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Retraction

Retracted: The Quality Evaluation of Business English Classroom Teaching Using Improved DA-BP Algorithm

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This article has been retracted by Hindawi following an investigation undertaken by the publisher [1].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] M. Zhang, "The Quality Evaluation of Business English Classroom Teaching Using Improved DA-BP Algorithm," *Mathematical Problems in Engineering*, vol. 2022, Article ID 7260914, 9 pages, 2022.

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Research Article

The Quality Evaluation of Business English Classroom Teaching Using Improved DA-BP Algorithm

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With the international development of China's economy, there is an increasing demand for complex talents who are proficient in English and familiar with business operation and management of enterprises. However, it is worth exploring how to explore a proven teaching quality monitoring model for business English (BE) majors. The evaluation system of business English classroom teaching quality should not focus on the effect of teachers' "teaching," but on students' "learning" experience and the effect of "learning." English teaching should take into account the actual situation of students, especially that some students have a poor English foundation and insufficient understanding of English learning. They can improve their English cultural literacy and enhance their intercultural communication skills from learning English. Therefore, when evaluating teaching quality, indicators such as teaching methods and learning strategies should be introduced and emphasis should be placed on motivating students' learning attitudes, emotions, awareness, and experiences to promote cooperative inquiry learning. In this paper, we propose an improved DA-BP algorithm to measure the teaching quality of BE, which has achieved good evaluation results with an accuracy rate of 93%, enriched the content of business English classroom teaching and cultivated more comprehensive and better composite talents for the society.

1. Introduction

The process of economic globalization is bound to be accompanied by the cross-border and cross-regional flow of production factors such as commodities, technology, information, and services. As a necessary means of communication, language is becoming more and more important, especially business English as an international language. When recruiting employees, many companies, especially export-oriented companies, not only require applicants to have good professional knowledge and skills but also must have a high ability to use business English [1]. Now that China's economic development has entered a new normal, it is facing enormous pressure from the transfer of production capacity. With the in-depth advancement of the "One Belt, One Road" project, tens of thousands of high-quality and skilled talents will go abroad for employment or entrepreneurship, which is very important for vocational education talents. Cultivation puts forward higher new requirements, requiring vocational colleges to cultivate technical and technical talents with certain foreign language communication skills who are suitable for "going out" [2].

Due to historical and practical reasons, business English classroom teaching has been facing a huge dilemma. Over the years, most of the students recruited by the school have low comprehensive cultural quality, unclear learning goals, insufficient learning interest and motivation, and poor autonomous learning ability. Especially in the level of business English, the scores vary greatly. The students' foundation is generally weak, the knowledge of pronunciation and grammar is quite lacking, the vocabulary is seriously insufficient, the listening and speaking ability is extremely poor, and they have no interest in learning business English or even disgust. They think that choosing a vocational school is a helpless move, just to learn a skill and find a job after graduation. Therefore, most students and parents, including schools, have the idea of "focusing on majors and ignoring culture" [3]. In addition, the society also has some unfair

views on the students of vocational schools, believing that the students of vocational schools have poor quality and low ability. Therefore, business English teachers will also feel hard and difficult in classroom teaching, which makes the teaching of business English courses in an embarrassing situation of "students are tired of learning and teachers are difficult to teach" [4].

This requires us to build a strong position for business English work in colleges and universities, build a high-quality teaching team, scientifically plan a high-level talent training system, and improve and perfect the business English work system and mechanism. Among them, the quality of business English classroom teaching is directly related to the cultivation of talents. The so-called teaching quality evaluation is to evaluate the standard, efficiency, and quality of teaching activities according to the teaching objectives, and to estimate and judge the teaching value [5]. Although many teachers who are engaged in business English teaching also attach great importance to the research and summary of teaching experience and methods, the research results on the evaluation index system of classroom teaching are few and far between. The new forms, new methods, new approaches, and new ideas of based on the above analysis, how to improve the teaching level and quality of business English courses in colleges and universities, the research on classroom teaching evaluation index and its system is the fundamental to improve the level and quality. Aiming at the influence of the BP evaluation accuracy by its parameter selection, this paper applies the Dragonfly algorithm [(Dragonfly Algorithm, DA)] to the parameter optimization of the initial connection weight c_j, w_{ij} and the threshold ε, θ of the BP model, and proposes a DA-BP-based algorithm [6]. A method for evaluating the quality of business English classroom teaching. The research results show that DA-BP can effectively improve the evaluation accuracy of business English classroom teaching quality and provide a new method and approach for business English classroom teaching quality evaluation.

2. Related Work

Based on the problems existing in business English teaching at this stage, in order to improve the effectiveness of business English classroom teaching, both front-line business English teachers or business English teaching researchers are based on the traditional teaching mode, according to the specific situation of students, Effective classroom teaching reform to mobilize students' interest in business English learning has been carried out, and rich research results have been obtained on business English teaching reform [7].

The theoretical basis of the "layered teaching" model comes from the "teaching according to aptitude" proposed by Confucius. Many front-line teachers have conducted detailed research on this model. [8] The teacher made a relatively complete exposition on this in the relevant research. She pointed out that in recent years, the overall quality of students in schools has declined as a whole, and the two-level differentiation is serious. If these students with great individual differences are organized according to the same standard and model, it will bring many difficulties to teachers' classroom teaching and affect the entire teaching plan. And, the smooth progress of teaching objectives, it is difficult to achieve the established talent training goals, which not only affects the overall improvement of students' quality but also seriously affects the competitiveness of students' further education and employment after graduation [9]. In view of the particularity of education, teaching activities should take into account the differences between individual students, pay attention to the actual situation of students, follow the principle of individualization, classify them according to their performance, divide them into different levels, implement hierarchical teaching, and target each student. Different characteristics of students at different levels, teach students in accordance with their aptitude [10]. When implementing tiered teaching, a thorough examination can be organized at the beginning of the students' admission, and then students can be divided into two levels of fast and slow or three levels of fast, medium, and slow according to their entrance scores and preliminary results and then formulate different teaching plans for different levels. Provides different teaching objectives, adopts different teaching methods, and combines various auxiliary forms such as "preclass tutoring and after-school tutoring, individual tutoring and group tutoring, in-class tutoring, and after-class tutoring" to meet the specific needs of students at different levels. Many scholars have also conducted a lot of research on the stratified teaching of business English and published many articles, such as [11] "Prominent the main body position, try to promote the stratified promotion—the exploration and practice of business English, mathematics stratified teaching." "The Practice and Exploration of Implementing Hierarchical Education in "Higher Vocational Education." [12]. In addition, many vocational schools have also carried out active exploration and research on stratified teaching, and the stratified teaching practice of business English has also made important progress [13].

Students' business English learning ability is low, and they are disgusted or even repelled by the traditional teaching methods of knowledge-based narration, and language learning is still a cultural learning in the final analysis [14]. "Internet and computer learning are very common for students, and the use of the Internet and multimedia for business English teaching has become a major trend in teaching." Teacher [15] said in her "Exploration and Analysis of Business English Teaching Reform." The situation created by multimedia teaching can well stimulate students' interest and make business English teaching more efficient [16].

Through the investigation and research on the current situation of business English teaching, teachers proposed strategies to use multimedia modern technology, create teaching contexts, and improve teaching effectiveness in response to the current problems in business English teaching [17]. He believes that with the help of modern multimedia technology, it is possible to "create a pure business English cultural situation", "create a real life situation," "create a good dialogue situation," "build a strong reading situation," and "preset a strong situation." Explore the situation" [18]. The teaching content that integrates light,

color, sound, and shadow can enable students to expand their imagination in the three-dimensional space where sight and hearing are intertwined, as if they are in various real language environments, and they can better and faster devote themselves to the teaching process [19]. In business English learning, use the knowledge of business English that has been learned to express their feelings, help students to think directly in business English, and use business English to communicate [20].

"Educational Psychology" pointed out, "Interest is a unique intention to show a certain kind of thing, is a strong desire to recognize a certain kind of thing, it reflects people's enthusiasm for a certain activity, is a person's subjective A Personalized Sign of Motivation" [21, 22]. Curiosity is a description of people's motivation for learning, a strong interest in the tireless pursuit and desire for truth and knowledge, and a specific emotional activity with bright colors and clear goals, which directly reflects the intensity of people's interest in learning. The interest in learning is inseparable from people's thirst for knowledge, rational emotions, and positive learning attitude, and it is the desire to learn accompanied by obvious emotional characteristics [23, 24].

Many studies have shown that the degree of student interest in learning has a significant impact on the final learning effect [25]. Students in secondary vocational schools have certain characteristics, and their overall quality is generally not high, mainly manifested as weak willpower, poor self-control, poor emotional regulation, irritability, inability to concentrate for a long time, misbehavior, and behavior. Not right. Compared with many peers, they do not have the pressure to go to school. Whether they study or not depends to a large extent on their own preferences. Therefore, teachers have more responsibility and obligation to carefully study topics that can stimulate students' interest in learning and establish a learning guidance mechanism suitable for students, to help students correct their learning attitude, enhance their interest in learning, further improve their learning ability, and continuously improve their comprehensive literacy.

3. Methods

The teaching process in the classroom and the teaching effect after the class, which requires breaking the original teaching quality evaluation pattern, getting close to the BE classroom teaching mode, collaborating on the relationship between before, during, and after the class, and realizing a multichannel and multi-faceted comprehensive evaluation. As shown in Table 1, we give the evaluation indicators of students' classroom learning effect. And, we further propose an improved DA-BP algorithm to evaluate the classroom teaching quality.

DA is a new type of swarm intelligence optimization algorithm proposed by MIRJALILI et al. It is an algorithm optimization process that searches both global and local at the same time by simulating the behavior of dragonfly swarm flight navigation, hunting and avoiding natural enemies to find the best hunting behavior. The movement of dragonfly colonies can be divided into the following five behaviors.

(1) Separation behavior, which refers to the separation between a single dragonfly and adjacent dragonflies, and its behavior expression is

$$S_i = -\sum_{j=1}^{N} \left(X - X_j\right). \tag{1}$$

Here, S_i is the separation degree of dragonfly i and adjacent dragonfly; X is the current position of dragonfly; X_j is the position of adjacent dragonfly j; N is the number of adjacent dragonfly.

(2) Alignment behavior, which means that the speed of a single dragonfly matches the adjacent dragonfly, and its behavior expression is

$$A_i = \frac{\sum_{j=1}^{N} V_j}{N}. \tag{2}$$

Here, A_i is the alignment of the dragonfly i with the adjacent dragonfly; V_j is the speed of the adjacent dragonfly.

(3) Cohesion behavior, which represents the collective gathering of a single dragonfly and neighboring dragonflies, and its behavioral expression is

$$C_i = \frac{\sum_{j=1}^{N} X_j}{N} - X. \tag{3}$$

Here, C_i is the cohesion degree of dragonfly i.

(4) Foraging behavior, refers to a single dragonfly looking for food, and its behavioral expression is

$$F_i = X^+ - X. \tag{4}$$

Here, F_i is the foraging ability of dragonfly i; X^+ is the location of food.

(5) Enemy avoidance behavior, which means that a single dragonfly avoids foreign enemies, and its behavioral expression is

$$E_i = X^- + X. \tag{5}$$

Here, E_i represents the ability of dragonfly i to avoid the enemy; X^- represents the location of the enemy.

The DA algorithm is the algorithm for updating the position of the dragonfly, and there are two situations.

The first type, when dragonflies have close neighbors, dragonflies can search for the flight direction ΔX and the air position X through the above five behaviors, and change the direction and position, and finally find the best result. $t = 1$ is the next generation of t. An expression whose position and orientation are iteratively updated:

$$X_{t+1} = X_t + \Delta X_{t+1}, \tag{6}$$

$$\Delta X_{t+1} = \left(sS_i, aA_i, cC_i, fF_i, eE_i\right) + \Delta w \Delta X_t. \tag{7}$$

Table 1: Evaluation index system of student learning effect of English flipped classroom in higher vocational universities.

Tier 1 indicators	Secondary indicators	Three-level indicators
*A*1: independent study before class (33%)	*B*1: task completion (44%)	*C*1: studying the learning materials provided by the teacher carefully (38%)
		*C*2: completion of precourse tasks (32%)
		*C*3: ability to obtain relevant resources (30%)
	*B*2: learning attitude (56%)	*C*4: active participation in group activities and willingness to communicate (51%)
		*C*5: active learning and problem identification (49%)
	*B*3: demonstration of learning outcomes (32%)	*C*6: active in sharing results and willing to express (47%)
		*C*7: use language accurately and fluently (53%)
*A*2: classroom communication and cooperation (36%)	*B*4: cooperation spirit (37%)	*C*8: cooperate and help others (52%)
		*C*9: clearly divide the work and perform their own duties (48%)
	*B*5: effectiveness of classroom learning (33%)	*C*10: participate actively in class discussions (45%)
		*C*11: able to internalize knowledge and skills (55%)
*A*3: post-class reflection (31%)	*B*6: task completion (27%)	*C*12: proactive in completing tasks (54%)
		*C*13: active in summarizing problems and shortcomings (46%)
	*B*7: effectiveness of learning (35%)	*C*14: improved overall English skills (35%)
		*C*15: improved intercultural communication awareness (35%)
		*C*16: improvement of creative ability (30%)
	*B*8: reflection on learning (38%)	*C*17: reasonable and fair self-assessment and mutual assessment (35%)
		*C*18: be able to sort out knowledge points and summarize skills (22%)
		*C*19: use teaching platform for personalized learning (43%)

Here, s is the separation weight; a is the alignment weight; c is the cohesion weight; f is the foraging factor; e is the natural enemy factor; Δw is the inertia weight.

The second type, dragonflies have no neighbors, and the $Levy/$ function is used to update the position of dragonflies to find the group. The $Levy/$ function expression is as follows:

$$Levy/(x) / = 0.01 \times r_1 \times \sigma \left| r_2 \right|^{\frac{1}{\beta}}, \tag{8}$$

$$\sigma = \left\lceil \tau(1+\beta) \times sin\frac{\pi\beta}{2} \right\rceil \left\lfloor \tau\left(\frac{1+\beta}{2}\right) \times \beta \times 2^{\left(\frac{\beta-1}{2}\right)} \right\rfloor^{\frac{1}{\beta}}. \tag{9}$$

Here, $\tau(x) = (x-1)!; \beta = 0.5$ is a constant; r_1, r_2 is a random number between 0 and 1. The mathematical expression of dragonfly position update is as follows:

$$\Delta X_{t+1} = X_t + Levy(d)\Delta X_t, \tag{10}$$

where d is the dimension.

It can be seen from the above that the DA algorithm has a good global search ability, which can help the BP neural network algorithm to optimize the weights and thresholds 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.

3.1. Evaluation of Business English Classroom Teaching Quality Based on DA-BP. BP neural network is a multilayer feedforward neural network composed of input layer, hidden layer, and output layer. If the input dimension and output dimension of the BP network are m and 1, respectively, and the number of hidden layers is P, then the BP neural network The mapping mathematical expression of the network is

$$x_{i+1} = f(X_i) = \frac{1}{1 + exp\left(-\sum_{j=1}^{p} c_j b_j + \varepsilon\right)} \; j = 1, 2, \ldots, p. \tag{11}$$

Here, f is the activation function of the hidden layer; ε is the threshold of the output layer; c_j, b_j is the connection weight from the hidden layer to the output layer, and the output of the hidden layer node.

Therefore, the output of the hidden layer node of the BP neural network can be expressed as

$$b_j = \frac{1}{1 + exp\left(-\sum_{i=1}^{m} w_{ij} x_i + \theta_j\right)} \; i = 1, 2, \ldots, m. \tag{12}$$

Here, w_{ij} is the connection weight from the input layer to the hidden layer; θ_j is the threshold of the hidden layer node.

Since the prediction result of BP neural network is easily affected by the initial connection weight of c_j, w_{ij} and the threshold of ε, θ_j, and it is easy to fall into the local

extreme value problem, this paper uses DA to optimize the initial connection weight and threshold of the BP neural network.

3.2. DA-BP Algorithm Flow. The algorithm flow of business English classroom teaching quality evaluation based on DA-BP can be summarized as follows:

Step 1. Initialize the BP neural network model and determine the network structure. Determine the number of layers of BP neural network, transfer function and training function type, and the number of nodes in each layer according to the data samples; read the quality evaluation data of business English classroom teaching, and preprocess the data to divide the data into training set and test set.

Step 2. Coding. The DA algorithm uses real number coding to encode the connection weight c_j, w_{ij} and the threshold ε, θ_j as a whole. The search space dimension of the algorithm is m. If the number of nodes in the input layer, hidden layer and output layer are R, S_1, S_2, respectively, the encoding length S can be expressed as follows:

$$S = RS + S_1S_2 + S_1 + S_2. \tag{13}$$

Step 3. DA algorithm parameter initialization: population size N, maximum number of iterations T.

Step 4. Randomly initialize the step size vector ΔX and randomly generate the initial position X of the dragonfly individual.

Step 5. Set the current number of iterations $t = 1$, input the training set into BP, calculate the fitness of all dragonfly individuals according to the fitness function formula (14), and sort and record the current optimal solution.

The mean square error is chosen as the fitness function, which is shown in the following equation:

$$fitness = \frac{1}{k}\sum_{i=1}^{k}\left(y_i - \hat{y}_i\right)^2. \tag{14}$$

Here, $y_i - \hat{y}_i$ is the actual output and expected output of the i nd sample, respectively; k is the number of samples [26].

Step 6. Update the food source position X^+ (the current optimal solution) and the natural enemy position X (the current worst solution), and update the 5 behavioral weights s, a, c, f, e and the inertia weight training.

Step 7. Update S, A, C, E, and F according to formulas (3)–(7).

Step 8. Update the step vector and the position vector according to formulas (8) and formula (9).

Step 9. If the number of iterations $f > T$, save the optimal connection weight c_j, w_{ij} and the threshold ε, θ_j; otherwise, $t = t + 1$, return to Step 5.

Step 10. Take the connection weight c_j, w_{ij} and the threshold ε, θ_j corresponding to the optimal solution as the initial connection weight and threshold of the BP neural network, train the BP neural network, and make predictions.

4. Experiments

4.1. Data Set. Combined with references and teaching experience, the AHP structure model of business English classroom teaching quality evaluation is constructed by using the analytic hierarchy process, as shown in Figure 1.

The teaching quality evaluation indicators in Table 2 are constructed according to two comparison methods.

4.2. Evaluation Indicators. In order to test the quality evaluation results of business English classroom teaching in colleges and universities, the evaluation indicators are selected root mean square error (Root Mean Square Error, RMSE) and correlation coefficient R, and the evaluation indicators are formulas (15) and (16).

$$RMSE = \sqrt{\frac{1}{n}\sum_{k=1}^{n}\left(x_k - \hat{x}\right)^2}, \tag{15}$$

$$R = \frac{\sum_{k=1}^{n} x_k \hat{x}_k}{\sqrt{\sum_{k=1}^{n} x_k^2}\sqrt{\sum_{k=1}^{n} \hat{x}_k^2}}. \tag{16}$$

Among them, $x_k, \hat{x}_k$ represents the actual value and predicted value of the k nd sample; n lines represent the number of sample sets; RMSE is mainly used to measure the degree of dispersion of the model; R is mainly used to describe the degree of correlation between the predicted value and the actual value, R of The closer the absolute value is to 1, the higher the correlation between the predicted value and the actual value.

4.3. Results. According to the literature, the quality of business English classroom teaching is divided into 5 grades, namely, very good, good, average, poor, and very poor. The evaluation grades are shown in Table 3.

The collected data is scored by experts, and a total of lo groups of data are obtained. The data are divided into two parts. The first six groups of data are used as training sets to establish the DA-BP business English classroom teaching evaluation model; the last four groups of data are used as test sets to test the DA-BP business English classroom teaching evaluation model. correctness. DA algorithm parameters; dragonfly population size N-10, maximum iteration number T-100, DA-BP model business English classroom teaching evaluation results are shown in Figure 2.

In order to verify the accuracy and effectiveness of the DA-BP model, DA-BP is compared with GA-BP, PSO-BP, and BP. Population size $N = 10$, learning factor, search interval [−1, 1]. Genetic algorithm (Genetic Algorithm, GA) algorithm parameters: population size $N = 10$, maximum

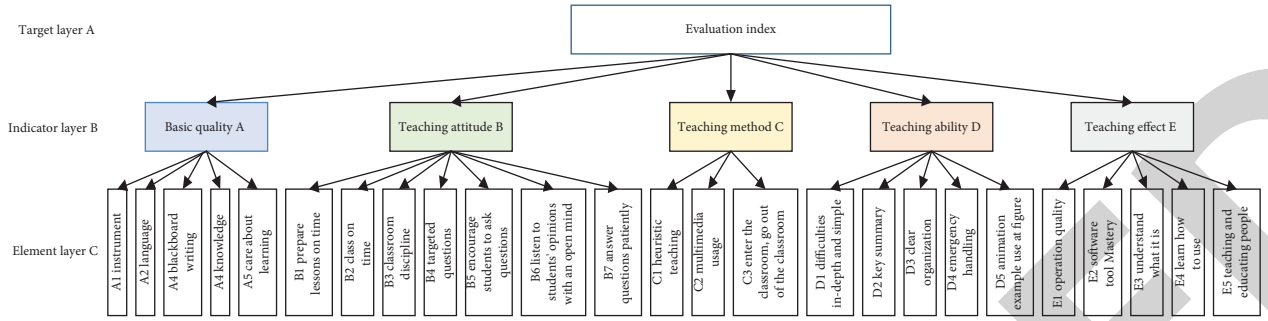

Figure 1: BE classroom teaching quality measure index.

Table 2: Scores of evaluation indicators of ideological and political teaching quality.

Index serial number	12	13	14	15	16	17	18	19	20	21
1	0.0255	0.0328	0.0455	0.0575	0.05	0.0608	0.0974	0.1065	0.1353	0.1467
2	0.1149	0.1218	0.1496	0.1694	0.1488	0.132	0.1795	0.1694	0.2058	0.2113
3	0.1658	0.1755	0.1796	0.1832	0.1895	0.1966	0.1977	0.2431	0.2543	0.2866
4	0.1622	0.1851	0.1956	0.1977	0.2044	0.2044	0.2473	0.2536	0.2611	0.2601
5	0.2194	0.2395	0.2155	0.1881	0.1662	0.1555	0.1572	0.1572	0.2778	0.2868
6	0.0485	0.0485	0.0534	0.0728	0.103	0.1068	0.1313	0.1563	0.1845	0.1894
7	0.0361	0.0373	0.0427	0.0553	0.0808	0.1097	0.1388	0.1598	0.1758	0.2182
8	0.0565	0.0556	0.0543	0.0687	0.084	0.0916	0.1034	0.1026	0.1132	0.1163
9	0.0336	0.052	0.0741	0.0702	0.0661	0.0756	0.0925	0.0944	0.0898	0.1025
...	...	...	...	...	...	...	...	...	...	...
24	0.05	0.0747	0.0605	0.0584	0.0612	0.0586	0.0584	0.0833	0.1115	0.1455
25	0.1097	0.1311	0.1212	0.1028	0.0425	0.0467	0.0602	0.072	0.0894	0.1137
26	0.013	0.0155	0.0237	0.0237	0.0357	0.0385	0.0517	0.0655	0.0877	0.1156

Table 3: Classification of evaluation grades.

Corresponding score	Evaluation results
(4.3, 6)	Very good
(3.5, 4.1)	Better
(2.5, 3.5)	Generally
(1.9, 2.5)	Poor
(1, 1.7)	Very bad

number of iterations = 100, crossover probability $P_c = 0.7$, mutation probability $P_m = 0.1$; BP neural network parameters are set as follows: input layer nodes inputnum = 25, hidden layer nodes The number hiddennum = 50 and the number of output layer nodes outputnum = 1, the maximum training times of the BP neural network is 1000, the transfer functions of the hidden layer and the output layer are logsig and puretin, the training function is trainlm, and the learning rate is 0.01. The comparison results of different algorithms are as follows shown in Figure 3 and Table 4.

As shown in Figures 3 and 4: (1) in the general education English level assessment, Improved DA-BP scores were higher than others. BP has the smallest mean square error and the largest correlation coefficient r, which shows that the Improved DA-BP Business English learning evaluation model is most relevant, and the effect prediction is the best; (2) The evaluation accuracy of DA-BP, GA-BP, and PSO-BP is higher than BP. In the PSO-BP algorithm, the pace factor $C_1 = C_2 = 1.86$, initial and maximum inertia weights are set to $W_{in} = 0.8, W_{\max} = 0.4$ and maximum velocity $V_{\max} = 0.6$, respectively. The standard BP algorithm was used. In order to

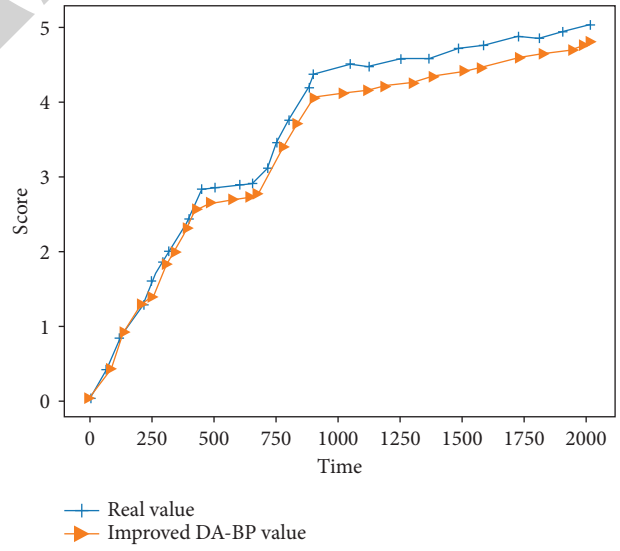

Figure 2: DA-BP business English teaching quality evaluation results.

accurately reflect the speed of the three algorithms, the mean square error (MSE) convergence trend of the three algorithms during the operation is compared, as shown in Figure 4.

Because BP is prone to improper initialization weights and thresholds when there is no other algorithm optimization, which will greatly reduce the speed of the BP algorithm. Whether it is PSO optimization or Improved-DA

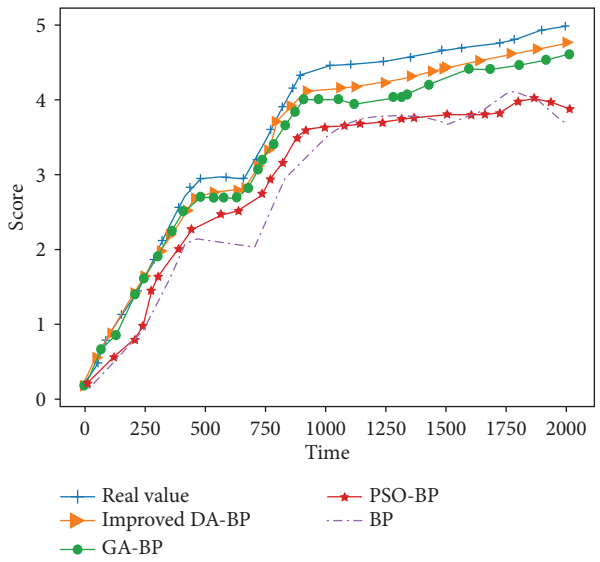

Figure 3: Evaluation results of ideological and political teaching quality with different algorithms.

Table 4: Comparison of evaluation results of different algorithms.

Method	Training		Test	
	RMSE	R	RMSE	R
DA-BP	0.0088	0.9955	0.0372	0.9892
GA-BP	0.0163	0.9777	0.0381	0.9732
POS-BP	0.0157	0.9774	0.0448	0.9652
BP	0.0187	0.9663	0.0483	0.9445

optimization, their purpose is to select the global optimal weights and thresholds, to improve efficiency while avoiding local minima. Improved-DA-BP algorithm than PSO-BP algorithm, the mean square error is smaller, because Improved-DA convergence accuracy and search ability are higher than PSO-BP algorithm, and PSO-BP algorithm there is premature convergence.

Finally, three algorithms are used to teach BE in the classroom, and the comparison between the prediction accuracy and the MSE calculated during the period is shown in Table 5.

4.4. Countermeasures and Suggestions Based on Teaching Evaluation. The recognition degree and distribution characteristics of the teachers' group for the teaching quality evaluation system in this paper are shown in Figure 5. It can be seen that the vast majority of teachers recognize the teaching evaluation model in this paper.

Through DA-BP course evaluation, it is of great help to improve the quality of business English classroom teaching, so the following countermeasures and suggestions are put forward: (1) strengthen the attention of university leaders and increase supervision; (2) innovate and improve teaching models and teaching methods; (3) fully motivate the main body of students; (4) strengthen student guidance according to the actual situation; (5) clarify the purpose, evaluation

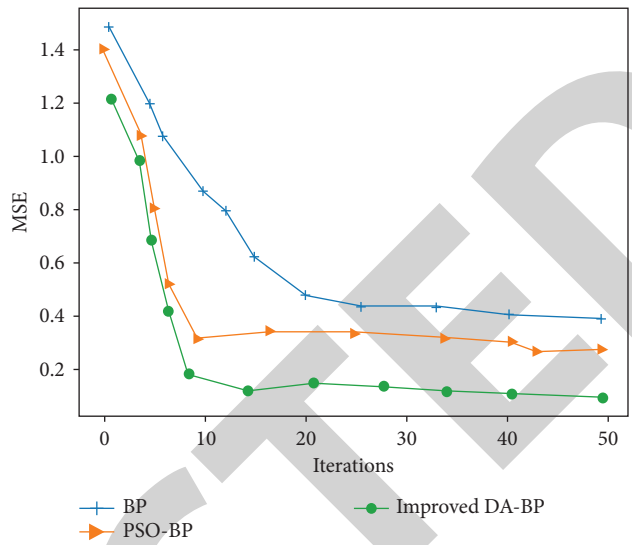

Figure 4: Comparison of MSE convergence of the three algorithms.

Table 5: Comparison of the accuracy and the best MSE of the three algorithms.

Parameter	Algorithm		
	EIDA-BP algorithm	PSO-BP algorithm	BP algorithm
Best MSE	0.0164	0.0188	0.0226
Accuracy (%)	98.2	94.5	88.1

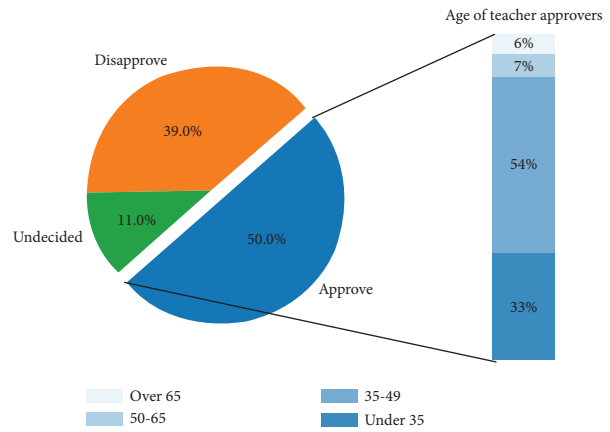

Figure 5: Teachers' recognition of this teaching quality evaluation system.

index and evaluation of teaching evaluation; (6) strengthen case teaching to improve students' comprehension and perception.

5. Conclusion

In order to improve the evaluation accuracy of business English classroom teaching quality, this paper proposes a business English classroom teaching quality evaluation method based on DA-BP. Based on the analytic hierarchy

process to construct the evaluation index system of business English classroom teaching quality, the 25 evaluation index scores that affect the quality of business English teaching in colleges and universities are taken as the input of DA-BP, and the comprehensive score of business English teaching quality in colleges and universities is taken as the output of DA-BP. The research results show that, compared with GA-BP, PS-BP, and BP, DA-BP can effectively improve the evaluation accuracy of business English classroom teaching quality and provide a new method and approach for business English classroom teaching quality evaluation.

Data Availability

The raw data supporting the conclusions of this article will be made available by the author upon request.

Conflicts of Interest

The author declares that there are no conflicts of interest regarding this work.

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