

Retraction

Retracted: College English Audio-Visual-Oral Teaching Mode from the Perspective of Artificial Intelligence

Advances in Multimedia

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This article has been retracted by Hindawi following an investigation undertaken by the publisher [1].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] L. Ling, "College English Audio-Visual-Oral Teaching Mode from the Perspective of Artificial Intelligence," *Advances in Multimedia*, vol. 2022, Article ID 4842139, 9 pages, 2022.

Research Article

College English Audio-Visual-Oral Teaching Mode from the Perspective of Artificial Intelligence

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The “New Era Artificial Brain Power Improvement Plan” issued by the State Council and the “Computer Reasoning Development Activity Plan for Colleges and Universities” issued by the Ministry of Education clearly pointed out that it is necessary to attach importance to the combination of modern education and artificial intelligence. As a global language, English is becoming more and more important in global trade. Under the premise of educational plan changes in the new environment, English teaching is gradually reflected in the cultivation of college students’ English application ability. This research studies the current college English audio-visual-oral teaching mode from the perspective of artificial intelligence and analyzes the current situation of traditional English teaching by explaining the meaning of artificial intelligence, which mainly includes four stages: literature research, model construction, empirical research, and result analysis. In light of BP neural network, the showing assessment model of school English audio-visual-oral is laid out, and the change technique of showing method of school English audio-visual-oral under AI is advanced. Experiments show that this model achieves better teaching quality than the models constructed by traditional GA algorithm and BSA algorithm and is more suitable for promotion in college English teaching.

1. Introduction

Under the historical background of the continuous development of modern computer technology, the rapid progress of artificial intelligence has had a significant impact on all fields of society, and it has also brought opportunities and challenges to the reform of English education in colleges and universities [1, 2]. AI technology has made major breakthroughs in China’s education field, gradually changing human thinking forms and traditional ideas, optimizing human knowledge and education. In the history of China’s education development, new technology has provided a huge driving force for educational reform, making educational work more efficient and effective, and education has gradually achieved fairness, justice, and popularization. Educational software with AI can not only see, listen, speak, and learn like human beings but also understand and respond to various emotions of the audience [3, 4], so that the audience can naturally communicate with the computer according to language, action, text, and expression and truly achieve human-computer interaction. Specifically, with the deepening

of educating reform, the progress of science, AI has been widely used in China’s teaching field and has a very far-reaching impact on teaching concepts, educational processes, and educational management. For example, Saybot introduced a talking robot to communicate with students. Saybot’s service is to keep students in touch with robots until they speak. As a special computer technology simulating human knowledge, AI has the ability of perception, thinking, learning, and behavior. Perception is the most basic feature of AI. This kind of machine perception not only requires intelligent machines to have the perception ability similar to human beings but also can experience the external world according to various sensory systems such as vision and hearing, and the thinking ability is a system with a corresponding degree of intelligence. It can not only memorize and store the external information mastered by the senses of the intelligent system but also implement the thoughtful integration of various external information according to its own internal information data.

At present, the university English instructing mode in China commonly focuses on the authenticity of the language

environment, the convenience of learning, and the interactivity of the process. English is a necessary foreign language for college students. To be proficient in using English for communication and exchange, the creation of a real language environment is essential. Audio-visual-oral teaching mode takes “seeing” as the starting point and uses animation, images, sounds, words, etc. Combining the shape and sound, emotion, and scene of the relevant learning courses, it creates a multidimensional and real language environment for students, successfully stimulates students’ interest in learning, and allows college students to actively participate in English education. In order to better participate in this situational communication, students must combine the relevant practical situations, use their knowledge of English, and complete the corresponding tasks. This process is the “meaning construction” of English knowledge and skills for students, which can enable students to gradually master English application skills in the real language environment, so that they can use English appropriately and flexibly for communication. There is a close relationship between language and culture. Understanding the culture behind language is conducive to promoting the smooth progress of language communication. In a non-English environment, if students are taught only English, it is difficult for them to understand the cultural background. The audio-visual-oral teaching mode takes vision as the starting point, supplemented by hearing, to show students the culture behind English from multiple angles and directions [5, 6]. At the same time, students can also understand the nonverbal communication and background of different cultures through visual experience, such as gestures, expressions, and gestures. Students can be more realistic through the double stimulation of sight and sound, concretely and comprehensively understand English culture, which is very conducive to cultivating students’ perception of foreign culture, to help students internalize their English knowledge, structure a true cross-cultural conversation awareness, and enhance their cross-cultural verbal exchange capability.

The purpose of college English audio-visual-oral teaching is not only to let students understand what others say; at the same time, students can learn to communicate in English and improve students’ English communicative ability. However, students’ English communication ability is based on their English language ability. According to constructivist theory, the improvement of students’ language ability needs to be established in a certain situation, with the help of others, and at the same time, with some necessary learning materials, through personal practice. This means that students have to interact with others in the procedure of mastering English, continuously improve their English skills by learning from others’ experience. Audio-visual-oral teaching mode is as said by multimedia, AI, and other technologies. English audio-visual-oral education mode introduces modern intelligent education system and intelligent reading system; creates an intelligent, rapid, comprehensive, and effective teaching analysis system; provides more intelligent and personalized educational content and auxiliary educational tools for the implementation of school educational activities; and effectively improves the ability of

serving teachers to apply modern artificial intelligence technology to implement English education. Its teaching form is novel, and its teaching content is rich. It can realize the multi-angle interaction between learners and learners, learners and teachers, and even learners and computers, so that students have more practical opportunities. These practices can not only test the effect of students’ audio-visual-oral activities but also improve students’ language communication ability; it is a significant method for developing under-studies’ English open ability.

This study analyzes the evaluation scheme of university English language audio-visual-oral teaching by utilizing BP neural network. In the meantime, this paper evaluates the quality of English teaching by neural network and puts forward the reform strategy of the teaching mode of English discourse in universities under the AI. This study will explain the research process of university English language audio-visual-oral teaching mode from five aspects. The first section introduces the significance of the research on the teaching mode of audio-visual-oral English in universities from the angle of AI. The second part analyzes and introduces the status quo of college English audio-visual oral theory teaching mode. The third part is the evaluation scheme of English audio-visual oral teaching based on BP neural network analysis. The fourth section carries on model comparison and the experiment analysis. In Section 5, the whole article is analyzed and summarized, and the future research direction is prospected.

2. Related Work

At present, many educators have been studying how to establish and perfect a purpose and scientific English teaching quality scheme. The so-called knowledge-based language refers to the equivalence of language and fixed knowledge system, or a constant result inferred according to a specific logical thinking. In other words, the language is divided into vocabulary, grammar, sentence patterns, and other plates for students to memorize. Combined output according to the classification of knowledge will certainly bring the inevitable result of knowledge output, resulting in dot or flake refinement in the process of English speaking and writing. In fact, most modern students have only significantly improved their reading ability, and other skills, especially output skills, have stagnated for a long time after entering the campus, stagnating at the level of life expression for a long time. There is a lack of due connection between English teaching and learning in schools and the professional needs of modern students. Most students regard English courses, English majors, and personal ideas as individuals that are difficult to create connections and lack the ability to use English to express professional knowledge and personal understanding. In terms of output results, after a period of English knowledge learning, students still have many significant problems in English speaking and writing skills, such as content living and language localization in China. Modern English teaching puts forward learning requirements for students’ language knowledge content, even from shallow to deep, while the life language expression is only stagnant at the bottom.

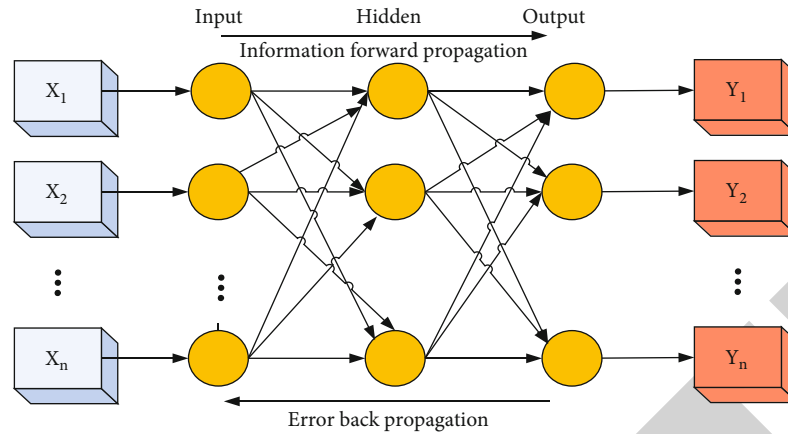


FIGURE 1: Topological structure of BP neural network.

If the students stay at the level of life expression for a long time, they will develop a thinking pattern or a fixed expression habit and then lack the desire and courage to break the fixed pattern at the psychological level, as well as the corresponding driving force for leapfrog development in behavior.

In the past, English classroom relies on teaching courseware, video, modern new media, and other auxiliary educational tools. Even if it can strengthen the amount of educational information in the classroom at a fixed time and improve the perceived effect, it also restricts the initiative of teaching and learning to a certain extent. Secondly, teachers and learners still regard the classroom as the main formal place for teaching and learning. With the rapid development of Internet and AI technology, classroom formatting may lead to the loss of wider development space for English teaching and learning. The existing AI English teaching models are mostly constructed by intelligent software systems, including intelligent speech dialogue robots, speech recognition, intelligent translation, and other software. However, there is no relatively mature technology to support, and there are shortcomings such as poor interaction experience and low recognition rate. Nowadays, many schools in China are reducing the actual classroom teaching hours in talent cultivation programs. If you want to complete the teaching and learning of school English listening, speaking, reading, and writing and comprehensive ability, it is difficult to rely on a fixed number of hours, and some students will pursue higher-level English learning needs. To guarantee the high quality of teaching, university English language audio-visual-oral teaching has already been widely developed in distinct forms in various parts of the state and plays a continuously significant and youthful part in the teaching method. The evaluation of teaching quality in higher education is a nonlinear classification problem; the result of which is influenced by the interaction of several factors. Therefore, when constructing the evaluation entity of teaching quality, the vast majority of fundamental factors which can straight mediate the high quality of teaching should be chosen as the evaluation content. Notwithstanding, there are a lot of several differences in evaluation contents and methods because of the distinct degrees of knowledge and attention to teaching high quality in universities.

At present, there are various methods for evaluating teaching quality in colleges and universities, for example, expert evaluation [7], fuzzy comprehensive evaluation [8], and neural network model [9]. And these methods have their own characteristics in the evaluation. Expert evaluation method is a qualitative description and quantitative method. Firstly, several evaluation items are selected according to the specific requirements of the evaluation object, and evaluation standards are formulated according to the evaluation items. Several representative experts are hired to give the evaluation scores of each item according to this evaluation standard based on their own experience and draw conclusions. Fuzzy comprehensive evaluation method is a comprehensive evaluation method based on fuzzy mathematics. The comprehensive evaluation method converts qualitative evaluation into quantitative evaluation according to the membership theory of fuzzy mathematics; that is, fuzzy mathematics is used to make an overall evaluation of things or objects restricted by many factors. It has the characteristics of clear results and strong systematicness. It can better solve fuzzy and difficult to quantify problems and is suitable for solving all kinds of uncertain problems. Literature [10] adopted that BP neural network is used to construct the college English teaching mode in the new era, and the teaching quality is effectively evaluated. This method has strong self-learning and self-adaptive ability, and the generalization ability is also good. Even if the system is damaged locally, it can still work normally; that is, BP neural network has a certain fault tolerance. However, the convergence speed of the network is slow, and the training period is long. Literature [11] proposed to use the optimized BP algorithm in the construction of teaching model. The experimental results show that the teaching model established by the optimized BP algorithm has faster adaptability and higher educational feedback in the actual teaching process and has a good development prospect. This method uses neural network to predict teaching quality evaluation and has the following advantages: good nonlinear mapping approximation ability and generalization ability, strong data processing ability, and fast model establishment. Geng et al. combine the analytic hierarchy process and NN methods and use the advantages and characteristics of the two methods to continuously iterate and screen in the process of teaching experiments to obtain the optimal

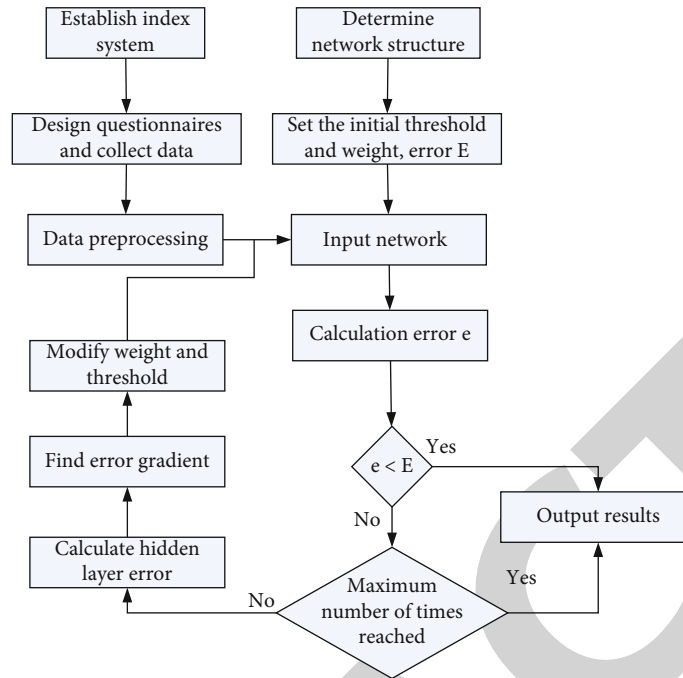


FIGURE 2: Teaching mode of audio-visual-oral theory of college English based on BP neural network.

AHP-BPNN teaching model [12]. Analytic hierarchy process regards the research object as a system and makes decisions according to the thinking mode of decomposition, comparative judgment, and synthesis. It has become an important tool of system analysis developed after mechanism analysis and statistical analysis. The quantitative data of this method is few, so it can not provide a new scheme for decision-making. Hamdi et al. optimized the neural network through particle swarm optimization algorithm, obtain the global optimal network parameters, and establish a comprehensive evaluation model of college teachers' teaching quality [13]. Similar to genetic algorithm, PSO is an optimization algorithm based on iteration, which is simple and easy to implement, and there are not many parameters to be adjusted. However, the coding of network weights and the selection of genetic operators are sometimes troublesome.

In conclusion, the analysis and discussion on the teaching mode of college English audio-visual teaching combined with AI technology can help students improve the experience of learning English knowledge, improve the effectiveness of students' comprehensive English ability learning, and greatly enhance the high-quality English education.

3. Research on the Teaching Mode of English Audio-Visual Teaching in Colleges and Universities from the Perspective of AI

Combining with AI, it is the key to embody the high quality of teaching in universities to carry out the teaching of English audio-visual-oral theory objectively and accurately. We need to observe and practice educational activities, that is, summarize and integrate all parts of the English teaching process, extract the content that can be used as evaluation indicators, and analyze, process, and screen them before we

can formulate a practical college English audio-visual-oral teaching mode. Compared with the traditional classroom, the combination of AI will increase the complexity of the curriculum evaluation index system. Therefore, when formulating the corresponding evaluation system, on the basis of following the principles of constructing the evaluation index system, we must also consider the relevant influencing factors and other issues. For example, the subject and object of educational evaluation, the relationship between the subject and object of vocational education evaluation in the new era, and the construction of the relationship between the elements of vocational education evaluation in the new era need to be taken into account. Only on this basis can the evaluation index extracted be targeted and the evaluation index system formulated be more accurate and scientific; the established teaching mode can play its due role.

3.1. Principles of Constructing University English Audio-Visual-Oral Education Model from the Perspective of AI. Teaching evaluation is a valuable component of English teaching mode based on AI. It can not only provide guidance for the specific implementation and improvement of teaching but additionally encourage the advancement of English language teaching to some extent in the lengthy run. When constructing the teaching evaluation index system, we must follow certain principles; this step is also the basic requirement of evaluation. To ensure the reasonableness of evaluation indicators and the reliability of evaluation results, the evaluation index system of English audio-visual-oral teaching quality formulated in this paper should follow the following basic principles.

3.1.1. The Principle of Giving Consideration to Both Online and Offline. The process of teaching English audio-visual

TABLE 1: Comparison of actual evaluation results and BP simulation evaluation results.

Test sample	Actual results	Test result	Error	Relative error
1	97.5	93.97	3.53	0.04
2	90.5	94.12	3.62	0.04
3	90	95.38	5.38	0.06
4	91	77.55	13.45	0.15
5	85.5	97.19	11.69	0.13
6	86.5	77.31	9.19	0.11
7	90	93.67	3.67	0.04
8	93.5	93.66	0.16	0.01
9	83	82.34	0.66	0.01
10	98	93.62	4.38	0.04
11	71	77.62	6.62	0.09
12	90	92.59	2.59	0.03
13	92	97.47	5.47	0.06
14	81.5	78.10	3.4	0.04
15	74	77.52	3.52	0.05

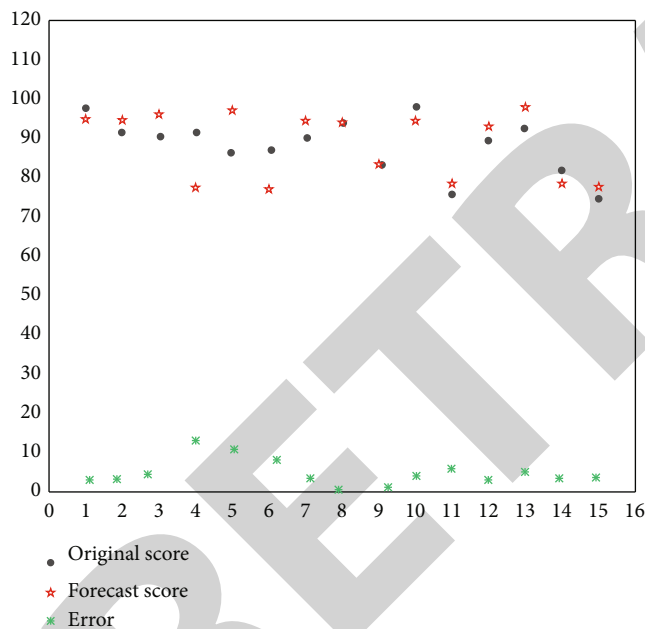


FIGURE 3: Evaluation results of BP neural network.

spoken English from the perspective of AI includes online autonomous learning and offline face-to-face learning. Schools should take advantage of each other to enhance the high quality of teaching when implementing mixed teaching in specific courses. Teachers should guide students in the teaching process and help them adapt to this new teaching method as quickly as possible. We should give consideration to both online and offline; while students adapt to the online part, they should reasonably carry out offline classroom teaching, urge students, and guide students. Therefore, when selecting teaching evaluation indicators, only by taking both into account can we comprehensively evaluate the teaching quality.

3.1.2. *The Principle of Giving Consideration to Both Process and Result.* Teaching results are the ultimate embodiment of teaching quality. Therefore, when making teaching evaluation, we often fall into the misunderstanding of “referring to teaching quality by students’ examination results.” However, the factors of teaching quality are all over all links of the teaching process, and the process leads to results; in particular, the factors that affect the teaching process are more and more complex. Therefore, the evaluation indicators of teaching must cover the teaching process (such as students’ online and offline specific learning behavior and learning quality) and teaching results, that is, taking into account the process evaluation and result evaluation.

3.1.3. *The Principle of Giving Consideration to Both Teachers and Students.* In the current AI environment, teacher-student interaction is an essential teaching activity under the current teaching mode. In teaching, teachers should also be proficient in using various network platforms, especially the combination of platform guidance and teaching process. On the other hand, as one of the main bodies of teaching, whether students adapt to this mode, whether students’ initiative and enthusiasm can be improved will directly affect the teaching quality. Therefore, when determining the evaluation index of English audio-visual-oral teaching quality, we must take into account the influence of teachers and learners on the teaching high quality.

3.2. *Establishment of College English Audio-Visual-Oral Teaching Mode Based on BP Neural Network.* BP neural network can search for the linear and nonlinear laws between information from a large number of complex information. It is a neural network version with healthy nonlinear mapping ability. In view of the problems existing in modern English education mode, combined with the advantages of BP neural network, it can simulate and analyze the ways in which students are interested in accepting English and the channels of dialogue and communication. As said by these functioning of BP network, this note utilizes BP neural network to survey the teaching mode of audio-visual-oral English language in universities, tries to get rid of the intrusion of human factors, and sets up teaching mode and excellent teaching high-quality scheme of college English language combined with AI technology.

3.2.1. *Model Structure Design.* The typical BP neural network has a three-layer network structure, which is input layer, hidden layer, and output layer. In the process of network training, the number of neurons in each layer and the number of hidden layers need to be adjusted and determined according to reality [14, 15]. The exact network structure can decrease the number of network training and enhance the accuracy of network acquisition. In contemporary English language audio-visual-oral teaching model, the teaching index price is the input assessment of BP neural network, and the teaching evaluation outcome is the output rate. If there are a lot of sufficient samples to train, let the network exact the necessary weight and later foretell the high quality of teaching as said by the

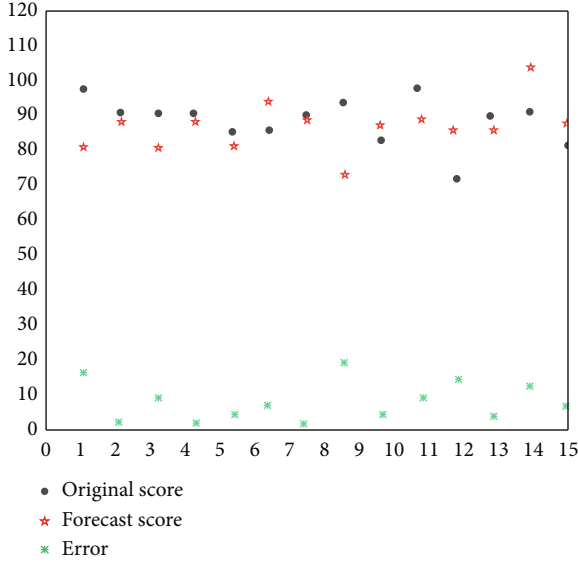


FIGURE 4: GA evaluation results.

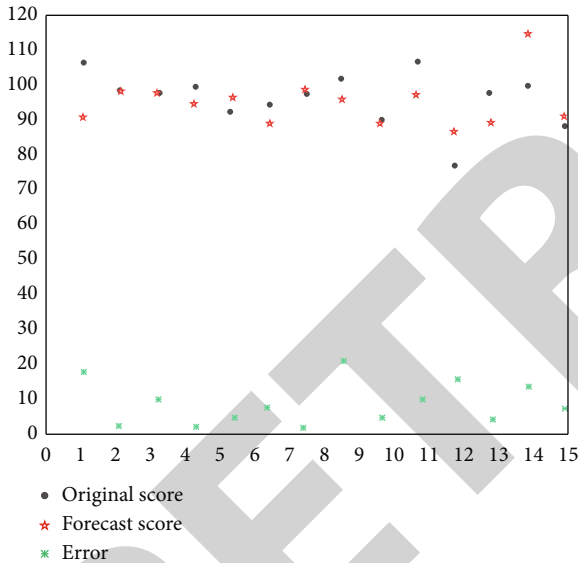


FIGURE 5: BSA evaluation results.

sample data. The specific network construction steps are as follows.

BP neural network is trained according to the principle of error back propagation, which is one of the main characteristics of multilayer feedforward neural network model. The basic idea is to adjust the weight and threshold in the model by gradient descent method and error inverse propagation method in order to get the minimum training fault. Figure 1 shows the topology of the three-layer BP neural network.

The training procedure of BP neural network is composed of two steps: the initial step is the send propagation of information. The samples are input into the network over the input layer for training and later processed over the hidden layer and output from the output layer. If the error between the output worth and the expected cost is big at this

time, begin the second part, namely, the backside propagation of the error. The second step is to feed back the error to the input layer through the hidden layer. Iterate step 1 and step 2 until the output error of the network arrives the previously set range or arrives the predetermined network acquiring time [16, 17].

3.2.2. BP Algorithm. Taking the simplest three-layer BP neural network algorithm as an example, assume that its network structure is as follows: there are n neurons in the input layer, p neurons in the hidden layer, and q neurons in the output layer; the variable defined in the algorithm learning process includes the following:

- (1) Input layer input vector: $x = (x_1, x_2, \dots, x_n)$
- (2) Hidden layer input vector: $hi = (hi_1, hi_2, \dots, hi_p)$
- (3) Hidden layer output vector: $ho = (ho_1, ho_2, \dots, ho_p)$
- (4) Output layer input vector: $yi = (yi_1, yi_2, \dots, yi_q)$
- (5) Output layer output vector: $yo = (yo_1, yo_2, \dots, yo_q)$
- (6) Expected output vector: $d = (d_1, d_2, \dots, d_q)$

Set w_{ih} as the connection weight between the input layer and the hidden layer, and the weight between the hidden layer and the output layer is recorded as w_{ho} ; the thresholds of each neuron in the hidden layer and the output layer are b_h and b_o , respectively. The number of sample data is $k = 1, 2, 3, \dots, m$. The activation function is sigmoid function. Formula (1) is the error function.

$$e = \frac{1}{2} \sum_{o=1}^q do(k) - yo(k))^2. \quad (1)$$

The learning process of BP neural network is as follows:

Step 1. Initialize the network, assign random numbers in the interval $(-1, 1)$ to each connection weight, then set the error function e , and calculate the accuracy value and the maximum learning times M .

Step 2. Randomly choose the k input sample and the corresponding expected output, as shown in

$$x(k) = (x1(k), (x2(k), \dots, xn(k)), \quad (2)$$

$$do(k) = (d1(k), (d2(k), \dots, dq(k)). \quad (3)$$

Step 3. Calculate the input and output of neurons in the hidden layer and output layer by accumulation, as shown in

$$hih(k) = \sum_{i=1}^n wihxi(k) - bh, \quad h = 1, 2, \dots, p, \quad (4)$$

$$hoh(k) = f(hih(k)), \quad h = 1, 2, \dots, p, \quad (5)$$

TABLE 2: Comparison of models.

Sample label	GA	BSA	BP	Actual results
1	81.04	82.28	93.97	97.5
2	88.29	90.71	94.12	90.5
3	80.50	89.62	95	90
4	89.02	86.26	78	91
5	81.49	89.88	97.19	85.5
6	94.07	80.51	77	86.5
7	88.98	90.93	94	90
8	73.52	87.38	94	93.5
9	87.30	81.45	82	83
10	89.19	90.06	94	98
11	85.72	78.87	78	71
12	86.57	81.54	93	90
13	104.58	104.84	97.47	92
14	88.09	83.32	78.10	81.5
15	80.41	75.48	78	74

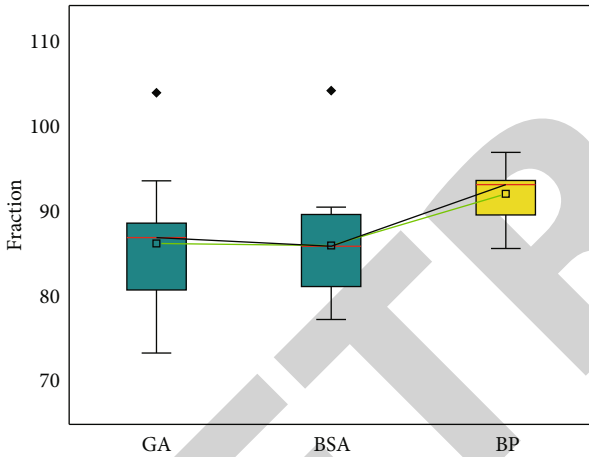


FIGURE 6: The box diagram of evaluation result.

$$y_{io}(k) = \sum_{h=1}^p w_{hoh}(k) - b_o, \quad o = 1, 2, \dots, q, \quad (6)$$

$$y_{oo}(k) = f(y_{io}(k)), \quad o = 1, 2, \dots, q. \quad (7)$$

Step 4. Calculate the partial derivative of the error function to the weight of the output layer $\delta_o(k)$:

$$\delta_o(k) = (d_o(k) - y_{oo}(k))f'(y_{io}(k)). \quad (8)$$

Step 5. Calculate the partial derivative of the error function to the weight of the hidden layer $\delta_h(k)$:

$$\delta_h(k) = - \left(\sum_{o=0}^q \delta_o(k) w_{ho} \right) f'(h_h(k)). \quad (9)$$

Step 6. The $\delta_o(k)$ calculated above and the output of the hid-

den layer are used to correct the connection weight $w_{ho}(k)$ and threshold 3 in this step, where N is before the correction, $N + 1$ is after the correction, η is the corrected learning step, and the value range is (0, 1). The corrected weight and threshold are as follows:

$$w_{ho}^{N+1}(k) = w_{ho}^N(k) + \eta \delta_o(k) h_{oh}(k), \quad (10)$$

$$b_o^{N+1}(k) = b_o^N(k) + \eta \delta_o(k). \quad (11)$$

Step 7. Calculate the global error E :

$$E = \frac{1}{2m} \sum_{k=1}^m \sum_{o=1}^q (d_o(k) - y_{oo}(k))^2. \quad (12)$$

Step 8. Judge whether the error meets $E < \epsilon$. When the error reaches the set accuracy or the number of learning times is greater than the maximum M , the algorithm terminates. Otherwise, go ahead and select the next example and go back to Step 3 for the next round.

According to the above steps, the college English audio-visual-oral education model based on BP neural network is established, as shown in Figure 2.

4. Network Training and Experimental Analysis

Sample plays a key component of part in the growth of English language teaching evaluation model. The high-quality selection of samples is directly related to the training results of neural network and the scientificity of model establishment. This study is based on an experiment of college English education in a university. In this semester, 85 groups of sample data were obtained after preprocessing the data generated during the implementation of English audio-visual-oral combined with AI technology. 70 samples are chosen as the training set, and use the remaining 15 samples as the test set. The samples of the test set are input into BP neural network for training, the trained network is tested, and the results are analyzed.

From the network training results (Table 1), the average error is 5.16, and the relative error is 0.06. The prediction results of the test set are shown in Figure 3.

In order to better present the effect of the college English education model, this section also uses the original GA (genetic algorithm) [18, 19] and BSA (backtracking search optimization algorithm) [20, 21] foretell similar 15 groups of test set information in the sample information for comparative analysis. The evaluation outcomes of GA and BSA are displayed in Figures 4 and 5.

Genetic algorithm is a search heuristic algorithm that imitates the process of natural selection. In the field of artificial intelligence, it is usually used to solve optimization and classification problems. It has the ability of parallel search and strong robustness. BSA is a metaheuristic method. Its structure is simple, effective, and fast. It can solve multimodal problems and is easy to adapt to different numerical optimization problems. Though evolutionary algorithmic program (GA

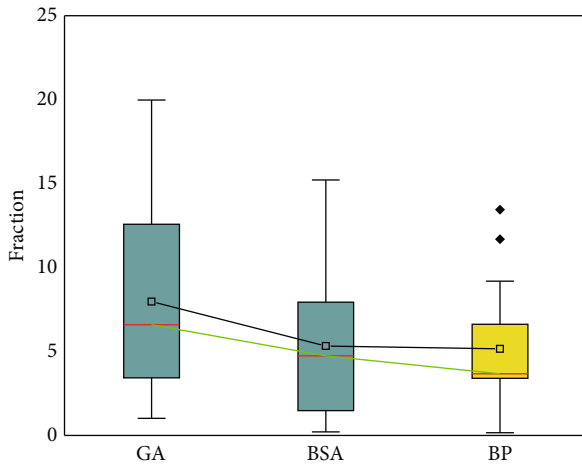


FIGURE 7: The box diagram of error.

and BSA) can build prediction outcomes as said by learner performance, 15 groups of evaluation data showed that GA and BSA scores fluctuated widely, in some cases beyond students' grades normal rating range (100 points). The algorithm based on deep learning can predict students' grades within the score range. Table 2 compares data from the last 15 test samples of the BP neural network evaluation model with GA and BSA. From the information in the table, it can be seen that the evaluation results of GA algorithm and BSA algorithm are more error than those of BP neural network model, and the error is the smallest compared with the other two; this outcome is more apparent when the evaluation outcomes and error are furious into box charts for comparison, as shown in Figures 6 and 7.

As can be seen from the above box chart, the evaluation outcomes of GA algorithm and BSA algorithm fluctuate widely, extreme data appear, and the error of BP network version is controlled within a fair range, and the greatest fault is not over 8 points. The implementation of GA designs many parameters, such as crossover rate and mutation rate, and the selection of these parameters seriously affects the quality of the solution. At present, the selection of these parameters mostly depends on experience, so the evaluation results fluctuate greatly. In addition, in the experimental process, BSA algorithm is slow to solve and similar to violent solution, with high time complexity, so the evaluation results are unstable. Therefore, the BP neural network teaching mode of college English audio-visual speech has high evaluation accuracy and can provide more help for English teaching.

5. Conclusions

Audio-visual-oral theory has become one of the important teaching methods in English listening teaching in numerous universities. Combining the teaching mode of audio-visual spoken language with AI technology, it has real language environment, convenient cultural acquisition advantages, and strong interactive learning process. By watching, listen-

ing leads to speaking, strengthening the combination of watching and listening; it has the ability to successfully motivate students' acquiring interest, enhance students' acquiring autonomy as attested by exercising students' listening and speaking aptitude, and help to cultivate students' comprehensive cultural literacy, and lay a proper foundation for students' English practice.

This survey initially presents the background and research status of university English language audio-visual-oral teaching mode, including evaluation indicators and evaluation methods, and then briefly describes the development process of college English education under the vision of AI, the research background, and development status of neural network. Secondly, the theoretical basis of the algorithm involved in this paper is summarized, including the structure and principle of artificial neuron model, the learning algorithm of BP neural network, and the BSA and GA algorithms compared as models. At last, a teaching mode of college English audio-visual theory as said by BP neural network is designed. After preprocessing the collected samples, input them into the network training, and analyze the error of the training results. In order to evaluate its accuracy, through the comparison with the evaluation results of GA algorithm and BSA algorithm, it is proved that the educational effect of college English audio-visual-oral teaching mode constructed by BP neural network is better. Although this paper applies BP algorithm to the evaluation of university English teaching quality and establishes a teaching high quality and sets up a teaching version as said by BP neural network, it is found that there are still some problems that need to be further improved in the procedure of setting up the model. From the process of modeling, the importance of sample data collection and selection is self-evident. As one of the links of network training, it will directly affect the final effect of network training. Therefore, when selecting sample data, a methodology can be developed to make the selected sample more scientifically sound. For college English teaching mode, the next step is to develop a system or software based on evaluation model for college mixed English teaching mode, which can make teaching faster, more reliable, and more applicable.

Data Availability

The data used to support the findings of this study are available from the corresponding author upon request.

Conflicts of Interest

The author declares that there no conflicts of interest.

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