

## *Retraction*

# **Retracted: Design of Counselor Job Matching and Ideological and Political Education Methods Integrating Deep Learning Model**

### **Wireless Communications and Mobile Computing**

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This article has been retracted by Hindawi following an investigation undertaken by the publisher [1]. This investigation has uncovered evidence of one or more of the following indicators of systematic manipulation of the publication process:

- (1) Discrepancies in scope
- (2) Discrepancies in the description of the research reported
- (3) Discrepancies between the availability of data and the research described
- (4) Inappropriate citations
- (5) Incoherent, meaningless and/or irrelevant content included in the article
- (6) Peer-review manipulation

The presence of these indicators undermines our confidence in the integrity of the article's content and we cannot, therefore, vouch for its reliability. Please note that this notice is intended solely to alert readers that the content of this article is unreliable. We have not investigated whether authors were aware of or involved in the systematic manipulation of the publication process.

Wiley and Hindawi regrets that the usual quality checks did not identify these issues before publication and have since put additional measures in place to safeguard research integrity.

We wish to credit our own Research Integrity and Research Publishing teams and anonymous and named external researchers and research integrity experts for contributing to this investigation.

The corresponding author, as the representative of all authors, has been given the opportunity to register their agreement or disagreement to this retraction. We have kept a record of any response received.

### **References**

- [1] R. Wu and J. Xu, "Design of Counselor Job Matching and Ideological and Political Education Methods Integrating Deep Learning Model," *Wireless Communications and Mobile Computing*, vol. 2022, Article ID 3760149, 9 pages, 2022.

## Research Article

# Design of Counselor Job Matching and Ideological and Political Education Methods Integrating Deep Learning Model

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In the process of civic and political education, counselors should not only provide good service guidance for students' learning but also deeply understand students' ideological dynamics and psychological conditions. This would help to guide them in establishing healthy ideological concepts and moral qualities. The continuous development of ideological education cannot be achieved without the assistance of an experienced counselor team. There is a nationwide requirement to strengthen the professionalism of college counselors which is presently lagging. There exists a gap between the demand of the job seekers and the relevant products who fail to meet the need of the college administrators, working counselors, and other groups. The present paper focuses on providing solutions to the current problems pertinent to inaccurate matching of counselor positions in ideological and political education, the lagging information feedback, and the existence of imperfect early warning intervention mechanism. The paper proposes an integrated deep learning model which automates the learning of a large number of college students' user behaviors using deep learning algorithms thereby incorporating early warning classifiers. This helps to establish a model enabling accurate counselor job matching and ideological and political education methods. Simulation is used to verify the effectiveness of the model using relevant databases which establishes the superiority of the proposed method in resolving mismatch issues in human resources, handles imbalances in actual effectiveness, and also ensures lagging information feedback in the process of providing dynamic early warning in case of college and university level ideological and political education.

## 1. Introduction

The environment of ethical and communist education innovation in colleges and universities is getting better and better, and on the whole, the level of ethical and communist education in colleges and universities has been improved to a certain extent compared with the past. In the coming period, ethical and communist education is bound to focus on the solution of inherent educational problems [1–3]. At present, some teachers, despite their attempts related to educational innovation, do not have satisfactory practical results. Most teachers are unable to promote the effectiveness of ethical

and communist education in a short period of time. In view of this, it is necessary and important to find out the strategies to solve the problems of ethical and communist education [4]. On the one hand, after better ethical and communist education, students' political beliefs will become stronger, and their political identity and patriotism can be better enhanced and cultivated. In the background of the continuous development and maturity of self-media, the inappropriate comments made by some college students have aroused the concern of the whole society about the ethical and communist education in colleges and universities; therefore, how to adjust and optimize the ethical and communist education

and how to improve the effectiveness of ethical and communist education have become the key educational issues that have to be paid attention to [5]. For each university, especially for many ideological and political teachers, they also need to think more fully and carefully about what are the problems of ethical and communist education and how to solve the series of ethical and communist education problems. The goal of ethical and communist education is vague. The ethical and communist education in many colleges and universities is simple having redundancies. Although the ethical and communist education is carried out regularly, the goal of ethical and communist education is vague which lags relevant goal. This also leads to the direction and purpose of development in educational activities being clear. The ethical and communist education is a form of education which exists throughout the entire process of students' higher education. Theoretically, ethical and communist education should clearly define the basic objectives and then carry out education under the guidance of corresponding objectives. However, since a long time, the ideological and political teachers in colleges and universities have not planned ethical and communist education systematically, which have led to extremely vague objectives of ethical and communist education which, in the absence of good objectives, ethical and communist education activities can easily become very simple with mechanical repetitions [6]. More seriously, due to the lack of corresponding goals, it is often difficult for teachers to get a better grasp of the ethical and communist education situation based on specific criteria, and thus, the subsequent ethical and communist education activities tend to be carried out with a high degree of redundant activities. With poor interactivity in ethical and communist education in the ethical and communist education of colleges and universities, teaching of ideological and political courses is as the main educational challenge, but the lack of effective interaction in ethical and communist education further intensifies the mechanical nature of ethical and communist education. Unlike professional course education, the frequency of student-student interaction and teacher-student interaction in ethical and communist education is low, and the quality of interaction is also at a low level. When the interaction of education is relatively poor, it is difficult for teachers to have a better perception of the real level of ethical and communist education, and some of the ethical and communist education adjustments or optimizations made tend to be irrelevant. In addition, the lack of effective interaction makes it difficult for teachers to provide guidance in ethical and communist education, and the lack of educational guidance media easily leads teachers to become extremely passive in ethical and communist education. As the ideological maturity of some college students is low, the effectiveness of education teachers also further deteriorates. This shows that the interactivity in ethical and communist education often has a direct impact on the effectiveness of ethical and communist education, and the difficulty of further improving the effectiveness of ethical and communist education is bound to be quite high in the absence of better interaction. The content of ethical and communist education is relatively solidified in most univer-

sities, and this has become a common problem in ethical and communist education. When teachers rely too much on the contents of textbooks for ethical and communist education [7–9], ethical and communist education actually has great limitations. Some of the ideological and political textbooks chosen by colleges and universities have boring theories, and teachers do not expand the content of ethical and communist education in their ethical and communist education. Under the influence of this problem, the enthusiasm of many students to receive ethical and communist education and their interest in learning ideological and political knowledge are at a low level.

The most classic and widely used ones in the field of competency model research are the “iceberg model” and the “onion model.” The “iceberg model” is proposed by McClelland, which divides the different manifestations of individual personnel into the “above iceberg” and “below iceberg” parts on the surface [10–13]. The part above the iceberg is the external performance which includes basic knowledge and skills, which are easy to understand, measure, change, and develop. The part below the iceberg is the internal traits, including self-awareness, personality, and motivation, which are difficult to measure and not easy to change but play a key role in human behavior (as shown in Figure 1).

The “onion model” was developed by R. Boyatz on the basis of the iceberg model. The model focuses more on the internal and external structure of each factor in the form of layers of wrapping. The core factor of the model is motivation, which is followed by personality, self-awareness and values, knowledge, skills, etc. (as shown in Figure 2).

The onion model not only shows the core of the quality components but also illustrates the characteristics of each component that can be observed and measured, and the more each factor is located in the outer layer, the easier it is to cultivate and evaluate; conversely, the more it is located in the inner layer, the more difficult it is to change and acquire [14]. The essence of the two models is the same, both emphasizing core and basic qualities, but the onion model highlights the hierarchical relationship between inner and outer qualities and better illustrates the connection between qualities compared to the iceberg model. This is the reason behind the “onion model” being so widely used in the construction of competency models in various fields since its inception. In this paper, we propose the basic idea of deep learning model for counselor job matching and ideological education: the competency model of college counselors is built based on the classical models such as “iceberg model” or “onion model” in a hierarchical way. According to the structure and theory of the classical hierarchical model, the factors affecting the competency of college counselors are divided into five categories, such as skills, knowledge, values, personality, and motivation. The present paper focuses on designing a deep learning-based neural network model for college counselors' ideological and political competency, which demonstrates the effectiveness of the proposed method in various relevant experiments. The paper is organized as follows: Section 1 provides an introduction of the existing status of education and employability in different colleges. Section 2 presents a review of the related work.

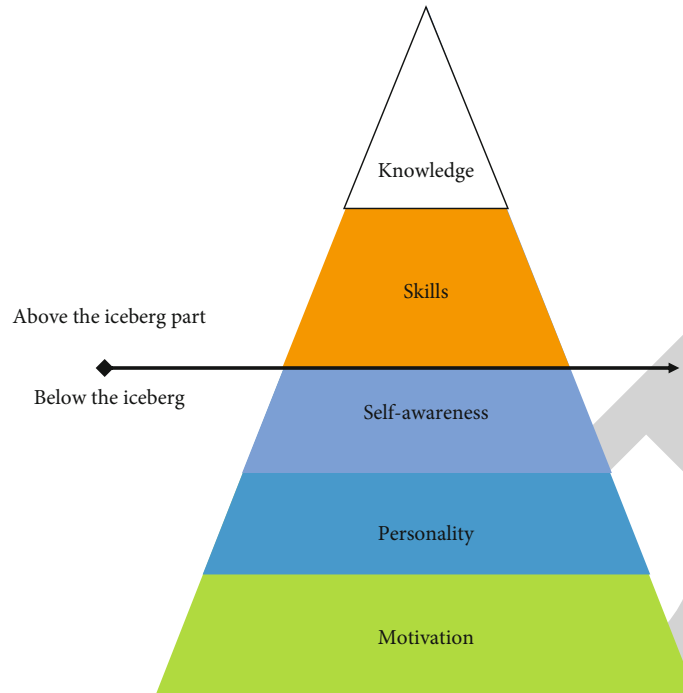


FIGURE 1: Iceberg model structure diagram.

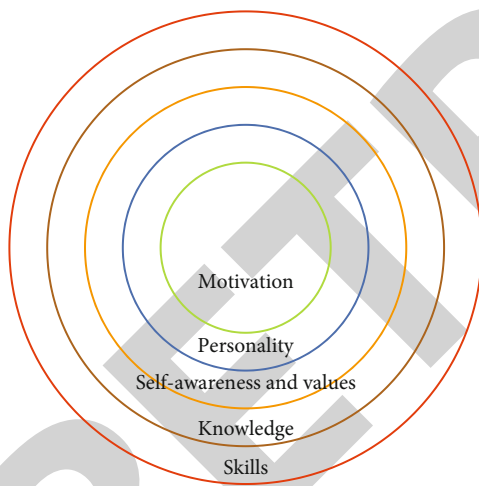


FIGURE 2: Onion model structure diagram.

Section 3 discusses the methodology followed by the results in Section 4 and conclusion in Section 5.

## 2. Related Work

**2.1. Ideological and Political Education.** The ethical and communist education activities cannot be carried out without systematic planning, and it is also important to clarify the educational objectives on the basis of systematic planning so as to enhance the direction and purpose of ethical and communist education [15]. For example, teachers can take the shaping of students' correct three outlooks as the stage ethical and communist education goal. Under the guidance of this goal, teachers can try to cultivate correct

worldview, outlook on life, and values in ethical and communist education in relation to the content of socialist core values, so as to enhance the direction and purpose of ethical and communist education in the new era of colleges and universities. After establishing different education and teaching goals, teachers should evaluate the teaching around the achievement status of the set goals, so as to better grasp the corresponding teaching dynamics. The lack of good interaction has weakened the actual effectiveness of ethical and communist education, so it is desirable to build a multi-dimensional interactive ideological and political classroom teaching, that is, the classroom teaching needs to be closely linked with student-student interaction and teacher-student contact. For example, when explaining the knowledge of "political system," teachers can create some interactive questions with the characteristics of the political systems of typical countries, such as Britain, the United States, and Japan, and what are the advantages and disadvantages of different political systems, so as to guide students to think about what they have learned. In this process, teachers can go deeper into the student groups to observe students' interactive performance and provide some targeted educational teaching guidance. Teachers in ethical and communist education can also create more interactive questions with corresponding knowledge and content, use the creation of corresponding questions to guide students to think and investigate, and encourage students to conduct cooperative group inquiry learning. Our university is currently implementing the "three into one" model, in which the ideological tutor enters the college and achieves good results in promoting the ideological and political work of students in the college [16, 17]. Contact with current affairs resources to enrich the ethical and communist education content. Ideological

and political knowledge is knowledge closely related to the real society and real life. In the seminar of "Innovation of ethical and communist education in New Era," the enrichment of the content of ideological and political courses has got the attention of many scholars and teachers, and it is also very desirable to enrich the content of ethical and communist education with current affairs resources under the perspective of living teaching. For example, in the lecture of "Contemporary World Economy and Politics," teachers can explain the economic development of the world's major economies under the influence of world emergencies and the impact of world emergencies on the world economy and politics, so that students can learn and understand ideological and political knowledge in relation to the concrete cognition in real life. After introducing current affairs resources and teaching from the perspective of life, the contemporary connotation of ethical and communist education in colleges and universities will become richer and richer.

*2.2. Counselor Job Matching.* There is a great need for breakthrough and innovation in the recruitment methods of universities. The traditional recruitment method focuses more on the examination of the candidate's professional knowledge and expression ability, and the examination results are easily too subjective and one-sided, lacking scientific basis. Therefore, it is of great significance to use the accurate matching system for college counselor positions to test the matching degree of job applicants, so that college managers can obtain more objective, scientific, and stable assessment results, thus helping them to select more suitable candidates for college counselor positions and promoting the construction of college counselor team. The system can assess and propose training directions for in-service counselors. In the process of professionalization and vocationalization of the counselor team, in order to ensure the quality of the work, the system can be used to evaluate the job matching degree of in-service counselors and find the weak links in the process of professionalization of the counselor team, so as to help improve the accuracy of training.

In terms of the research on job matching, international scholars started their research as early as the 1880s, while Chinese researchers paid more attention to "job matching" until 2001, when they first introduced the progress and significance of foreign researchers' research on human-organization matching in China, and then, Chinese scholars started their related research one after another. A look at the research on person-job matching by Chinese and foreign researchers reveals that the focus of the two is different, as foreign researchers tend to study person-organization matching, while Chinese researchers tend to study person-job matching. The integration model of human-organizational matching, which believes that the compatibility of human and organization can be conceptualized in four forms: consistent matching, complementary matching, need-supply view, and demandability, further integrates the concept of human-organizational matching and proposes an integration model of matching between the two, in which as long as there exists a party between human and organization that can provide the other party with. In the case that one party can provide the

required resources for the other, or there is similarity between the two, or both of these aspects exist, the matching between people and organizations has been created. With the rapid development of computer technology, a large number of new evaluation tools have been applied to job matching assessment [18, 19]. In view of the difficulty of quantifying job matching indexes, researchers have mostly used hierarchical analysis and fuzzy comprehensive evaluation method to form a job matching model. Although Chinese researchers started their research on job matching relatively late, many scholars introduced various models in the process of studying job matching, which greatly improved the accuracy of the assessment results. The methodological basis of man-post matching, due to the variability of individuals, their ability level changes differently, and the man-post matching model should change continuously with the change of people's ability level and position. Achieving the correspondence between the ability level and the rank or the general correspondence is the key to man-job matching. Although the focus of different researches is different, their researches have broadened many evaluation methods about man-job matching for us [20].

### 3. Methodology

While the previous chapters have designed the front-end functionality of the system, this section focuses on the design of the back-end implementation logic involved in the "unit recommendation management" function. The design is as follows: as shown in Figure 3, the recommendation model designed by the system processes the data in the database of employers and students and then uses the corresponding algorithm model to calculate and finally derive the recommended names of employers.

The specific process is as follows: data collection. The data collection of students and recent graduates is carried out through the functions designed in the previous section, and the database of employers and students is established. The job information is provided by the employer database, while the data of fresh graduates and previous graduates are provided by the student database. It can also be changed to the following: the job information is exported from the employer database, and the data of recent graduates and former graduates are exported from the student database. A hierarchical analysis model is used which helps to identify and map the job characteristics with matching graduates having skills relevant to the job. It is a process of matching job characteristics with the characteristics of recent graduates. First, by analyzing the job requirements, the basic situation of fresh graduates, through the hierarchical method, the index system is constructed; then, the weight values of different indexes are calculated by setting the importance degree between the indexes; finally, the features of a fresh graduate are used for the matching degree calculation of all job features, dust into recommended positions, and each position corresponds to an employer, and finally, the recommended employer N is obtained. The SimRank algorithm model is used in the study which helps to establish the association between fresh graduates and employers by analyzing the similarity of matching degree between fresh graduates

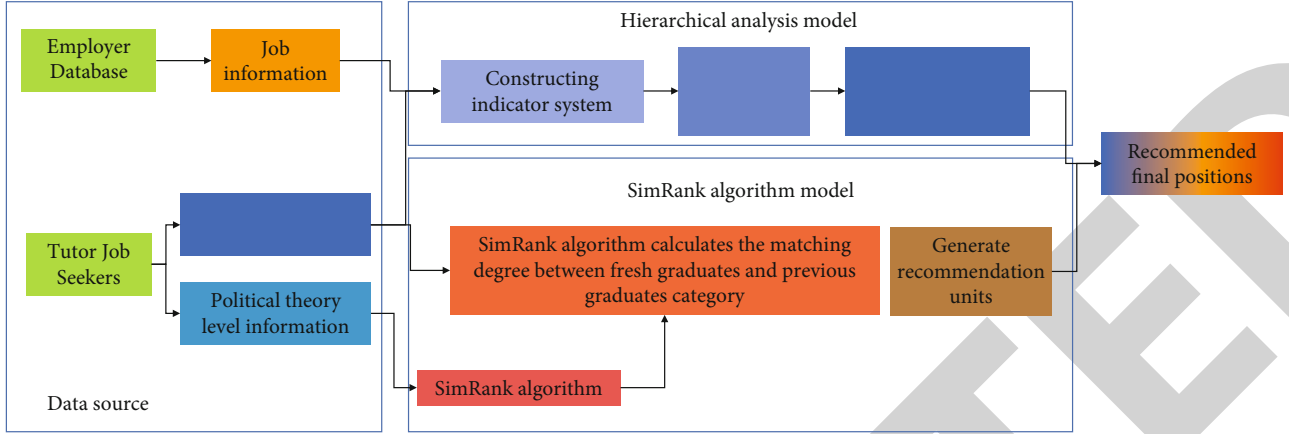


FIGURE 3: Model structure.

and previous graduates. The relationship between a current employer and the previous employer can be established based on their association with a unique employer. First, the K-Means algorithm combined with the SimRank algorithm is used to perform the clustering analysis of previous graduates. Then, the SimRank algorithm is used to calculate the matching degree between a certain fresh graduate and the class of previous graduates, so as to find the class of previous graduates with the highest matching degree, and the employer to which this class of students signed is the potential best recommendation result. A summation operation is performed in order to arrive at the final recommendation results of employers and display the same to the fresh graduates.

**3.1. SimRank Algorithm.** SimRank is an I-model that measures the degree of similarity between any two objects based on the topological information of the graph. The core idea of the model is that if two objects are referenced by their similar objects, then these two objects are also similar. To facilitate the true understanding of the SimRank algorithm, a directed graph can be used to represent the association relationship between different objects. Since the algorithm is a continuous iterative process, two objects are initialized with a match of 1 with itself and a match of 0 between these two objects, as can be seen in Figure 4.

This Figure 4 contains Univ, ProfA, ProfB, StudentA, and StudentB five objects, where ProfA and ProfB are associated with Univ, so that ProfA and ProfB are considered to have a certain matching relationship, and similarly, we can know that StudentA is associated with ProfA, and StudentB is associated with ProfB. Since it is already known that ProfA and ProfB are associated, so to some extent, StudentA and StudentB are also associated.

As Figure 4 also shows, the association of this graph is relatively simple, and they are all associated to a final object, which is only a special case in the SimRank algorithm. When the number of nodes in the graph starts to increase, the association relationship starts to show undirected Ness.

In the following Figure 5, A and B both buy frosting and eggs; then, A and B are similar; by the same token, we can see that A buys sugars, and B buys flours; then, sugars and

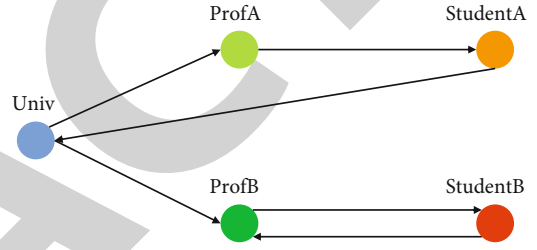


FIGURE 4: Example of the associative directed graph used in SimRank iteration.

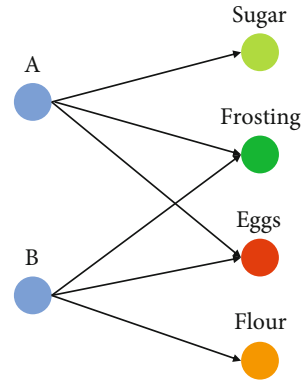


FIGURE 5: SimRank algorithm example.

flour also have some similarity. When  $A \neq B$  (points-to-similarity),

$$s(a, b) = \frac{C_1}{|I(a)||I(b)|} \sum_{i=1}^{|I(a)|} \sum_{j=1}^{|I(b)|} S(I_i(a), I_j(b)). \quad (1)$$

In this formula, the similarity of two objects  $a$  and  $b$  is defined, which completely depends on the similarity situation associated with these two objects.  $s(a, b)$  denotes the match between  $a$  and  $b$ ;  $I(a)$  denotes the set of nodes directly connected to  $a$ ,  $|I(a)|$  denotes the number of nodes directly

connected to  $a$ ;  $I_i(a)$  denotes the  $i$ th node directly connected to  $a$ , and  $C$  is the adjustment parameter. In the calculation process of the RimRank algorithm, in fact, calculating the similarity between two points is to calculate a system of equations, and the solved similarity unknowns are the final matching values; in this way, the number of elements in the equation is both the number of nodes in the graph. So, it is easy to understand that the similarity calculation between two nodes becomes the problem of solving a system of equations.

- (1) In the initial stage, the web graph is constructed and the initial similarity of any two different pages is set to 0, otherwise to 1. The final SimRank value of any two pages will be obtained by iterative computation

$$R_0(a, b) = \begin{cases} 0, & a \neq b \\ 1, & a = b \end{cases} \quad (2)$$

- (2) Update the calculation of SimRank score of web pages

$$R_{K+1}(a, b) = \frac{C}{|I(a)||I(b)|} \sum_{i=1}^{|I(a)||I(b)|} \sum_{j=1}^{|I(a)||I(b)|} R_k(I_i(a), I_j(b)), a \neq b \quad (3)$$

The above iterative process is carried out continuously until convergence. The final obtained  $R_{K+1}(a, b)$  is the similarity  $s(a, b)$  between objects  $a$  and  $b$ .

**3.2. Neural Network-Based Matching Model.** After determining the evaluation index of the candidate, an evaluation index of the candidate is considered as an input item, and the specific score of the employee evaluation index is used as the value of the input item in combination with the job requirements, and the output calculated by the network is the matching coefficient of the person and the job applied for. There is a very important theorem for BP networks, that is, for any continuous function in the closed interval can be approximated by a BP network with a single hidden layer, so a three-layer BP network can complete any  $n$ -dimensional to  $m$ -dimensional mapping  $f$ . The three-layer BP neural network model with one hidden layer is used in this paper.

Input vectors

$$X_i = (x_1, x_2 \cdots x_m); i = 1, 2, \cdots, m. \quad (4)$$

Implicit layer input vector

$$H_k = (h_1, h_2 \cdots h_p); k = 1, 2, \cdots, p. \quad (5)$$

Implicit layer output vector

$$Z_k = (z_1, z_2 \cdots z_p); k = 1, 2, \cdots, p. \quad (6)$$

Output layer input vector

$$O_j = (O_1, O_2 \cdots O_n); j = 1, 2, \cdots, n. \quad (7)$$

Output layer output vector

$$Y_j = (y_1, y_2 \cdots y_n); j = 1, 2, \cdots, n. \quad (8)$$

Desired output

$$D_j = (d_1, d_2 \cdots d_n); j = 1, 2, \cdots, n. \quad (9)$$

Connection weights  $i = 1, 2, \cdots, m$ ,  $W_{ki}$  from the input layer to the hidden layer, and  $W$  denotes the connection weight of the  $k$ th node in the hidden layer corresponding to the  $i$ th node in the input layer,  $k = 1, 2, \cdots, p$ .

The connection weight  $U_{jk}$  from the hidden layer to the output layer indicates the connection weight of the  $j$ th node of the output layer corresponding to the  $k$ th node of the hidden layer,  $j = 1, 2, \cdots, n$ ,  $k = 1, 2, \cdots, p$ . The output threshold  $\theta_k$  is for each cell of the hidden layer;  $f(x)$  is the activation function, and the activation functions are all unipolar Sigmoid functions with the following expression:  $f(x) = 1/(1 + e^{-x})$ .

The information is first passed into the network through the input layer and reaches the output layer through the processing of the implicit layer to produce the final result. When the result is similar to the expected result and meets the set error range, the calculation is successful; if the error exceeds the set criterion, it is necessary to return the original way and gradually adjust the value until it meets the requirement to end the calculation. A set of input and target samples  $X_i = (x_1^k, x_2^k, \cdots, x_m^k)$ ,  $D_j = (d_1^k, d_2^k, \cdots, d_n^k)$  is randomly selected and provided to the network. The input samples  $X_i = (x_1^k, x_2^k, \cdots, x_m^k)$ , connection weight  $W_{ki}$ , and threshold  $O_j$  are used to calculate the input  $h_p$  of each unit of the hidden, and then,  $h$  is used to calculate the output  $z_k$  of each unit of the hidden layer by the transfer function.

$$O_j = \sum_{k=1}^p u_{jk} z_k - \phi_j = \sum_{k=1}^p u_{jk} f \left( \sum_{i=1}^m w_{ki} x_i - \theta_k \right) - \phi_j,$$

$$y_j = f(O_j) = f \left( \sum_{k=1}^p u_{jk} z_k - \phi_j \right) = f \left[ \sum_{k=1}^p u_{jk} f \left( \sum_{i=1}^m w_{ki} x_i - \theta_k \right) - \phi_j \right]. \quad (10)$$

**3.3. Ideological and Political Competencies of College Counselors.** The ideological and political competencies of counselors in higher education are stratified as shown in Figure 6. This study takes college counselors as the research object, and according to the research on the competency model of college counselors, the structure of the competency

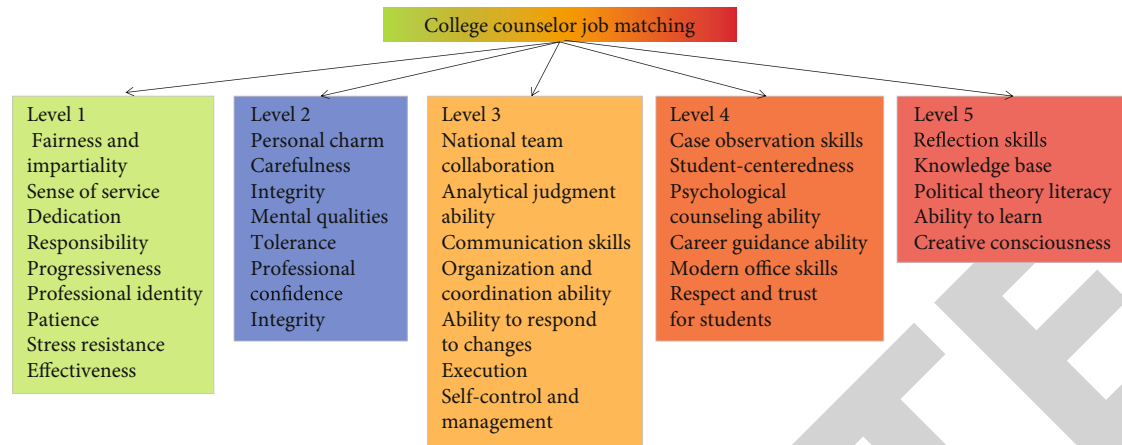


FIGURE 6: College counselor job matching.

characteristics of college counselors is consistent with the structure distribution of the classical competency model, the onion model. Therefore, after a lot of preliminary review and analysis, this study finally chose the hierarchical analysis method to simulate the onion model to hierarchize the weights of the original data in the study. The first step in constructing the hierarchical analysis model is to construct the hierarchical structure model. As mentioned in the previous section, the model is divided into three parts: general objective, criterion level, and solution level. The first layer is the first to fifth layer of the “onion model,” which consists of five factors. The second layer of the criterion layer is assigned according to the competency characteristics of college counselors as follows: the first layer: fairness and justice, service consciousness, dedication, responsibility, aggressiveness, professional identity, patience, stress resistance, and efficiency. Tier 2 includes personal charm, attentiveness, integrity, psychological quality, tolerance, professional self-confidence, and honesty. The third layer is as follows: teamwork, analytical and judgmental ability, communication ability, organization and coordination, resilience, execution, self-control, and management. Tier includes observation skills, student-centeredness, psychological counseling skills, career guidance skills, modern office skills, respect, and trust in students. The fifth level reflects reflective ability, knowledge reserve, political theory literacy, learning ability, and innovation consciousness.

## 4. Experiments and Results

**4.1. Dataset.** Based on the actual situation of the existing bottom managers in company A, the evaluation target of this paper is 100 bottom managers in company A. The data of each index relevant to the bottom management of company are included in the study. The specific scoring method based on the evaluation of the indicators of the 100 managers’, man-job matching by the expert group, the criteria and grades of scoring are set such as follows: educational background: 6 (specialist), 7 (bachelor), 8 (master), and 9 (doctor) and working years: 6 (less than 1 year), 7 (1-3 years),

8 (3-5 years), and 9 (5 years and above). The other indicators and the overall job matching situation are divided into five levels: very poor, poor, average, good, and very good, and the corresponding levels are shown in Table 1 below.

**4.2. Experimental Setup.** The determination of the number of implied layers is based on the number of neurons in the implied layers. In this study, 5~14 is used to train the network, respectively, and then, both the output error and the efficiency of the network are compared. It is found that when the number of implied layers of the neural network is 10, the training of the network tends to the most stable state, and the relevant error value is shown in Table 2 below.

**4.3. Experimental Results.** In order to verify the accuracy of the neural network model trained by the first 90 groups of data, the test is performed on the last 10 groups of sample data after the test. This would help to get the expected output results of human-job matching, and the results are shown in Table 3.

It is generally considered that the relative error is less than or equal to 5% to satisfy the condition that the absolute value of the output error of the trained network and the standard error is controlled within 5%, from which it can be concluded that the neural network model is successfully constructed and can simulate the empirical thinking of experts to make a scientific and reasonable evaluation of the human-job matching.

**4.4. Competency Assessment for Teaching Ideology and Politics.** As shown in Table 4, we further analyzed the effectiveness of the proposed algorithm in practical applications. Comparative experiments were conducted in four colleges and universities, where group A did not use the algorithm of this paper, group B used it for half of the job applicants and half did not, group C used it for 2/3 of the job applicants, and group D used it for all of the job applicants. The results showed that group A had the lowest accuracy of 50%, group B had the highest accuracy of 78.4%, group C had the highest accuracy of 89.2%, and group D had the highest accuracy of 99.4%. In summary, this study concludes



TABLE 1: Grading scale.

| Grade | Very poor | Poor | Fair | Better | Very good |
|-------|-----------|------|------|--------|-----------|
| Score | 1~2       | 3~4  | 5~6  | 7~8    | 9~10      |

TABLE 2: Training error values for networks with different implicit neurons.

| Number of neurons in the hidden layer | Network training error value | Number of trainings |
|---------------------------------------|------------------------------|---------------------|
| 5                                     | 0.000999975                  | 0                   |
| 6                                     | Not converged                | 3020                |
| 7                                     | 0.000999954                  | 0                   |
| 8                                     | Not converged                | 4026                |
| 9                                     | 0.000999956                  | 4081                |
| 10                                    | 0.000999895                  | 1962                |
| 11                                    | 0.000999953                  | 4424                |
| 12                                    | 0.000999939                  | 4169                |
| 13                                    | 0.00099856                   | 3611                |
| 14                                    | 0.00099996                   | 2551                |

TABLE 3: Accuracy of BP neural network.

| Sample | Expected value | Actual value | Error (100%) |
|--------|----------------|--------------|--------------|
| 1      | 0.7100         | 0.7328       | -2.28        |
| 2      | 0.7220         | 0.6888       | 3.32         |
| 3      | 0.7050         | 0.7204       | -1.54        |
| 4      | 0.6660         | 0.7018       | -3.58        |
| 5      | 0.7280         | 0.7090       | 1.90         |
| 6      | 0.7010         | 0.7166       | -1.56        |
| 7      | 0.6470         | 0.6554       | 0.84         |
| 8      | 0.7200         | 0.7021       | 1.79         |
| 9      | 0.7140         | 0.7564       | -4.24        |
| 10     | 0.7380         | 0.7015       | 3.65         |

TABLE 4: Results of the accuracy test of the precise matching model for counselor positions in colleges and universities.

|          | Original group | 50% group | 66% group | 100% group |
|----------|----------------|-----------|-----------|------------|
| Accuracy | 50%            | 78.4%     | 89.2%     | 99.4%      |

that the algorithm proposed in this paper not only incorporates the ideological and political competency and related competency hierarchical model into the model training to effectively improve the training speed and accuracy but also well circumvents the problem of data normalization to destroy the sparsity. It presents a better scientific and objective method in the study for accurate matching of college counselor positions. It can effectively help colleges and universities to provide suggestions in solving the problem of accurate matching of college counselor positions.

## 5. Conclusion

With the continuous development of China's education industry, the number of college students has expanded dramatically, and the allocation of college counselors cannot meet the quantity requirement of 1:200, so how to scientifically and effectively recruit candidates with the ideological and political education quality and ability of college counselors has become a hot issue in this field. To address the problem that the examination of college counselor recruitment is too subjective and cannot fully reflect the comprehensive quality of job seekers and cannot predict the ideological and political education quality and ability of job seekers, this paper researches and implements a precise matching system for college counselor positions based on the recurrent neural network method. This paper summarizes the shortcomings of the neural network approach in previous studies and proposes a new recurrent neural network approach based on which the hierarchical weights of each competency feature are multiplied with the original data to obtain the hierarchical data for training and matching accuracy testing. The experiments prove the effectiveness of the method proposed in this paper. The proposed method could be implemented in various other sectors of human resources and even domains such as matrimonial where selection process is involved. Also, the study could be further validated by using a larger dataset.

## Data Availability

The datasets used during the current study are available from the corresponding author on reasonable request.

## Conflicts of Interest

The authors declare that they have no conflict of interest.

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