its position iterative update expression is as follows:

$$L_{\pi+} = L_\pi + \Delta L_{\pi+} \qquad (6)$$

In the second case, when there are no companions around the species, the LY function can be used to update the position of the species so as to find their groups. In other words, we can see that the DA algorithm has good global search ability, which can help the BP neural network algorithm optimize the weights and threshold values globally. However, it still has shortcomings because there is not too much information exchange between dragonflies, and the optimization of each generation does not make full use of the excellent individuals of the previous generation, which affects the convergence of the algorithm and is prone to premature convergence. Aiming at the shortage of convergence of DA algorithm, the strategy of multi-elite position combination can be adopted to realize individual enhanced DA algorithm. The strategy adopted is to select the first three best individuals when selecting a new position matrix and make a chaotic linear combination by using the randomness of chaotic mapping. Because of the aperiodicity and ergodicity of chaos,

the optimized linear combination can be searched locally near the best-known individual so that the previous generation of excellent individuals can be fully utilized, the global search ability can be greatly improved, and premature convergence can be avoided. Its BP neural network structure diagram is shown in Figure 2.
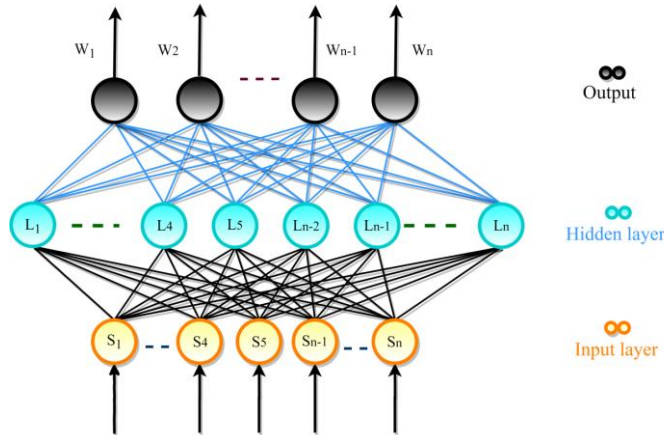
Figure 2: BP neural network structure diagram.

The sample is trained by forward propagation from the input layer to the hidden layer and then to the output layer. In the process, the error is obtained. If the error does not meet the expected value, it is propagated back. The gradient descent principle is adopted to adjust the weights and thresholds of the network several times so that the error is as close to the expected value as possible. The flow of the BP algorithm is as follows:

(1) The number of nodes in the input layer is set to q $q = 1,2\cdots,n$, the number of nodes in the output layer is l $l = 1,2,\cdots m$, and the number of nodes in the hidden layer is set to g $g = 1,2,\cdots,o$. The threshold from the output layer to the hidden layer is set to α_g , and the conversion between them is β_1 . For the initial setting, the weight from the input layer to the hidden layer is set to w_{qg} , and the weight from the hidden layer to the output layer is set to w_{1g} .

(2) The output formula for calculating the hidden layer is as follows, where g(x) refers to Sigmoid excitation function.

$$S_g = g\left(\sum_q^m w_{qg} - \alpha_q\right) \tag{7}$$

(3) Calculate the output layer, and the result expression is:

$$W_l = \sum_{g=1}^m S_g w_{1g} + \beta_l \tag{8}$$

(4) Error calculation formula and expected output expression are as follows:

$$E = \frac{1}{2}\sum_{l=1}^m \Delta W_l - W_l^{\,2} - W_l \tag{9}$$

$$E_l = \Delta W_l - W \tag{10}$$

(5) If it is necessary to judge whether the value of two adjacent errors is less than the corresponding expected value, if it is less than the expected value, the weights and thresholds can be saved, and if not, the weights and thresholds can be updated until the expected value can be reached or the iterative update can be completed within the specified number of iterations. It can be seen from the above BP algorithm flow that weight and threshold are the key points of this algorithm.

3.3 Construction of Ideology Dynamic Early Warning System Based on DA-BP Algorithm

The dynamic early warning system of ideology based on DA-BP algorithm mainly realizes the data collection and potential law mining of courses offering, effect evaluation, ideological dynamic control, early warning feedback, and other links of ideological work for college students with obvious potential ideological dynamic differences, and realizes the complete life cycle information management and control of ideological work in colleges and universities. As shown in Figure 3.
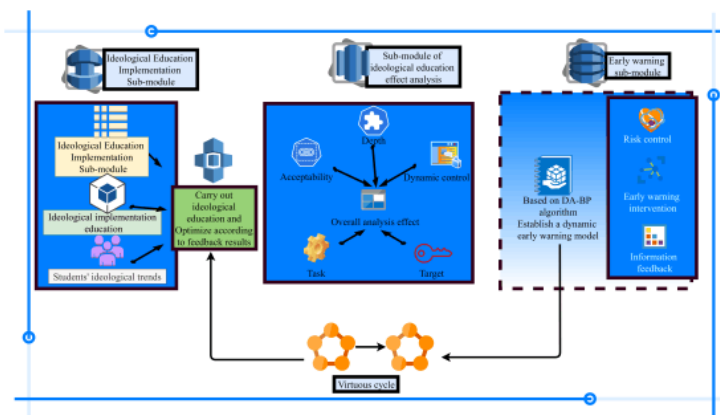
Figure 3: Building an ideological dynamic early warning system based on the DA-BP algorithm.

On the whole, the ideological dynamic early warning system based on the DA-BP algorithm logically includes three sub-modules: ideological implementation, ideological effect analysis, and ideological dynamic early warning. The ideological dynamic early warning system based on early warning classifier mainly realizes the coordination and interaction among college ideological practitioners, college students, and college ideological functional departments, clarifies college ideological goals, sets the core tasks of college ideology, and ensures the stability of college ideological defense. As an important part of psychological crisis intervention in colleges and universities, the dynamic early warning system of ideology based on the DA-BP algorithm should follow the principles of prevention first, intervention second, people first, and linkage between colleges and universities under the general pattern of the two-level management system of colleges and universities. The essence of college students' early warning of an ideological crisis is to predict the psychological crisis early so as to take targeted preventive measures and reduce the occurrence of the crisis. Accurate and timely grasp and prediction of students' ideological and psychological activities may greatly reduce the probability of students' crisis events. If students' problems can be found in advance, ideological workers can take timely measures to avoid possible events. We can start the ideological dynamic early warning sub-module, find out the students with dangerous thoughts in advance, send out early warning tips, and take active intervention measures in time to ensure that the ideology of higher vocational colleges is effective. The neural

network algorithm is the core algorithm of the decision analysis system. Aiming at the problem of minimizing the unlimited experience loss when the ideological dynamic early warning model is transformed into penalty factors, the improved support vector machine algorithm is used to construct and solve the objective kernel function, and the obtained user's hidden interest decision data set is processed for decision analysis. The implicit nodes of the BP neural network are used to represent membership functions and fuzzy rules, and the input and output nodes of the BP neural network are mapped into the input and output signal flow of the fuzzy system. Finally, the simulation data set provided by the fuzzy neural network toolbox in MATLAB can be used for verification.

Among them, a small part of the ideological dynamic early warning system is the establishment of the countermeasure library, which exists as a think tank specially set up for students' various problems, integrating various opinions and solutions and storing a large number of countermeasures, including regular countermeasures, strategic countermeasures and emergency countermeasures.

Early warning detection includes two parts: early warning information collection and early warning information analysis. Evaluating the obtained early warning information is the key to the whole early warning system, and the correctness of the evaluation determines the correctness of the crisis forecast. Establishing an early warning model can quantify the early warning evaluation. According to the analysis of early warning indicators, students with different degrees of psychological crisis can take different intervention measures. Conventional mental health care, peer counseling, etc., are often suitable for students with a low degree of psychological crisis, while students with a high degree of psychological crisis need "real-time monitoring" and "timely prevention". Early warning objects include group objects and individual objects. From the perspective of college students' personal information background, female college students, graduates, outstanding students, lovelorn students, and freshmen belong to the scope of early warning. From the background of college students' situational information, poor students, single-parent families, and college students whose parents are not harmonious are often prone to psychological crises. Therefore, these susceptible groups are screened out from the early warning objective indicators, and targeted one-to-one mental health services are provided. Dynamic detection indicators can be established, including individual susceptibility factors, stressors, emotions, and social support. Each indicator can also be subordinate to sub-indicators. According to the construction of these indicators, every year, early warning and detection are carried out for college students, a dynamic index system is established, and the information is quickly analyzed and processed. In this way, we can not only find the crisis accurately and timely but also evaluate the early warning information according to the scientific judgment standard and make an accurate prediction and judgment on the possibility of crisis.

4   RESULT ANALYSIS AND DISCUSSION

The research object takes universities as the core and the types of universities as the sample frame and randomly selects the target universities and sample groups from many universities. A total of 750 questionnaires were investigated, and 738 valid questionnaires were collected, with an effective rate of 98.4%. Among them, 148 universities were deployed, accounting for more than 20%. The proportion of students surveyed is 64% for girls and 36% for boys. The content of the questionnaire is based on ideological familiarity and psychological security. The statistical results of the influence on the personal information and self-learning cognition level of the samples are shown in Table 1.

Dependent variable	Independent variable	L	SE	Sig	T
Personal information	Marriage of parents	0.14806	0.325	0.021	2.3524

	Gender	0.11540	0.1542	0.215	3.2548
	Ethnic group	0.19524	0.6542	0.354	4.6748
Self-learning cognitive level	Excellent study situation	-0.25412	0.3541	0.254	5.3854
	The learning situation is moderate.	-0.21541	0.45862	0.249	5.3624
	Learning situation deviation	0.145587	0.2548	0.238	5.3257

Table 1: Statistical results of the influence on the personal information and self-learning cognition level of the samples.

In dynamic early warning, psychological stressors play the primary role of psychological early warning and can identify and distinguish people susceptible to psychological crisis. Behavioral conditioning theory holds that "stimulus-response" is the most basic response model. The difficulties and pressures experienced by college students during their growth are all stimulus sources, that is, stressors. Generally speaking, stressors themselves do not directly cause psychological crises. Only when college students perceive the negative influence of stressors and produce negative perceptions will the influence of stressors on mental health occur. Therefore, stressors are still experiences and feelings, and only when we feel nonspecific reactions can these stimuli become stressors. After learning about students' self-cognition, it is necessary to rely on the platform to test the system further when it comes to the detection of early warning indicators. To verify the accuracy and effectiveness of the DA-BP model, DA-BP is compared with GA-BP, PSO-BP, and BP. Particle swarm optimization (PSO) parameters: the maximum number of iterations is 100, and the mutation probability of population size is 0.1. The comparison of prediction results under different algorithms is shown in Table 2.

Method	Training set		Test set	
	RMSE	R	RMSE	R
DA-BP	0.0078	0.9745	0.0254	0.9875
PSO-BP	0.0254	0.9654	0.0348	0.97541
GA-BP	0.0157	0.9534	0.0284	0.9587
BP	0.0125	0.8659	0.0369	0.9624

Table 2: Comparison of prediction results of different algorithms.

For dynamic prediction, the RMSE value of the training set under the DA-BP algorithm is the smallest, and the correlation coefficient R is the largest, which indicates that the correlation degree of the predicted actual value under this algorithm is the highest. To further verify the advantages of the early warning constructed in this paper, we compare two commonly used modes, PSO-BP and GA-BP, under the same conditions. Three kinds of network models are simulated independently and run 50 times. The average iteration steps and the success rate of the global optimal solution obtained under different models are recorded. The results are shown in Figure 4 and Figure 5, respectively.
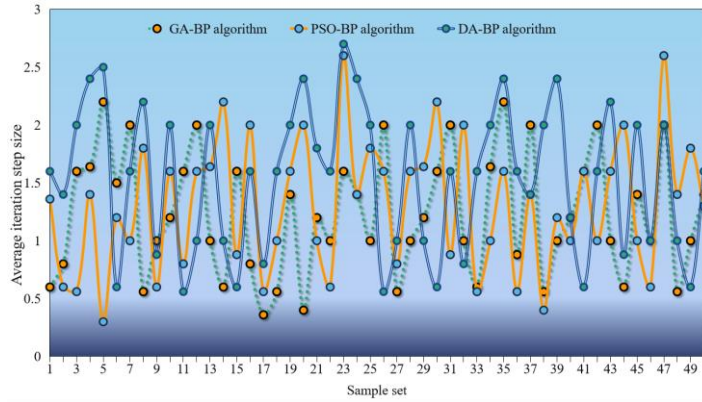
Figure 4: Comparison of average iteration steps of different algorithms.
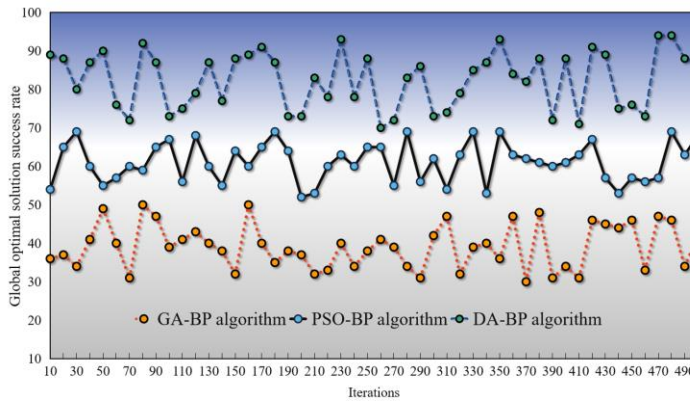

Figure 5: Success rate of the global optimal solution of different algorithms.

In order to further study the running efficiency of the system, the running time under different supports is compared, and the comparison results are shown in Figure 6.
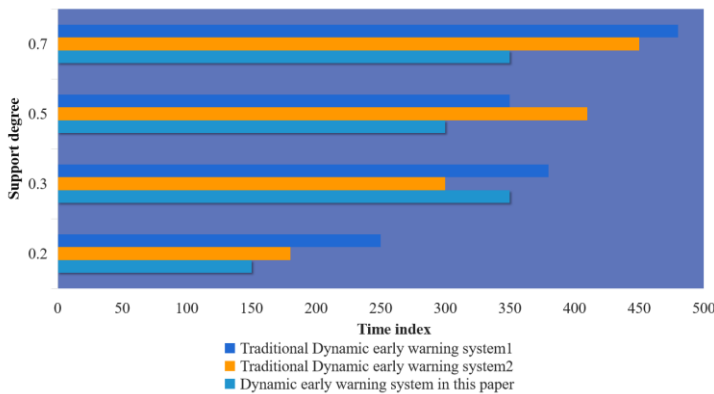

Figure 6: Comparison of running time under different support levels.

By comparing the running time of each system under different supports, the DA-BP algorithm is effective in teaching big data analysis, and its accuracy is better than that of the GA-BP algorithm under the traditional system. With the increase in support, the running time of the DA-BP algorithm is much less than that of the other two traditional systems. Further study of the performance of this system will be conducted, and the system stability will be compared using different algorithms. The results are shown in Figure 7.
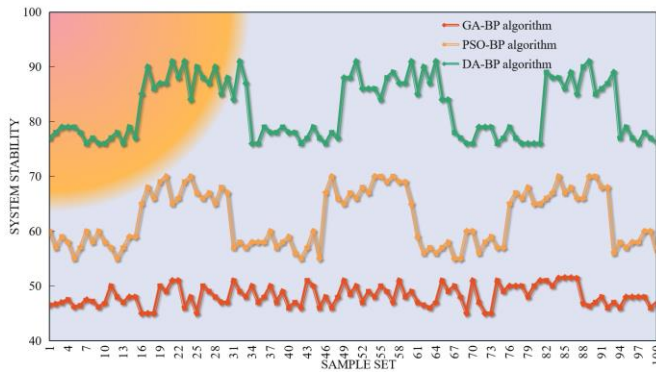

Figure 7: System stability under different algorithms.

Figure 7 shows that the system stability of this algorithm can reach 91.5%. The information obtained by the early warning mechanism is very scattered and huge because every person with a sense of crisis can become a member of the collection mechanism, and everyone can get a lot of information about others from the Internet every day, among which there is no lack of passive or crisis information. If the crisis information cannot be completely processed within a limited time, it is necessary to make a clear classification of the information and prioritize things so as to solve them step by step. The early-warning mechanism is aimed at the crisis problems determined by the collection mechanism and the control mechanism. For these complicated and urgent problems, the early-warning mechanism must take appropriate measures to ensure that the crisis information or the crisis events can be effectively solved. Therefore, the kind of way or method adopted is of vital significance to the early-warning mechanism, or it can be said that the key to the operation of the early-warning mechanism lies in the application of methods. The accuracy of different dynamic early warning systems is compared, and the results are shown in Figure 8.
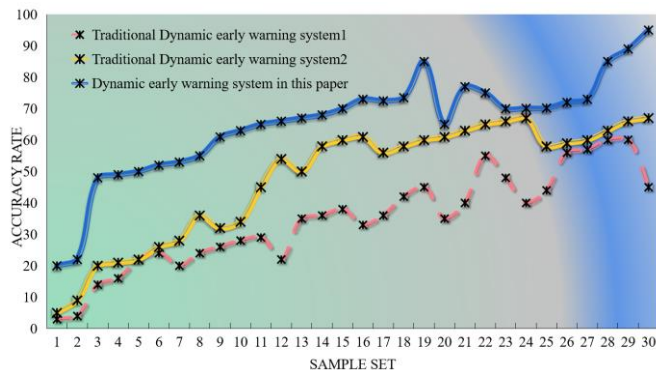

Figure 8: Comparison of accuracy of different dynamic early warning systems.

As can be seen from Figure 8, the dynamic early warning accuracy rate of this system is the highest, reaching 95.2%. Through the early warning function in the system, the development trend of various phenomena and problems can be predicted in time, and the adverse situations found can be warned to avoid the deterioration of adverse situations or more serious consequences. If the ideological education of college students is not guaranteed by an early warning mechanism, it will lack strong backing and cannot guarantee the effectiveness of ideological education in both directions. The experimental results show that the running stability rate of the ideological dynamic early warning system based on the DA-BP algorithm can reach 91.5%, the prediction accuracy rate is 95.2%, and the highest success rate of the optimal solution can reach 94.1%, which indicates that the system in this paper can play a good role in ideological dynamic early warning and also play a certain role in promoting ideological dynamic control.

5 CONCLUSIONS

Ideological education has been given great importance by ideological educators in colleges and universities. At present, an important task is how to effectively apply the early warning mechanism to the network of ideological education in colleges and universities so as to find out the bad phenomena and hidden negativity of teachers and students in time and promote the healthy and all-round development of teachers and students in colleges and universities. This determines that the dynamic early warning system of college students' ideological education has become a subject worthy of great attention and in-depth study by ideological educators. Based on this, this paper studies the realization of the DA-BP algorithm, constructs a dynamic early warning system of ideology, and analyzes the simulation results. The experimental results show that the running stability rate of the ideological dynamic early warning system based on the DA-BP algorithm can reach 91.5%, the prediction accuracy rate is 95.2%, and the highest success rate of the optimal solution can reach 94.1%. It shows that the system in this paper can promote ideological dynamic control to some extent and promote the development of early warnings of the ideological dynamic in the future.

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