Evaluation Method of English Distance Teaching Quality in Online Education Platform

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Abstract. In order to improve the accuracy of English distance teaching quality evaluation in online education platform, this study proposes the design of evaluation methods for English distance teaching quality in online education platform. This method first establishes the selection principle of the quality evaluation index of English distance education, selects the appropriate quality evaluation index of English distance education, then determines the collection method of the evaluation index information, processes the collected information, and calculates the weight of the distance education quality evaluation index by using the analytic hierarchy process. Finally, the weighted average method is used to obtain the evaluation result of English distance teaching quality, which realizes the evaluation of English distance teaching quality. The experimental results show that the maximum integrity of distance teaching quality evaluation index is 96%, and the maximum information signal-to-noise ratio of distance teaching quality evaluation index is 95.46%. The results of distance teaching quality evaluation are consistent with the actual results, which fully proves that the method proposed in this paper has good application performance.

Keywords: English Teaching · Teaching Quality · Distance Learning · Teaching Effect · Online Education Platform · Evaluation Method

1 Introduction

With the development of the Internet and artificial intelligence, as well as the construction of infrastructure, live broadcast has gradually come into people's view. From the initial live broadcast of games and entertainment to the live broadcast of goods in recent years, live broadcast has opened up new scenes one after another. In East Asia, where education is emphasized, the integration of live broadcasting and education has become an inevitable trend. In particular, since the COVID-19 epidemic in 2020, teachers and students across the country have entered a new situation of "no classes and no schools", in which online education is an important support, promoting China to carry out the world's largest online education practice [1]. 2020 is also the year of online education reform. All online education companies are eager to seize the favorable terrain and win the final victory in this sudden encounter. According to the online education industry

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report issued by relevant statistical institutions, the market size of the online education industry in 2020 will grow by 35.5% to 257.3 billion yuan year-on-year, with the overall online rate of 23% to 25%. Among them, the acceleration of the online process of the track of early childhood and quality education, and the K12 discipline training track is the main contributing factor to the rapid growth of the online education market. In such a hot track, online education is also in the state of "half angel, half devil", which is also controversial when it is sought after by teachers, parents and capital. However, most of the industries under the epidemic situation had no choice but to press the pause button, which led to the largest amount of financing in the education field. Science and technology also continued to make efforts in the education field. The ToB racetrack blossomed, and education OMO began to rush, of which online education was the most favored by capital. In 2020, the education industry accumulatively raised 116.4 billion yuan, including 103.4 billion yuan of online education financing, accounting for 89%. Thus, online education platform has become one of the main means of teaching.

In recent years, distance education in China has developed rapidly, but there is a serious lack of evaluation standards to ensure the quality of distance education. Some researchers have made useful attempts to evaluate the quality of distance learning, but a unified and systematic evaluation index system has not yet been formed, and the evaluation methods of distance learning are not reasonable enough. Therefore, the research on evaluating the quality of distance learning is not enough, and distance learning has the following characteristics: large scale, widely distributed regions, complex personnel background, diversified organizations. In addition, the relatively loose distance learning system, which is composed of various parts of the distance learning system, is characterized by loose structure. It increases the difficulty of collecting evaluation information. Collecting information requires a lot of time and effort, as well as long-term tracking, investigation, analysis and sorting of the information received. The teaching quality of distance learning is difficult to guarantee, which requires a complete, comprehensive and evaluation system to evaluate it.

The survey data shows that at present, a large number of domestic scholars have realized the importance of distance learning quality assessment, and have made some research achievements in distance learning quality assessment [2]. Among them, the widely used teaching quality evaluation methods are the research of teaching quality evaluation index system of modern distance higher education and the evaluation method of network education effect based on fuzzy evaluation method. The former constructs a three-level index system to evaluate the teaching quality of distance higher education. To some extent, the problem of distance teaching quality evaluation can be solved by calculating the comprehensive score, but there is still the problem of linear additivity among evaluation factors. The latter first establishes the evaluation index system of online education, and then uses the fuzzy evaluation method to evaluate the quality of distance education. Both of the above two methods have certain defects, which cannot meet the follow-up development and application of online education platform, and is not conducive to the improvement of English distance teaching quality. Therefore, the research on the evaluation methods of English distance teaching quality in online education platform is proposed to provide accurate data support for the formulation of English distance teaching quality improvement policies. In order to improve the accuracy of

distance teaching quality evaluation, this study starts with the selection of appropriate evaluation indicators, first establishes the selection principles of indicators, then collects the selected indicators, uses the analytic hierarchy process to complete the weight calculation, and finally completes the final evaluation based on the weighted average method. It is hoped that this study can provide a literature reference for the related research of distance teaching quality evaluation in online education platform.

2 Research on the Quality Evaluation Methods of English Distance Teaching

2.1 Selection of Distance Learning Quality Evaluation Indicators

From the perspective of research objectives, the selection principles of English distance teaching quality assessment indicators (scientific, systematic, targeted and guiding) are formulated, and appropriate English distance teaching quality assessment indicators are selected to lay a solid foundation for the follow-up research.

Teaching is a complex systematic project, and students are the main body of learning. However, teaching methods have a key impact on students' learning quality. How to optimize these teaching methods is a comprehensive project, which needs the support of teachers, technicians and other resources of the school. Therefore, we should take these factors into full consideration when setting teaching quality assessment standards, so as to develop an effective quality assessment system [3]. After summarizing the relevant contents of the previous article and combining the survey data, this study believes that the following principles should be followed when developing the distance learning quality evaluation system, as shown in Table 1.

According to the principles shown in Table 1, appropriate selection of English distance learning quality evaluation indicators is made, and the selection results are shown in Table 2.

As shown in Table 2, the selected distance learning quality evaluation indicators are mainly divided into three layers, of which the number of first level indicators is 4, the number of second level indicators is 11, and the number of third level indicators is 33, which can comprehensively describe the actual situation of distance learning quality and provide support for the accurate evaluation of English distance learning quality [4].

2.2 Collection and Processing of Evaluation Indicator Information

Based on the above selected evaluation indicators of English distance learning quality, determine the information collection method of evaluation indicators, and process the collected information to provide a basis for determining the weight of subsequent evaluation indicators.

If the evaluation experts want to make a comprehensive and objective evaluation of the evaluated object, they must possess a large amount of evaluation information. Some of this information is provided by the evaluated unit, and some needs to be collected by the evaluation experts using various tools and methods. The evaluation system provides rich auxiliary functions for experts to collect evaluation information [5]. From the perspective

Table 1. Selection Principles of Teaching Quality Evaluation Indicators

principle	Content description
Scientific	Combined with the characteristics of distance learning, the setting of evaluation indicators must be more scientific and reasonable, consistent with the characteristics of distance learning. The indicator design cannot be static, and can not be formulated only through historical data. It needs to use modern information technology to dynamically follow up the participants in teaching work, find new problems in time, and combine the dynamic with the static, so as to ensure that the teaching quality evaluation indicators can change with the development of the times, and ensure that the evaluation indicators are scientific and reasonable
systematicness	In the process of teaching quality evaluation, we should also pay attention to the relationship between various elements. Each step is an important part of teaching work, and each step is closely linked. This requires us to pay attention to the details and at the same time have an overall plan for the development of the whole project. Each evaluation indicator must be closely linked. In addition to considering the rationality of each indicator, it is also important to maximize the effectiveness of the evaluation system
pertinence	When selecting the evaluation indicators for the teaching quality of distance education, we should fully consider these teaching characteristics and teaching priorities, and develop a targeted evaluation system. For example, for the evaluation of teaching preparation, in addition to the content of courseware, we should also examine the applicability of questions, so that the final evaluation criteria can be more effective
Orientation	In order to give full play to the directional effect of teaching quality evaluation indicators, it is necessary to study the full attributes of the distance teaching process, master the key teaching environment, understand the problems existing in the current teaching process, so that the problems existing in the teaching process can be tailored to the case, develop appropriate technical indicators, and guide the development of teaching work. Improve teaching effect

of expert evaluation, there are many ways to collect evaluation information, and the following five methods are commonly used, as shown in Table 3.

According to the contents shown in Table 3, and in combination with the research needs, it is determined that the evaluation indicator information collection method is the questionnaire method. The collection of evaluation indicator information often shows the characteristics of incomplete information, inconsistent expression of information, and being greatly affected by noise. Data cleaning smoothes noisy data by identifying or deleting outliers, and fills in missing values to “clean” data. Therefore, the main tasks of information processing are: missing value processing, smoothing noise data, redundant information removal and information standardization.

Table 2. Evaluation Indicators of English Distance Teaching Quality

Primary indicators	Secondary indicators	Level III indicators
Distance learning preparation	Distance learning resources	resources material
		Network courseware
		learning resource
	Distance learning environment	information environment
		Personal learning environment
		Network virtual class or study group
	Student preparation	Technical support system
		Online learning skills
	Teacher competence	Multimedia Teaching Technology
		Prepare lessons for online teaching
Distance learning activities	Teaching guidance	Real time communication frequency
		Asynchronous AC frequency
		Network guidance
	Teaching organization	Teaching arrangement
		Compilation of teaching documents
		Implementation of course plan
	teaching activities	teaching process
		Discussion arrangements
		Online Teaching Practice
		Operation correction requirements
		Student assessment
Learning support	psychological support	Psychological adjustment
		Complaint response
		Emotional interaction between teachers and students
	Learning support	E-learning assessment
		Learning guidance response

(*continued*)

Table 2. (*continued*)

Primary indicators	Secondary indicators	Level III indicators
		Learning technology response
Reform and development	Teaching research	teaching activities
		Scientific research activities
		Further study or training
	reform in education	Teaching evaluation reform
		Discipline teaching reform
		Network teaching reform

Table 3. Collection Methods of Evaluation Indicator Information

Collection method	Evaluation information	Evaluation method
Observation method	Morphological information Qualitative information	Site visit
Interview method	Morphological information Qualitative information	Site visit
Questionnaire method	Morphological information Qualitative information Quantitative information	Online assessment
Research method	Qualitative information Quantitative information	Site visit Online assessment
Role playing	Morphological information Qualitative information Quantitative information	Online assessment

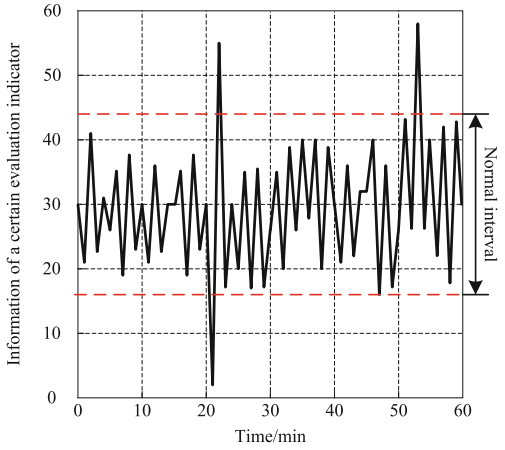
Wherein, the missing values are supplemented by regression estimation method, and the expression is

$$Y_k = \alpha_0 + \sum_{i=1}^{n} \alpha_i \beta_{ik} \tag{1}$$

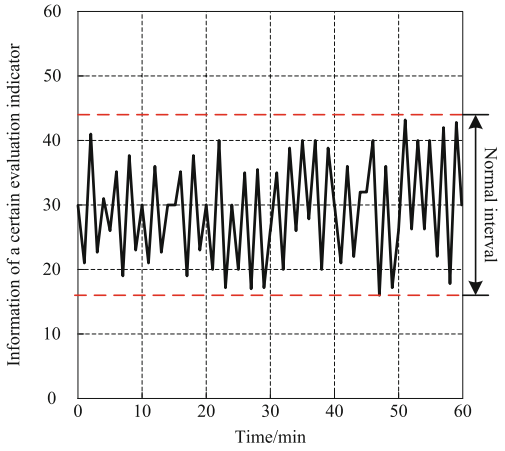
In Eq. (1), Y_k represents the regression estimate corresponding to the missing value of evaluation indicator information X_k; α_0 represents the initial regression coefficient; α_i represents the regression coefficient corresponding to the i-th evaluation indicator information; β_{ik} represents the regression relationship between the i-th evaluation indicator information and the missing value X_k.

This study uses morphological filtering to filter noise information, and the noise filtering effect is shown in Fig. 1.

In order to facilitate the research, the evaluation index information after denoising is recorded as $\{X_1, X_2, \cdots, X_n\}$ [6]. Due to the large number of evaluation indicators



(1) Evaluation index information before denoising



(2) Evaluation index information after noise removal

Fig. 1. Example of noise information filtering effect of evaluation indicators

and the impact of the collection process, the evaluation indicator information contains a lot of redundant information. Covariance is used to measure the correlation between the two evaluation indicator information. The calculation formula of covariance between the information of two evaluation indicators is

$$Cov(X_i, X_j) = \frac{\sum_{i=1}^{n} (X_i - \overline{X})(X_j - \overline{X})}{n-1} \tag{2}$$

In formula (2), $Cov(X_i, X_j)$ represents the covariance difference between the evaluation indicator information X_i and X_j; $\overline{X}$ represents the average value of evaluation indicator information; n represents the total amount of evaluation indicator information.

According to the calculation result of formula (2), the redundancy information determination rules are formulated as follows:

$$\begin{cases} Cov(X_i, X_j) \geq \chi^* \text{ Redundancy} \\ Cov(X_i, X_j) < \chi^* \text{ Normal information} \end{cases} \tag{3}$$

In Eq. (3), χ^* represents the judgment threshold for redundant information, which needs to be set based on actual evaluation indicator information.

The minimum maximum normalization method is used to normalize the evaluation indicator information, and the expression is

$$Z_i = \frac{X_i - X_{i-\min}}{X_{i-\max} - X_{i-\min}} \tag{4}$$

In Eq. (4), Z_i represents standardized evaluation indicator information; $X_{i-\min}$ and $X_{i-\max}$ represent the minimum and maximum values of the evaluation indicator information.

In summary, record the post-processing evaluation indicator information as $\{Z_1, Z_2, \cdots, Z_N\}$ to provide support for subsequent research.

2.3 Determination of Weights of Distance Learning Quality Evaluation Indicators

The weight of the evaluation index is directly related to the accuracy of the final evaluation results, so the research uses the analytic hierarchy process to calculate and determine the weight of the distance teaching quality evaluation index [7].

The calculation steps of distance learning quality evaluation index weight based on analytic hierarchy process are as follows:

Step 1: Build the analytic hierarchy process framework.

It is generally divided into three layers, the top layer is the target layer, the middle layer is the criterion layer or indicator layer, and the bottom layer is the scheme layer.

Step 2: Construction and assignment of judgment matrix.

According to the judgment matrix criteria, the proportion of each factor of a certain level to a certain criterion is determined by comparing the influence of the lower level to a certain criterion (or target) of the upper level. It is required to compare the importance of each element in pairs. The importance is assigned as 1–9. The rules are as follows:

$$a_{ij} = \begin{cases} 1 & r_i \text{ and } r_j \text{ are equally important} \\ 3 & r_i \text{ is slightly more important than } r_j \\ 5 & r_i \text{ is significantly more important than } r_j \\ 7 & r_i \text{ is more important than } r_j \\ 9 & r_i \text{ is extremely important than } r_j \\ 2/4/6/8 & \text{the median value of the above judgment} \end{cases} \tag{5}$$

In formula (5), a_{ij} represents the importance of any two evaluation indicators r_i and r_j, and there exists $a_{ji} = \frac{1}{a_{ij}}$.

The judgment matrix can be constructed according to formula (5), and the expression is

$$A = \begin{bmatrix} a_{11} & a_{12} & \cdots & a_{1n} \\ a_{21} & a_{22} & \cdots & a_{2n} \\ \vdots & \vdots & a_{ij} & \vdots \\ a_{n1} & a_{n2} & \cdots & a_{nn} \end{bmatrix} \tag{6}$$

In formula (6), A represents the judgment matrix.

Step 3: Hierarchical single sorting.

Hierarchical single ranking refers to the relative weight of each factor of all judgment matrices against their criteria, and its essence is to calculate the weight vector. Apply and principle to normalize and calculate each column of the consistency judgment matrix to obtain the corresponding weight [8]. Normalize each column of the inconsistent judgment matrix to approximate its corresponding weight, and calculate the arithmetic mean of column n vector as the final weight. The calculation formula is

$$\omega_i = \frac{1}{n} \sum_{j=1}^{n} \frac{a_{ij}}{\sum_{k=1}^{n} a_{kj}} \tag{7}$$

In Eq. (7), ω_i represents the weight value corresponding to evaluation indicator r_i.

Step 4: Judge the consistency of the matrix.

In practice, consistency test is required to judge whether the matrix meets the general consistency. Only when the general consistency is met can the logical rationality of the judgment matrix be confirmed, and further analysis of the results is required. The steps of consistency inspection are as follows:

a. Calculate consistency indicators CI, expressed as

$$CI = \frac{\lambda_{\max} - n}{n - 1} \tag{8}$$

In Eq. (8), $\lambda_{\max}$ represents the maximum eigenvalue of the judgment matrix A.

b. The corresponding average random consistency index RI was obtained through a lookup table, as shown in Table 4.

c. Calculate consistency ratio CR, the expression is

$$CR = \frac{CI}{RI} \tag{9}$$

In Eq. (9), CR If the value is less than 0.1, the consistency of the judgment matrix is acceptable.

Step 5: Overall ranking and inspection of levels.

Overall ranking refers to the relative weights of all factors in the judgment matrix and target layer. This weight is calculated from top to bottom and synthesized layer by layer. If the relative weight of element m in layer $k-1$ is equal to the overall goal $\omega^{k-1} = \left(\omega_1^{k-1}, \omega_2^{k-1}, \cdots, \omega_n^{k-1}\right)^T$, and the individual sorting weight of element j in the upper

Table 4. Average random consistency index *RI* surface

Matrix order	*RI*	Matrix order	*RI*
1	0	9	1.46
2	0	10	1.49
3	0.52	11	1.52
4	0.89	12	1.54
5	1.12	13	1.56
6	1.26	14	1.58
7	1.36	15	1.59
8	1.41	-	-

level of layer n in part k is $\delta_j^k = \left(\delta_{1j}^k, \delta_{2j}^k, \cdots, \delta_{nj}^k\right)^T$, it is not constrained by j. The weight of the dominant element is zero or in order $\delta^k = \left(\delta_1^{k-1}, \delta_2^{k-1}, \cdots, \delta_n^{k-1}\right)^T$, indicating that there are no $k-1$-layer elements in the order of k-layer elements. Therefore, for the total target k, the total order of layer elements is:

$$\omega^k = \left(\omega_1^k, \omega_2^k, \cdots, \omega_n^k\right)^T = \delta^k * \omega^{k-1} \tag{10}$$

Similarly, consistency testing is conducted on the overall sorting results. Generally speaking, if the weight of factor n in layer B is $\omega_j (j = 1, 2, \cdots, n)$, and if one indicator B_j of factor B in upper layer C has a consistency of CI_j for a single sorting, and the corresponding average random consistency index is RI_j, then the consistency rate of the entire hierarchical sorting of factor C is:

$$CR = \frac{\sum_{j=1}^{n} \omega_j CI_j}{\sum_{j=1}^{n} \omega_j RI_j} \tag{11}$$

When the value of CR is less than 0.1, the consistency of the judgment matrix is acceptable.

Through the above process, we have completed the calculation of the weight of remote learning quality evaluation indicators and recorded it as $\{\omega_1, \omega_2, \cdots, \omega_n\}$, making sufficient preparations for the subsequent acquisition of remote learning quality evaluation results.

2.4 Acquisition of Distance Learning Quality Assessment Results

Based on the above results of the selection of English distance teaching quality evaluation indicators, the results of indicator information processing and the results of indicator weight calculation, the weighted average method is used to obtain the English

distance teaching quality evaluation results, providing data support for the improvement of distance teaching quality.

The weighted average method can not only comprehensively consider the weight of experts in the evaluation of different indicators, but also consider the weight of each indicator itself, which can maximize the accuracy of teaching quality evaluation results [9]. The teaching quality evaluation result based on the weighted average method is

$$\xi = \frac{\sum_{i=1}^{n} r_i * Z_i * \omega_i}{\vartheta^2} + \varepsilon^o \tag{12}$$

In Eq. (12), ξ refers to the evaluation result of the quality of English remote teaching; ϑ^2 represents the standardization factor; ε^o represents the error adjustment item of the teaching quality evaluation results, which determines the accuracy of the teaching quality evaluation results.

According to the calculation result of formula (12), set the English distance learning quality evaluation rules as follows:

When the quality evaluation result ξ of English remote learning is within the range of [0, 0.2), it is considered that the quality of English remote learning is excellent.

When the quality evaluation result ξ of English remote learning is within the range of [0.2, 0.5), it is considered that the quality of English remote learning is good.

When the quality evaluation result ξ of English remote learning falls within the range of [0.5, 0.8), it is considered that the quality of English remote learning is average.

When the quality evaluation result ξ of English remote learning falls within the range of [0.8, 1], it is considered that the quality of English remote learning is poor.

Through the above process, we completed the evaluation of the quality of English distance learning, and provided help for the development of English distance learning and online education platform [10].

3 Experiment and Result Analysis

3.1 Determination of Weights of Distance Learning Quality Evaluation Indicators

Calculate and obtain the weights of distance learning quality evaluation indicators according to the procedures shown in Sect. 2.3, so as to facilitate the follow-up experiments. The weights of distance learning quality evaluation indicators are shown in Table 5.

As shown in Table 5, the weight complies with the rules: $\sum_{i=1}^{n} \omega_i = 1$. It shows that the accuracy of obtaining the weight value of distance teaching quality evaluation index is high, and subsequent experiments can be carried out.

3.2 Determination of Experimental Parameters

The proposed method adds a parameter error adjustment item in the calculation of teaching quality evaluation results ε^o. Its value is directly related to the accuracy of

Table 5. Weights of Distance Teaching Quality Evaluation Indicators

Secondary indicators	weight	Level III indicators	weight
Distance learning resources	0.05	resources material	0.02
		Network courseware	0.02
		learning resource	0.01
Distance learning environment	0.08	information environment	0.04
		Personal learning environment	0.03
		Network virtual class or study group	0.01
Student preparation	0.06	Technical support system	0.04
		Online learning skills	0.02
Teacher competence	0.12	Multimedia Teaching Technology	0.08
		Prepare lessons for online teaching	0.04
Teaching guidance	0.10	Real time communication frequency	0.05
		Asynchronous AC frequency	0.03
		Network guidance	0.02
Teaching organization	0.08	Teaching arrangement	0.03
		Compilation of teaching documents	0.02
		Implementation of course plan	0.03
teaching activities	0.18	teaching process	0.06
		Discussion arrangements	0.02
		Online Teaching Practice	0.01
		Operation correction requirements	0.07
		Student assessment	0.02
psychological support	0.04	Psychological adjustment	0.01
		Complaint response	0.02
		Emotional interaction between teachers and students	0.01
Learning support	0.12	E-learning assessment	0.05
		Learning guidance response	0.04
		Learning technology response	0.03
Teaching research	0.10	teaching activities	0.06
		Scientific research activities	0.02
		Further study or training	0.01

(*continued*)

Table 5. (*continued*)

Secondary indicators	weight	Level III indicators	weight
reform in education	0.07	Teaching evaluation reform	0.01
		Discipline teaching reform	0.03
		Network teaching reform	0.03

teaching quality evaluation results. Therefore, before the experiment, it is necessary to ε^o Determine the best value.

Obtain parameters through testing ε^o The relationship with the accuracy of teaching quality assessment results is shown in Fig. 2.

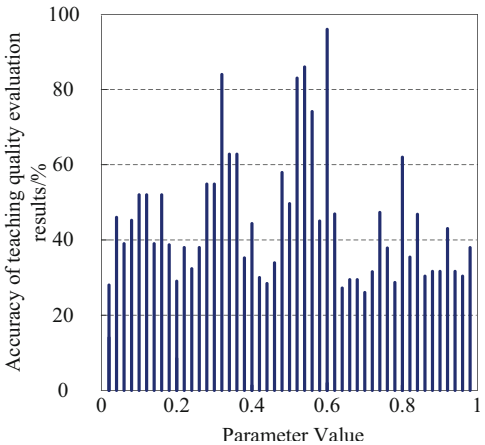


Fig. 2. Parameters ε^o Schematic diagram of the relationship with the accuracy of teaching quality evaluation results

As shown in Fig. 2, when parameter ε^o is 0.6, the accuracy rate of teaching quality evaluation results reaches the maximum of 96%. Therefore, the optimal value of parameter error adjustment item can be determined to be 0.6.

3.3 Analysis of Experimental Results

In order to verify the advanced nature of the proposed method, reference [5] method and reference [6] method are selected as comparison methods 1 and 2, and combined with the above experimental preparation content, a comparative experimental study on distance teaching quality evaluation is carried out. In order to prove the application effect of this method objectively, we choose the integrity of distance teaching quality evaluation indicators, information signal-to-noise ratio and result accuracy as evaluation indicators. First of all, completeness refers to whether the evaluation index can comprehensively cover all aspects of distance teaching. By selecting a complete evaluation index, we can

understand the quality of distance teaching more accurately, so as to carry out targeted improvement and optimization. Secondly, the information signal-to-noise ratio refers to the proportional relationship between the information provided by the evaluation index and the noise. In the evaluation of distance teaching quality, the index with higher signal-to-noise ratio can make the evaluation result more accurate and reliable. By eliminating distractions and noise, we can get a more accurate picture of the true quality of distance teaching, and evaluate and make decisions accordingly. Finally, accuracy is an important attribute of the evaluation index, which reflects the degree of consistency between the evaluation results and the actual situation. Choosing accuracy as the evaluation index can ensure that the evaluation results of distance teaching quality are in line with the actual situation. This helps us to find the problems and shortcomings in time, and take corresponding improvement measures to improve the quality of distance teaching. To sum up, the completeness, information signal-to-noise ratio and accuracy of distance teaching quality evaluation indicators are selected as evaluation indicators, which can help objectively prove the application effect of this method and provide scientific basis for improving the quality of distance teaching. The specific analysis process of the experimental results is as follows:

3.3.1 Analysis of the Integrity of Distance Learning Quality Evaluation Indicators

The number of distance learning quality evaluation indicators is too small to comprehensively evaluate the quality of distance learning, and the evaluation results obtained are quite different from the actual results. It can be seen that the integrity of distance learning quality evaluation indicators plays a vital role. The integrity of distance learning quality assessment indicators obtained through experiments is shown in Fig. 3.

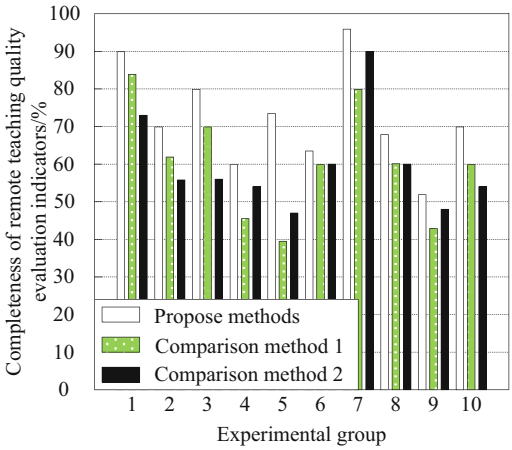


Fig. 3. Schematic diagram of the integrity of distance learning quality evaluation indicators

As shown in the data in Fig. 3, under the background of different experimental groups, the integrity of distance teaching quality evaluation indicators obtained after the application of the proposed method is higher than that of comparison method 1

and comparison method 2, with the maximum value of 96%, which indicates that the selection of distance teaching quality evaluation indicators of the proposed method is more accurate.

3.3.2 Signal to Noise Ratio Analysis of Evaluation Indicator Information

The SNR values of distance learning quality evaluation index information obtained through experiments are shown in Table 6.

Table 6. Information SNR of Distance Teaching Quality Evaluation Indicators

Experimental group	Propose method	Comparison method 1	Comparison method 2
1	89.45	45.12	52.10
2	90.12	32.00	41.23
3	82.10	41.02	42.58
4	95.46	36.59	44.75
5	90.12	38.45	52.31
6	84.45	51.20	40.12
7	71.02	41.29	48.78
8	85.44	52.78	42.13
9	86.32	53.64	32.05
10	85.12	52.18	36.58

Note: The unit is dB.

As shown in the data in Table 6, under the background of different experimental groups, the signal-to-noise ratio of the distance teaching quality evaluation index information obtained after the application of the proposed method is higher than that of the comparison method 1 and comparison method 2, with the maximum value of 95.46%, indicating that the proposed method has better information processing effect on the distance teaching quality evaluation index.

3.3.3 Analysis of Distance Learning Quality Assessment Results

The evaluation results of distance learning quality obtained through experiments are shown in Fig. 4.

As shown in the data in Fig. 4, under the background of different experimental groups, the distance teaching quality assessment results obtained after the application of the proposed method are consistent with the actual results, while the distance teaching quality assessment results obtained by comparison methods 1 and 2 have a large deviation from the actual results, indicating that the distance teaching quality assessment results obtained by the proposed method are more accurate.

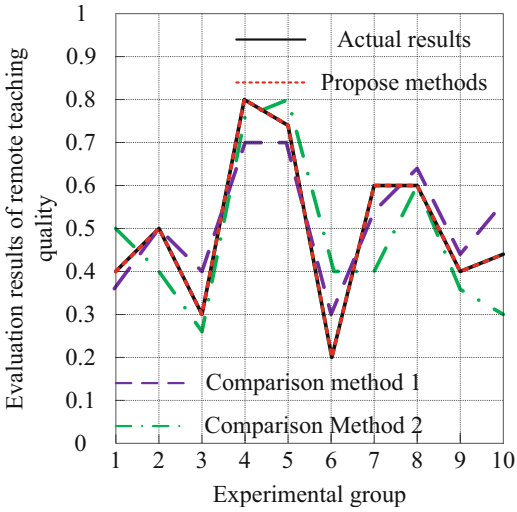


Fig. 4. Sketch map of distance learning quality assessment results

4 Conclusion

In order to improve the accuracy of English distance teaching quality evaluation on online education platform, a new method is designed in this study. First, in the process of determining the quality evaluation index of English distance education, the selection principle is clarified, and the appropriate evaluation index is screened. Secondly, the collection method of evaluation index information is developed, and the obtained information is processed. The AHP method is used to determine the weight of the evaluation index of distance education quality. Finally, the weighted average method is used to obtain the evaluation result of English distance teaching quality, so as to achieve a comprehensive evaluation of its quality. The core of this method is to ensure the accuracy and reliability of the evaluation index. The experimental results show that the evaluation results of distance teaching quality are consistent with the actual results and have a certain application effect. Modern distance education evaluation is an open and dynamic practice process. It needs to be adjusted in time according to changes in the actual situation, and constantly corrected and enriched. The content of distance education teaching quality evaluation conducted by the author is the core of distance education teaching quality evaluation, but not the whole. Although the distance education teaching quality evaluation index system established in this study has certain application value, it lacks a large-scale test of reliability and validity, which is also the goal of the next study.

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