

Retraction

Retracted: The Teaching Evaluation Index System and Intelligent Evaluation Methods of Vocational Undergraduate Pilot Colleges

Wireless Communications and Mobile Computing

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This article has been retracted by Hindawi following an investigation undertaken by the publisher [1].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

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

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

In addition, our investigation has also shown that one or more of the following human-subject reporting requirements has not been met in this article: ethical approval by an Institutional Review Board (IRB) committee or equivalent, patient/participant consent to participate, and/or agreement to publish patient/participant details (where relevant).

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] H. Wu, "The Teaching Evaluation Index System and Intelligent Evaluation Methods of Vocational Undergraduate Pilot Colleges," *Wireless Communications and Mobile Computing*, vol. 2022, Article ID 3485931, 8 pages, 2022.

Research Article

The Teaching Evaluation Index System and Intelligent Evaluation Methods of Vocational Undergraduate Pilot Colleges

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In recent years, with the popularization of higher education, quality problems have become increasingly prominent, and government documents often propose that the main task of education reform and development is to improve the quality of higher education. As a result, teaching evaluations have appeared one after another. Although various evaluation activities are carried out dynamically, expert evaluation has proven to be one of the most effective methods to ensure professional quality. This will help improve the quality of human resource development, promote regional economic development, improve the quality assurance system of higher education, and promote the formation of professional skills development mechanisms. This article studies the teaching evaluation index system and intelligent evaluation methods of vocational undergraduate pilot colleges, understands the relevant knowledge of the teaching evaluation index system on the basis of literature data, and then, constructs the teaching evaluation system of vocational undergraduate pilot colleges. The constructed system is tested, and the test results show that the error of the results of teacher self-evaluation and student evaluation is controlled within the two, which also verifies that the construction of the teaching ability evaluation index system this time is reasonable and scientific.

1. Introduction

The focus of our country's professional undergraduate pilot colleges has shifted from accelerating the construction of colleges and universities to strengthening the construction of colors [1, 2]. The professional assessment of the vocational undergraduate pilot college mainly assesses all aspects related to the profession. In addition, the existing professional undergraduate pilot colleges are mostly assessed at the macrolevel, including talent training, and lack mature microlevel assessments [3, 4]. Therefore, professional undergraduate pilot institutions should carry out microlevel assessments, focusing on the development model from quantity to quality. The reasons are as follows: first of all, the professional undergraduate pilot college is the most basic education unit and classifies students accordingly. Educational activities are carried out according to the field of specialization. Secondly, the evaluation always puts the improvement and improvement of the quality of education

in the first place, and according to the special needs of the society, the goal is to train experts in the field of specialization [5, 6]. Therefore, professional evaluation of vocational undergraduate pilot colleges can not only improve the quality of vocational undergraduate pilot colleges and shape the characteristics of vocational undergraduate pilot colleges but also promote the professional evaluation system of vocational undergraduate pilot colleges to a certain extent [7, 8].

In order to study education evaluation, some researchers have studied the existing professional index system of undergraduates and colleges, practical education, student employment, etc. [9]. Some researchers pointed out that an effective education evaluation and quality control mechanism is one of the key tools to ensure the quality of modern university education. Using scientific methods, adapting and promoting the characteristics of new undergraduate colleges and universities, establishing a scientific and fair education evaluation system, and evaluating education levels are effective means of guidance and supervision. Strengthen

educational activities, pay attention to the construction of “mechanical quality,” promote construction with evaluation, promote reform, promote management, and combine evaluation with construction [10]. Some scholars believe that the use of the same as traditional undergraduate colleges and recent higher education institutions The evaluation model of the evaluation system and methods cannot reflect the characteristics of the newly recruited faculty. New faculty and staff have distinctive characteristics in running schools. This is inevitable. It has led to the unification of the school model and the development direction of all universities. It is not only not suitable for the society of higher education development needs and has an adverse impact on the overall development of higher education, it is impossible to understand and guide the development of new departments through evaluation [11]. In summary, there are many research results on teaching evaluation, but in its evaluation system, the construction needs to be studied in depth.

This article studies the teaching evaluation system and intelligent evaluation methods of vocational undergraduate pilot colleges, analyzes the teaching evaluation and teaching evaluation system construction principles on the basis of literature data, and then, constructs the teaching evaluation system of vocational colleges, tests the constructed system, and draws relevant conclusions through the test results.

2. Research on Teaching Evaluation Index System

2.1. Overview of Teaching Evaluation. The doctrine evaluation in the narrow sense is mainly the evaluation of teacher’s specific teaching tasks, and the doctrine evaluation is mainly the development of teacher’s internal teaching activities, and it also depends on the content, methods, and other methods of teacher’s teaching, including all the requirements of teacher’s teaching [12], related to the activities of the school teaching system, courses, teaching plans, teaching conditions, etc. Therefore, the assessment is mainly based on the teaching system, and its scope continues to expand in the entire student education system and then extends to a broader national teaching system and various fields related to teaching. Teaching assessment is perfected and developed through the continuous development of its importance.

The degrees to which education meets social, political, economic, technological, and cultural needs are called political value, economic value, technical value, and cultural value, respectively. Therefore, research on teaching evaluation has practical significance. The sum of these values is the social value of educational activities. Therefore, the social value of the teaching profession is the degree to which it meets social needs, and the evaluation of the teaching profession is to judge the degree to which the teacher profession meets social needs. Facts have proved that the essential feature of the evaluation of doctrinal works is the value crisis, that is, the problem faced by the evaluation object: to what extent does the educational activity meet the needs of the body? So, the evaluation objects here are the organizers and managers of the evaluation. Today, in our country, the main organizers of higher education are governments and

education management departments at all levels representing the country and the country, so the object of teaching evaluation is the higher education institution being evaluated. Therefore, in the evaluation work, the evaluation model depends on the concept of value and the value model being evaluated. It cannot be simply said that the evaluation model is objective. In fact, the evaluation model has the duality of subjectivity and objectivity.

2.2. Principles for the Formulation of the Evaluation Index System

2.2.1. Science. Education is a systematic project with a wide range of content, including education and educational goals, educational content, teaching methods, and educational tools. Each element contains many elements. Therefore, there are many elements that need to scientifically determine the educational evaluation indicators. The definition of educational evaluation indicators should correctly reflect the ideas and concepts that guide educational activities, follow the basic laws of school human resource development, reflect the basic characteristics of the evaluation objectives as a model, and reflect the educational process. Therefore, the main aspects of evaluation need to be emphasized, but other aspects cannot be ignored. The education evaluation index system is the main content of the education evaluation work, which affects the evaluation results, and then affects the correct evaluation of schools, and its scientific nature must be ensured.

2.2.2. Convenience. All indicators strive to be measurable, comparable, convenient, and easy to apply. Through the review of the evaluation data, accurate information can be provided, targeted improvements can be made, and effective diagnosis of departmental education can be achieved. There are qualitative and quantitative methods for describing the importance of evaluation factors and scoring standards, and a combination of qualitative and quantitative methods is adopted according to the characteristics of evaluation factors. The qualitative explanation is as clear as possible so that experts can be trusted. Quantitatively expressing a high academic level and rich educational management experience can easily and accurately determine the degree of conformity between the actual state of the department-level education work and the required goals. For quantifiable factors, try to pass statistical analysis of some basic data to objectively reflect the basic state of educational activities. At the same time, remember that the indicators should be relatively intelligent, and the levels should not be too detailed, but not too general. The recognition is poor, which will affect the evaluation results. The indicator system needs to promote the self-monitoring and self-evaluation of the evaluated university to promote the development of evaluation projects.

2.2.3. Direction. The performance evaluation system will undoubtedly play the role of baton in university education activities. Therefore, the indicator system aims to play an objective leading role in college education and teaching, education reform, university construction, etc., highlight the characteristics of university application-oriented talent

training as much as possible, highlight the importance of the actual connection between colleges and universities, and attach importance to education the quality requirements of the team's "dual-teacher type" pay attention to the applicability and relevance of educational content. At the same time, the evaluation system should also guide departments and universities to properly handle the relationship between scale, quality, structure, and efficiency, handle the relationship between teaching and research, and promote innovation and create characteristics.

2.2.4. Unity. The task of educational evaluation of colleges and universities is, on the one hand, to evaluate, recognize, and summarize the work and achievements of colleges and universities. At the same time, guide and supervise the completed work. In the education field, whether it is designing a rating system or implementing a rating process, there is always a contradiction between the status quo and the growth trend. Unrealistic emphasis on the predictive index of the growth trend will definitely give people a feeling of impossibility and affect their confidence in university education. Based solely on the status quo, the index system has no incentive effect and is not conducive to improving education programs. Therefore, the model of the index system should not only be derived from the actual education system of the university but should also be able to adhere to higher standards, instill the spirit of reform, conform to the development direction, and link up with the curriculum, so that the standards established by the evaluation can be better integrated and the status quo keep consistent with the contradiction between development trends.

2.2.5. Flexibility. Although university education has similarities, different universities also have differences in specific training goals, disciplines and courses, and actual educational challenges. It is impossible to design an index system for the specific educational goals of each college, each type of discipline and curriculum, and the practical education of each university. It must be divided very carefully. Therefore, when designing the index system in this article, we need to consider as many common elements as possible so that the index covers the educational work of different colleges and universities. In the actual evaluation, if the educational activity data of individual universities is missing, the missing data can be processed.

The formulation of the teaching evaluation index system of vocational undergraduate pilot colleges must follow the above principles in order to play its role.

3. Construction of Teaching Evaluation Index System for Vocational Undergraduate Pilot Colleges

3.1. Construction of Specific Indicators. On the basis of summarizing the experience and lessons of the construction of the education indicator system, this article will first add a self-evaluation item in the construction of the teacher education indicator system to facilitate the practical guidance

and development of evaluation. Based on the glacier structure theory, the personal qualities and characteristics of teachers are more decisive for their educational behavior, so the measurement system adds a measurement to this part; third, enrich the evaluation questions, enrich the classroom teaching, and emphasize the importance of teacher self-evaluation; fourth, self-selected index adjustment, distinguishing teacher leadership evaluation, and constructing an evaluation index system according to the principles of index system construction described in the previous section.

3.2. Determining the Hierarchical Structure of the Evaluation Indicators for the Educational Ability of the Faculty and Staff in Colleges. Combining the iceberg theory and the research topics of this article, one of the most obvious indicators of teachers' basic skills and scientific research innovation ability is the apparent quality of the upper part of the iceberg and the basic quality of the bottom of the iceberg personality to represent. Then, the first-level indicators are subdivided into second, third, or more subdivisions to comprehensively and scientifically reflect the comprehensive quality of teachers' educational ability. The index is shown in Table 1.

3.3. The Teaching Ability Index System of College Teachers. The design of a complete educational quality evaluation system for colleges and universities is based on the evaluation of the educational quality characteristics of all teachers, using thorough methods, questionnaire surveys, and other methods as indicators of key characteristics. Correspondingly, a model of the educational quality evaluation system as shown in Figure 1 was designed.

3.4. Hierarchical Analysis Process Based on Data Mining. Level division is a method of separating levels from top to bottom. It is often said that this is a method of summing first and then dividing. The principle of this method is simple. In other words, all data objects are placed in a cluster and gradually divided into smaller clusters (just like an image of an inverted tree, first with roots, then branches, and leaves). Even if the split is completed, the smallest cluster can perform certain functions relatively easily. For example, in the education quality evaluation system, the layered model constructed is a measurement system. The highest level of the rating system is separated at step 0. After separating these two steps, a hierarchical model with a two-level index structure is generated, as shown in Figure 2.

3.5. Construction of the Judgment Matrix. The figure clearly shows the subordination of the good and bad factors to the hierarchical structure model. If the target level of the upper-level factor is set to U and the reference level of the lower-level factor is set to U_1, U_2, \dots, U_3 , then the corresponding weight W_1, W_2, \dots, W_n can be set according to the degree of dependence of each lower-level factor on the upper-level factor. If the dependence of each subordinate factor on the superior factor can be quantified in the design, the weight of each subordinate factor can be quickly

TABLE 1: The hierarchical structure of the evaluation index of the educational ability of university staff.

Iceberg capacity layer	Content	First level indicator
Skill	Such as: expression ability, organizational ability, decision-making ability, and learning ability	Basic teaching skills/teaching research ability
Knowledge	Such as: management knowledge, financial knowledge, and other professional knowledge	
Role positioning	Such as: managers, experts, and teachers	Basic teaching literacy/teacher's personal career planning and summary
Values	Such as: spirit of cooperation and dedication	
Self-awareness	Such as: self-confidence and optimism	
Quality	Such as: honesty, honesty, and sense of responsibility;	
Motivation	Such as: achievement needs and interpersonal communication needs	

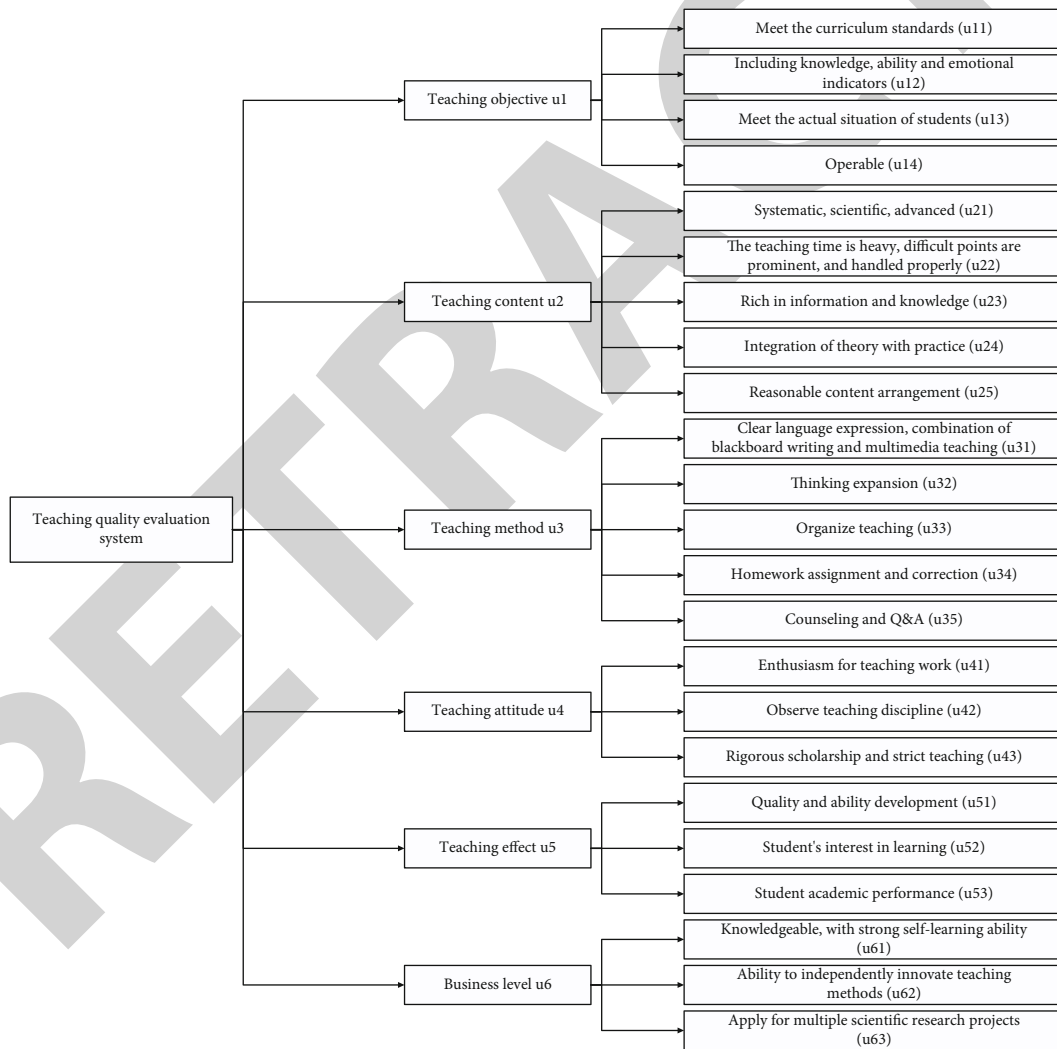


FIGURE 1: Educational quality evaluation system model.

determined, but it is difficult to judge the qualitative and subjective subordinate factors in decision-making. Once each weight is directly determined, the lower-level proxy weight can only be obtained through other calculation

methods. The main purpose here is to compare all the factors involved, that is, to compare the influence ratio of the two lower-level factors U_i and U_j to the target factor U , and the result is recorded as U_{ij} . Combine all comparison

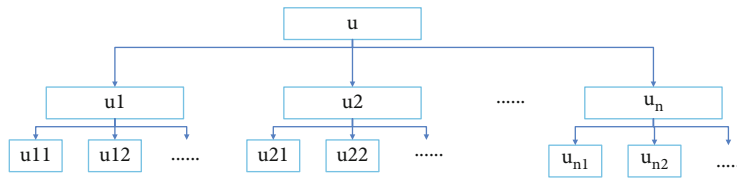


FIGURE 2: Hierarchical analysis process based on data mining.

TABLE 2: Scale table of judgment matrix.

Scale U	Definition
1	i and j have the same effect
3	i is slightly stronger than j
5	i is stronger than j
7	The effect of i is significantly stronger than j
9	The effect of i is definitely stronger than j
2, 4, 6, 8	i and j are in the middle value between two adjacent judgments

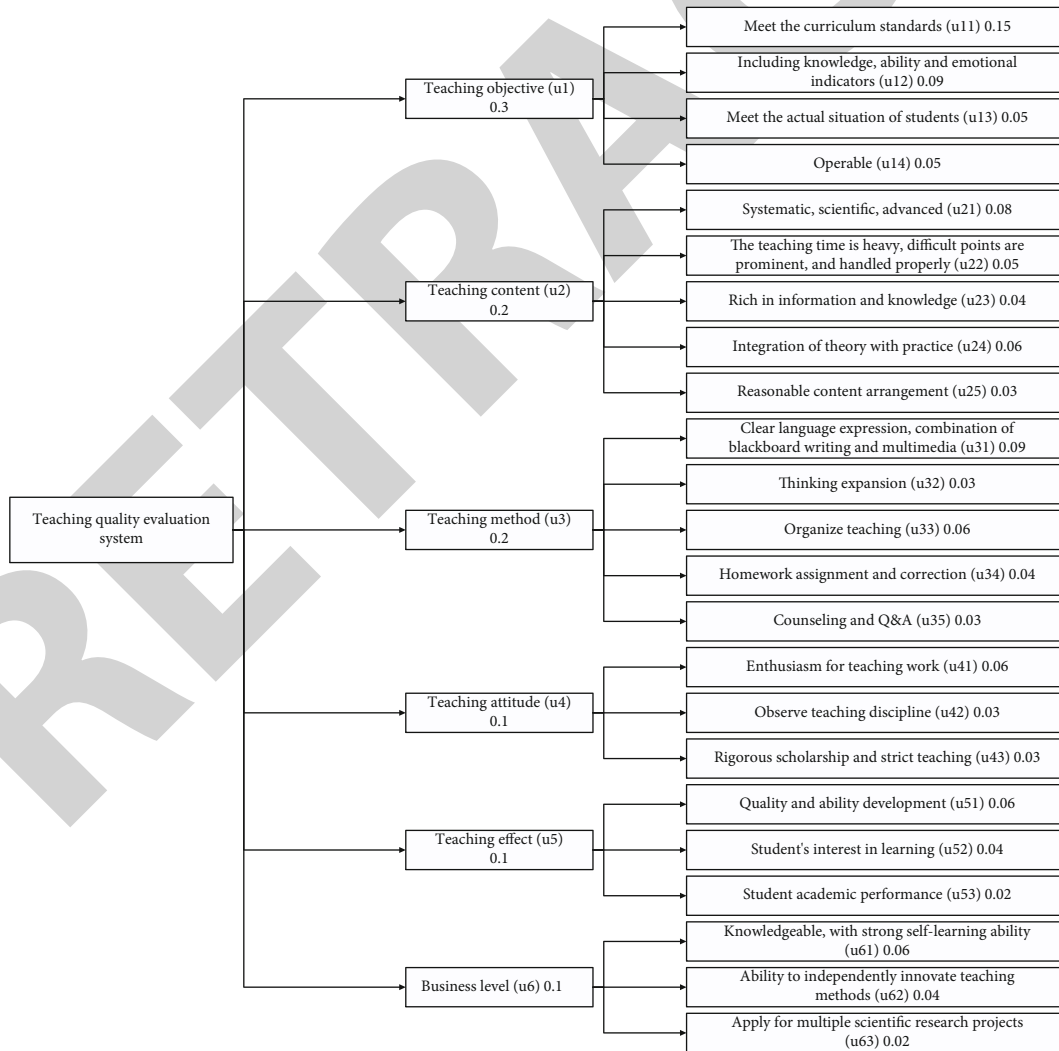


FIGURE 3: The hierarchical structure of college education quality evaluation system.

TABLE 3: Evaluation results of teacher education ability index system.

	Teacher	Student
Meet the curriculum standards (u11)	10.67	10.23
Including knowledge, ability, and emotional indicators (u12)	17.82	17.43
Meet the actual situation of students (u13)	2.22	2.04
Operable (u14)	3.32	3.34
Systematic, scientific, and advanced (u21)	4.23	4.12
The teaching time is heavy; difficult points are prominent, and handled properly (u22)	5.32	5.36
Rich in information and knowledge (u23)	2.57	2.73
Integration of theory with practice (u24)	1.35	1.24
Reasonable content arrangement (u25)	0.74	0.73
Clear language expression; combination of blackboard writing and multimedia teaching (u31)	3.12	3.25
Thinking expansion (u32)	1.12	1.13
Organize teaching (u33)	0.04	0.03
Homework assignment and correction (u34)	0.45	0.47
Counseling and Q&A (u35)	0.09	0.03
Enthusiasm for teaching work (u41)	0.34	0.33
Observe teaching discipline (u42)	5.71	5.73
Rigorous scholarship and strict teaching (u43)	7.34	7.32
Quality and ability development (u51)	0.53	0.55
Student interest in learning (u52)	1.15	1.05
Student academic performance (u53)	2.47	2.36
Knowledgeable, with strong self-learning ability (u61)	1.84	2.01

results to get a matrix. The expression is as follows.

$$U = (U_{ij})_{n \times n} = \begin{pmatrix} U_{11} & U_{12} & \cdots & U_{1n} \\ \cdots & \cdots & \cdots & \cdots \\ U_{n1} & U_{n2} & \cdots & U_{nn} \end{pmatrix}. \quad (1)$$

Based on the above properties, if U is a consistency matrix, $\lambda_{\max} = n$, then the eigenvector corresponding to λ_{\max} is normalized and recorded as $W = (W_1, W_2, \dots, W_n)^T$ in

$$\sum_{i=1}^n W_i = 1. \quad (2)$$

In the expression, W is called the weight vector, which represents the weight of the target U . In the system, the weight of each element can be determined by pairing each element. Table 2 shows the size of the matrix.

3.6. Weight Calculation. The two levels of the standard, the first-level index and the corresponding second-level index, constitute the hierarchical structure of the college's education quality evaluation system. The same method described above is used to calculate the weights of all other subindices. The final result is shown in Figure 3.

4. Example Test

In order to verify whether the teacher education ability indicator system constructed in this article is scientific and logical, this article designs a survey questionnaire based on various indicators of the teaching ability of professional undergraduate pilot teachers. The acceptance of undergraduate education ability is mainly aimed at professional pilot teachers and adopts a self-evaluation method. The evaluation method was adopted for 23 professors and 10 undergraduate pilot universities in the city, and professional students were selected to conduct a questionnaire survey. Finally, the survey results can be summarized and combined with the weights of various indicators to calculate the total score of the teacher's teaching ability (full score is 100 points). 40 questionnaires were distributed, and 40 were recovered, the efficiency was 100%, 50 student questionnaires were distributed, and 45 were recovered, and the recovery rate was 95%.

After the received survey is processed, the teacher and student surveys are handled separately. For student self-evaluation and evaluation, enter the score in the last column of the evaluation system, and then, perform the following data processing: find the average score of 40 teachers and 50 students, and then, multiply the value by the weight of the first-level indicator and then second weight of the first-level indicator, then the weight of the third-level indicator, and finally, the total score. The four indicators of basic education qualifications under the background of basic teaching skills can only be processed quantitatively, so when

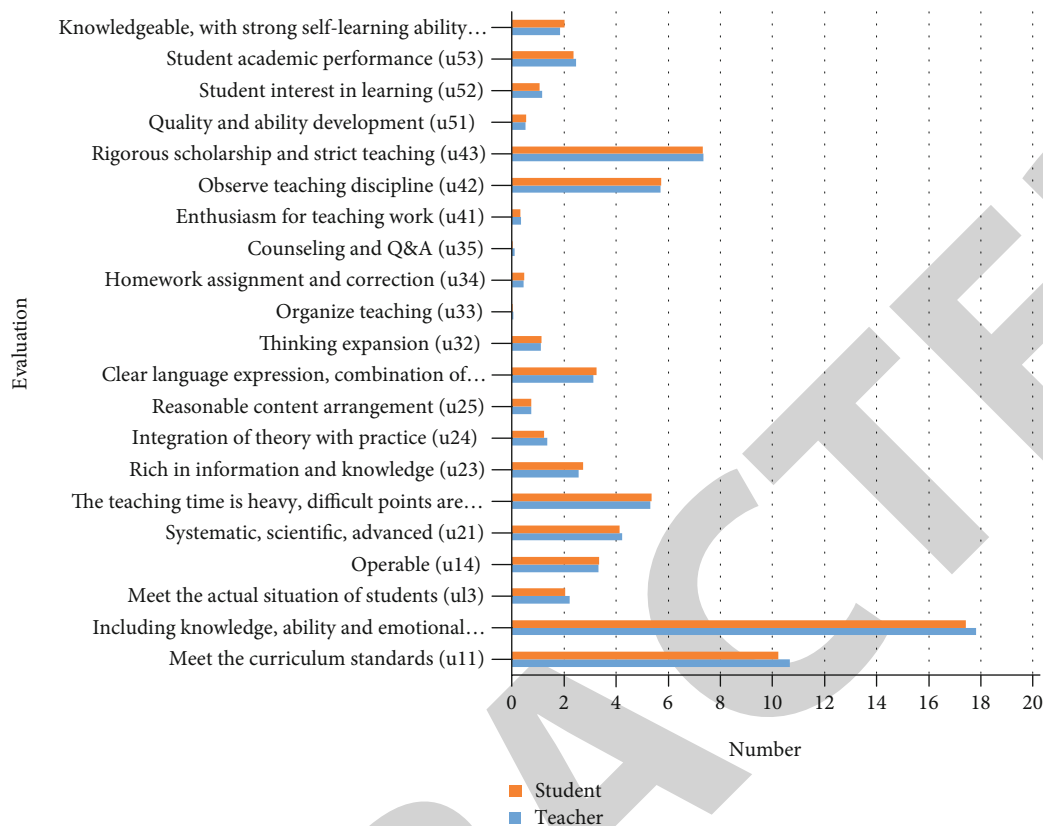


FIGURE 4: Evaluation results of teacher education ability index system.

calculating grades, only the data is calculated without processing. Due to the qualitative processing of these three levels of indicators, it can be estimated that the final average total score is within 10 points, that is, the average total score of teacher education ability assessment is about 90 points. Compare the difference between teacher self-evaluation and student evaluation scores, use the difference to judge whether the reconstructed teacher education evaluation system is reasonable. The results are shown in Table 3.

It can be concluded from Figure 4 that the error between teacher self-evaluation and student evaluation is within 2 points, so the construction of this educational ability evaluation index system is logical and scientific. First of all, from the first-level indicators, basic teaching skills account for the largest proportion, which also shows that general knowledge and professional skills represent the teaching ability of teachers to a large extent, and the proportion of education and scientific research is very small. Since the college is a professional pilot school, the ability of scientific research and innovation is considered to be an issue that university professors should pay attention to.

5. Conclusions

The teaching evaluation index system and intelligent evaluation of higher vocational undergraduate pilot colleges play an important role in the education of students. This paper takes the students of the pilot colleges and universities of higher vocational colleges as the research objects, and

through the analysis of relevant knowledge and theories, constructs the teaching evaluation system of the pilot colleges and universities of higher vocational colleges, tests the constructed system, and passes the test results. Get the results of teacher self-assessment and student assessment. It also verifies the rationality and scientificity of the construction of the teaching ability evaluation index system.

Data Availability

The data underlying the results presented in the study are available within the manuscript.

Conflicts of Interest

There is no potential conflict of interest in our paper, and the author has seen the manuscript and approved to submit to your journal. We confirm that the content of the manuscript has not been published or submitted for publication elsewhere.

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