

Retraction

Retracted: An Analysis of the Effectiveness of Machine Learning Theory in the Evaluation of Education and Teaching

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This article has been retracted by Hindawi following an investigation undertaken by the publisher [1].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] B. Wu and C. Zheng, "An Analysis of the Effectiveness of Machine Learning Theory in the Evaluation of Education and Teaching," *Wireless Communications and Mobile Computing*, vol. 2021, Article ID 4456222, 10 pages, 2021.

Research Article

An Analysis of the Effectiveness of Machine Learning Theory in the Evaluation of Education and Teaching

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Artificial intelligence was first proposed in the 1950s, when it was only a forward-looking concept. If machines can have the same learning ability as human beings and the computing power of computers themselves, this concept has been placed high hopes. Until about 2010, with the explosion of data volume and the improvement of computer performance, machine learning has become a leader in breaking through the bottleneck of artificial intelligence. Research on machine learning in education and teaching has attracted much attention. From the above research status, we can see that in the current period of the vigorous development of machine learning, many applications are still not perfect and ordinary education and teaching evaluation is difficult to meet people's requirements, so how to gradually improve its effectiveness is a significant goal with research significance and practical interests. However, in the environment of colleges and universities, prediction information and evaluation methods have important application value and development space in education and teaching. In this context, according to the theory of machine science, the effectiveness of several conventional prediction and evaluation methods is analyzed. In this paper, machine learning theory is used to study college students' performance prediction and credit evaluation, as well as teaching quality evaluation and comprehensive ability evaluation in colleges and universities. Questionnaire survey is used to investigate and analyze the results. The effectiveness of machine theory in teaching is analyzed. It is found that machine learning has great advantages in education and teaching evaluation. It builds models in complex computing environment and is not affected by human factors; the effectiveness of prediction and evaluation is significant.

1. Introduction

Nowadays, with the development and popularization of mobile products, people's demand for content information products is increasingly urgent. In contrast, the increase of internal capacity has brought unprecedented pressure on editors and reviewers. Fortunately, with the rapid development of machine learning, also with the research and progress of machine learning theory, part of the work can be done by machine instead of humans, and the advantages brought by the application in all walks of life are gradually reflected.

Since China implemented the national policy of opening to the outside world, with the globalization of economy, the diversification of convenient information and ideas, and the invasion trend of various foreign cultures, people are easy

to lose the ability of independent judgment of right and wrong thinking and lack of cultural identity with China's socialist mainstream ideology [1, 2]. In the National Congress, the Communist Party of China (CPC) clearly stated that the fundamental task of "cultivating people and moral education" is not only the general direction of China's education but also the fundamental task of China's education. At the 2016 National Conference on Ideological and Political Work in Colleges and Universities, comrade Xi Jinping, the vice president of the state, pointed out that colleges and universities should clarify the importance of ideological and political education and put forward suggestions on how to do well in education and teaching in colleges and universities. According to the 13th five-year plan for the development of national education issued by the State Council in 2017, it is

necessary to cultivate high-quality talents with all-round development of morality, intelligence, sports, and beauty and train socialist builders and successors. The report of the 19th National Congress of the Communist Party of China in 2018 also stressed that education should be built as the basis for the great rejuvenation of the Chinese nation [3]. It can be seen that only by firmly grasping the leading power of ideological work in the field of education can we adhere to the goal that education must serve the socialist modernization. This is also the realistic background of this paper, that is, how to popularize the effectiveness of machine science theory in education evaluation.

The new era calls for new talents, the society needs high-quality talents, and education needs the cultivation of talents. In order to adapt to the environment of education in the new era, the traditional teaching concept, content, and method are undergoing a great change. The traditional teaching [4] has been unable to meet the needs of the current social environment for the overall ability of students, and it is an important component of the education reform that cannot be ignored. After years of continuous research and exploration, on the whole, the traditional teaching mode in China has not made substantial and fundamental progress, and many reforms are still in the form and on the surface. The whole teaching activity focuses on classroom teaching. Classroom teaching activity is mainly based on teachers' teaching and students' passive acceptance. It does not fully mobilize students' enthusiasm and initiative, it is not good to cultivate students' habits and abilities of active learning, and it is almost certain to form students' own personality and perfection. It also makes the classroom the main place to stifle students' innovative spirit and sense of responsibility.

Examination is the main form to test students' learning and teaching effect. Through the above discussion, we can know that it is an important part of education evaluation to evaluate students' learning effect accurately and objectively through examination results. The objectivity of examination results is not only related to the objectivity of students' learning level and ability evaluation but also to the objectivity of teachers' teaching ability and teaching effect evaluation. There are many objective factors that affect the test results, such as test paper quality, invigilation, grading, and students' ability level. The examination paper is composed of many questions. The quality of the examination paper is closely related to the quality of the examination paper. For example, in an exam, students' scores are generally low, because of the difficulty of the exam paper, students feel depressed, because of the exam, and so they can learn negatively. Or because the difficulty of the test paper is too small, the test results of students are generally on the high side, which will make students have self-expansion and pride. These factors will lead to the evaluation result of students' learning effect being not objective. However, students play an important role in the teaching management and evaluation of teachers. Students can use evaluation methods to reflect the situation of teachers' classroom teaching. Teachers can use students' evaluation of teaching results to reflect their own teaching effect and improvement. The school can also understand the individual teaching situation and the overall teaching level of teachers

through the analysis of students' teaching evaluation data, so as to put forward corresponding training plans and effective education management measures. Since the implementation of student evaluation, it has become a routine work of teaching management in colleges and universities. In view of this problem, this paper investigates the teaching evaluation of students at home and abroad and finds that it is necessary to analyze the teaching ability in more detail in the information feedback of teachers. A large number of student evaluation data have been accumulated, which can provide more information for teachers' teaching ability. Based on this idea, this paper puts forward how to make full use of the evaluation data of students and make more effective use of machine theory to evaluate and diagnose teachers' classroom teaching ability.

Therefore, the main research work of this paper is as follows: it analyzes the education of existing evaluation methods, focuses on the analysis and research of some related problems of evaluation methods, discusses how to apply them to the comprehensive evaluation decision-making problems, and analyzes the characteristics and limitations of the methods. This paper discusses the support vector machine and neural network technology and their application in the comprehensive evaluation, especially the learning algorithm of support vector machine [5] and neural network [6]. Based on the comprehensive evaluation of students' test scores, the paper analyzes the factors that affect the quality of test papers and uses the theory of machine science to predict the scores. In this paper, the comprehensive evaluation of students' academic examination results is taken as the research object, the comprehensive evaluation and prediction based on machine learning theory are discussed, and the effectiveness of the evaluation and prediction is simulated and analyzed.

2. Conventional Machine Learning Theory

2.1. Concept of Machine Learning. Machine learning [7] is an interdisciplinary subject, involving probability theory [8], statistics [9], approximation theory [10], convex analysis [11], computational complexity theory [12], etc. Machine learning is to study how to improve the performance of the system through the use of intelligent computing and experience. The corresponding algorithm model is generated by experience, and the generation process of algorithm model is actually the process of machine automatic learning. It is these learning algorithms that machine learning studies. The generation of learning algorithm includes the process of simulating human thinking learning, the process of reasoning incomplete information, the process of constructing new things discovery, and the process of processing current big data trend. At present, machine learning algorithms are mainly divided into supervised learning algorithm, unsupervised learning algorithm, and semisupervised learning algorithm. Among them, supervised learning is generally divided into regression algorithm and classification algorithm. Regression is a method of using continuous functions to correspond to input and output variables. Classification is the matching of input variables and discrete categories.

Unsupervised learning means that we do not know in advance what the output will be. For example, we can extract a special structure from the data by clustering. There is no label or only one label in unsupervised learning. Semisupervised learning is a learning method combining supervised learning with unsupervised learning. In the process of machine learning, there are both marked data and unmarked data. Using semisupervised learning can improve the efficiency and accuracy of learning.

2.2. Support Vector Machine. Support vector machine (SVM) [5] is a binary classification algorithm supporting linear and nonlinear classification. After evolution, it now supports multivariate classification and is widely used in regression and classification. SVM was proposed by Vapnik et al. in 1963. It solves the problems encountered in traditional methods and can solve nonlinear, small sample, and high-dimensional problems well. Practical tests show that this method performs well in these aspects and has become an indispensable part of the machine learning field.

SVM can be simply described as the classification of sample data, and the real decision function is to solve. First, the maximum classification interval is found, then the optimal classification hyperplane is determined, and the classification problem is transformed into a quadratic programming problem. By using the Lagrangian optimization method, the element problem is transformed into a dual problem and then into a convex quadratic programming problem. In this process, if the sample points are linear and indivisible, relaxation variables must be introduced to solve the optimization problem. If the sample is nonlinear, the kernel function is used to solve the problem.

Since the birth of support vector machine (SVM), it has swept the field of machine learning with its good classification performance. Since the 1990s, it has developed rapidly and derived a series of improved and extended algorithms, including C-SVC, least squares support vector machine, support vector regression, support vector clustering, and semisupervised support vector machine. This paper uses C-SVC, which is an extension of standard support vector machine. The optimization of C-SVC is as follows:

$$\begin{cases} \min L(w, \xi) = \frac{1}{2}w^t w + \frac{c}{2} \sum_{j=1}^h \xi_j^2 \\ \text{s.t. } y_i^{t+1} = w^t \Phi(x_{j,d}^t) + b + \xi^2. \end{cases} \quad (1)$$

In this formula, ξ^2 is a nonnegative relaxation variable; $c/2$ is the given regularization parameter.

The optimization problem of multiclassification SVM is transformed into the solution of visualization equation, and the final classification function is as follows:

$$y_i^{t+1} = \sum_{j,q=1}^h \alpha_g K(x_{j,d}^t + x_{q,d}^t) + b, \quad (2)$$

where $x_{j,d}^t + x_{q,d}^t$ is the kernel function. The function of kernel is to map the nonlinear problems in low-dimensional space to high-dimensional space and transform them into linear problems. At present, the commonly used kernel function types are as follows:

- (1) Linear kernel function
- (2) Polynomial kernel function
- (3) Gaussian radial basis kernel function
- (4) Sigmoid kernel function

At this time, C-SVC is a multilayer perceptron including the hidden layer, and the algorithm automatically determines the number of nodes in the hidden layer. Support vector machine is an introduction to machine learning theory. For the same data, SVM with different kernel functions can get different classification accuracy.

To sum up, SVM has good generalization ability in nonlinear classification, function approximation, pattern recognition, and other applications and gets rid of the long-term constraints of building learning machine from the perspective of bionics. Compared with analytic hierarchy process (AHP) [13], logistic regression analysis [14], and BP neural network [15], support vector machine (SVM) has a more solid mathematical theoretical basis and can effectively solve the problem of constructing high-dimensional data model with limited samples.

2.3. AHP. Analytic hierarchy process (AHP) is a decision-making analysis method put forward by Soary of University of Pittsburgh in the 1970s [16]. Because decision-making itself is an evaluation behavior, AHP has been widely used in the field of evaluation. This section mainly introduces the application of AHP in education evaluation.

(1) *The Basic Idea of AHP.* The process of establishing evaluation model by AHP is actually a program structure of evaluation. Through qualitative analysis, the relationship between the factors reflecting the value of the evaluated object is established, and the hierarchical structure chart reflecting the relationship between these factors is established. Using the hierarchy chart of logical judgment and establishment, the importance of two factors is compared under the direct upper factor, and the comparison matrix is established. When the eigenvector corresponding to the maximum eigenvalue of the comparison matrix is converted into the weight (standard) vector, the value of the standard vector component is a quantitative value, indicating the importance of the factor relative to other factors under the same upper factor.

For the object that can be quantitatively evaluated by linear method, the quantitative value obtained by AHP method can be used as the weight of each evaluation index that affects the evaluation result, and the comprehensive evaluation result value of the evaluated object can be easily obtained.

(2) *The Main Steps of Establishing AHP Model [17]*. Analytic hierarchy process (AHP) reflects the basic characteristics of people's evaluation and decision-making thinking: decomposition, judgment, and comprehensive thinking process. The main steps of applying AHP method to evaluation and decision are shown in Figure 1.

Step 1. The first step is to analyze the factors (i.e., evaluation indexes) that affect the value of the evaluated object and determine the value objectives (i.e., evaluation objectives) of the evaluated object.

Step 2. According to the evaluation objectives, analyze whether the factors affecting the value of the evaluated object are hierarchical and linear. If so, construct a hierarchical diagram that reflects this relationship and move on to the next step.

Step 3. Compare the factors at the same level with the same dominant factors as the evaluation criteria, establish a comparison matrix (some data are also called judgment matrix), and determine its relative importance according to the evaluation scale. The establishment of contrast matrix is the key step of evaluation decision. The evaluation scale used to establish the comparison matrix is shown in Table 1.

Step 4. Through a certain calculation, determine the relative importance of each factor in this level relative to a factor in the previous level, i.e., single ranking of the levels.

Step 5. Verify the consistency of the comparison matrix to ensure the reliability of the results. If there is any inconsistency, go back to Step 3 and modify the contrast matrix again. If it is an acceptable consistency matrix, continue.

Step 6. After calculating the relative importance of the factors in each layer relative to the factors in the previous layer, the comprehensive importance of the factors in the current layer to the whole of the previous layer can be calculated from top to bottom, that is, the overall arrangement of the layers.

Step 7. Check the consistency of the overall sorting results of the hierarchy. If there are any inconsistencies, go back to Step 3 and change it to a comparison matrix. If they are consistent, the sorting results are accepted. Then, get the effectiveness analysis of education evaluation.

2.4. BP Neural Network. The BP neural network is a multi-layer feedforward network [18]. The typical network structure includes input layer, hidden layer, and output layer, where x_i is the input layer, z_j is the output of the hidden layer node, c_t is the output of the output layer node, c_t is the target signal, and i is the input layer node of the hidden layer node. Among them, the connection weight of the hidden layer node j to the output layer node is w_{ij} , and the thresholds of the hidden layer node and the output layer node are, respectively, according to the weight of V_{ij} , θ_j , and γ_i . In practical application, the BP neural network can establish multiple hidden

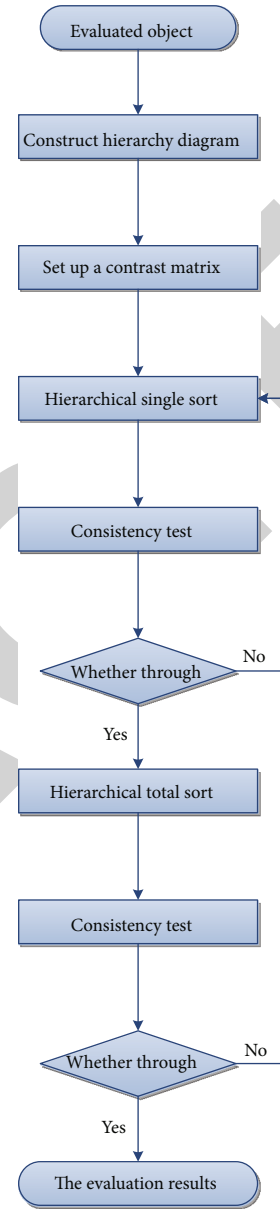


FIGURE 1: Using AHP to make evaluation decision.

layers according to the needs of the problem. The neural network is an explanation of a learning ability in machine learning, and then, it is applied to the effective analysis of education and teaching.

In the structure of BP neural network, each layer is completely interconnected, and there is no interconnection between the elements of the same layer. When an input mode is given in the network, it is transmitted from the input layer unit to the hidden layer unit and then processed by the hidden layer unit to the output layer unit, resulting in an output response. If the error output response and the expected output do not meet the requirements, the error connection path will be followed one by one, and the correct connection weight and threshold of each layer will reduce the error, modify the connection weight and threshold, and then use a new connection weight and threshold to calculate the input

TABLE 1: Factor comparison judgment scale.

Comparison results	Value
For the upper level factor H , A_i and A_j are equally important.	2
For the upper level factor H , A_i is more important than A_j .	4
For the upper level factor H , A_i is significantly more important than A_j .	6
For the upper level factor H , A_i is much more important than A_j .	8
For the upper level factor H , A_i is extremely important than A_j .	10
For the upper level factor H , between two adjacent judgment scales.	1, 3, 5, 7

mode to generate an output response compared with the expected output, through iterative calculation, until the error is less than the given value.

The BP learning algorithm is a learning algorithm with tutor [19]. The BP learning algorithm is divided into two stages: input forward calculation and error back propagation. Taking the three-layer BP neural network as an example, it is assumed that the activation functions of neurons in the output layer and hidden layer can be found in the network $f(u) = 1/(1 + e^{-u})$. There are p neurons in the hidden layer. The whole learning process can be divided into the following steps, as shown in Figure 2.

3. Effective Evaluation Method of Machine Theory in Education Evaluation

3.1. Prediction of College Students' Performance. The BP neural network is a multilayer feedforward network. The basic principle of comprehensive evaluation [20] is to take the information describing the characteristics of the evaluation object as the input vector of the neural network and the value representing the corresponding comprehensive evaluation as the output of the neural network. Then, enough samples are used to train the network, and different output values of different input vectors are obtained. If the error between the output value and the expected value exceeds the specified error range, adjust the weight of the neural network according to the error according to a certain method, the connection between each layer and the value of the hidden layer and the output layer nodes, until the system error is acceptable, and the weight and Fujian price value will not change anymore. In this way, the weights and thresholds held by the neural network are the correct internal representation of the neural network through adaptive learning. The trained neural network can be used as an effective tool for qualitative and quantitative evaluation of the target system outside the sample model.

Therefore, the basic idea of applying the BP neural network to the comprehensive evaluation of examination results is to use four evaluation indexes to evaluate the quality of examination papers (reliability, effectiveness, difficulty, and differentiation degree) and the original points (that is, the

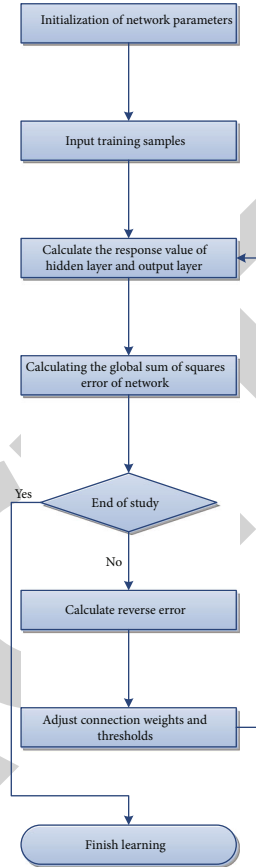


FIGURE 2: Flowchart of BP model training.

scores of students' examination papers) to form the input vector of BP neural network and use value (that is, the quantitative value of learning effect) to form the output vector of the BP neural network. The quantitative value of physical fitness is also output as a vector. Design a reasonable network structure and training samples, input the training samples into the network operation, until the comprehensive evaluation model test results need the system error of the network model, and it can meet the specified requirements.

3.2. Credit Evaluation of College Students. With the rapid development of the times, especially the rapid progress of the market economy, China's overall economic level has been greatly improved. In view of the frequent occurrence of lack of credit in society, this paper adopts the establishment of citizen credit files based on machine learning theory. As the main force of social development, college students began to establish credit files on the basis of machine learning theory in the first year of university, which has been the starting point of the construction of college students' credit files since the student era. At present, the problem of college students' lack of credit often occurs, which is not only the objective cause of college students' lack of credit awareness but also the impact of social environment. The establishment of credit files based on machine learning theory can not only effectively improve the credit awareness of college students but also improve the ideological and moral level of college

students, which is conducive to the harmonious development of society. The author believes that the reasons for college students' dishonesty are closely related to their credit awareness. In order to prevent this kind of phenomenon, it is the best choice to establish college students' credit files. As a group with high comprehensive quality, they should build credit files based on machine learning theory. College students shoulder the important task of social development, so as to cultivate their comprehensive quality, let them better display themselves after entering the society, improve their credit awareness, and choose to build credit files based on machine learning theory, which is undoubtedly the best choice. In this paper, the author uses the experience of domestic and foreign countries for reference to establish credit files and, on the basis of in-depth analysis and discussion of relevant research, establishes the machine learning theory of credit files in the academic field, which can help China to better establish credit files for college students to assess their credibility.

Under the condition of a large population, the construction of college students' credit files can better establish a social credit system. In view of the frequent occurrence of social credit crisis, it is necessary to establish and improve the credit mechanism documents. For the commercial credit system of social development, the credit file system should be gradually established from the college students' credit files. It is necessary to use the system in the future university credit documents and improve the credit documents and settings, which can better guide the university to implement the credit system. It is not only of high education quality, the credit of the evaluation is divided into credits to improve the education of students' credit and responsibility, but also of strong sense of social responsibility, which is of guiding significance for the development of the credit system.

3.3. Evaluation of Teaching Quality in Colleges and Universities. There is less research on teachers' teaching ability; Professor Sun said, "the research on how to form the limited literature research university teachers' teaching ability and teaching ability is the least, and the teaching ability to improve teaching ability is more important." This is a good summary of the existing research on the teaching ability of university teachers, but we still need to see the efforts of researchers. The existing teaching ability of university teachers is mainly to decompose the teachers' ability from the perspective of teachers. For example, from the perspective of the general law of teaching activities, Zhou Yuanyuan thinks that the structural teaching ability of teachers includes the ability to organize and monitor teaching, the ability to communicate with teachers or other students, the ability to use modern technology and information, and the ability to conduct teaching research and lifelong learning. Tian Jinmei et al. constructed a conceptual model of teachers' teaching ability, including teaching ability, knowledge promotion ability, training ability, and method and tool application ability [21], by studying the current situation of teachers' teaching ability at home and abroad and combining with many factors such as teachers' living environment.

The structure of teachers' teaching ability ignores the main body of students in teaching. For example, Dean Dong of Higher Education Research Institute of Yunnan University said, "the students of Yunnan University are not the purpose of education, but the service object. On the premise that targeted teachers understand the needs of students, combined with the existing structure of teachers' ability, paying attention to teacher development can help teachers develop professional skills and form a harmonious relationship between teachers and students."

The structure of teachers' teaching ability is stipulated in teachers' standard, including basic methods of teaching major [22], teaching plan and preparation [23], teaching management, teaching evaluation [24], and teaching methods and strategies. According to this standard, the corresponding evaluation scale of teachers' teaching quality is established, that is, the scale is the evaluation of students' using school. This is the expectation of teaching managers of teachers' teaching ability structure. Students' behavior in teachers is based on the scale of compatibility, in which a certain gap of students' and teachers' ability is worrisome. This study uses the machine theory to analyze the teaching evaluation data of students, and from the perspective of students to rename and explain the factors mined, it also evaluates from the perspective of teachers, to make a scientific and rigorous teaching evaluation, from which we can infer the teaching quality of the school.

3.4. Evaluation of Comprehensive Ability of Colleges and Universities. At present, scholars have not formed a unified understanding of "university comprehensive ability" [25]. Some scholars believe that from a macro perspective, the composition of the comprehensive ability of colleges and universities can be divided into two aspects: hard power and soft power, which is the result of the synergy of hard power and soft power. The expression of hard power is the sum of components in material form, mainly including human (teacher resources, student status, etc.), financial (economic status, etc.), material (fixed assets), and other hard indicators that can be measured and quantified. Soft power refers to the level of school management (school vitality and school efficiency), school characteristics (school tradition and social prestige), school spirit and cohesion, and other nonmeasurable or hard to quantify soft indicators. "Comprehensive ability of colleges and universities," in a broad and narrow sense, refers to the comprehensive ability of regional higher education relative to a country or a region [26]. It is the influence of strength, resources, competitiveness, and innovation of colleges and universities, including the democratic political environment, sustained economic development, harmonious cultural atmosphere, good higher education foundation, development potential, colleges and universities and many other people, commodity content, information, resource power, and top professors, standardized management, advanced equipment, excellent core competitiveness and creativity research, the impact of talent training quality, the transformation of scientific research results, and the degree of internationalization on economic and social development; in a narrow sense, it refers to colleges and universities with

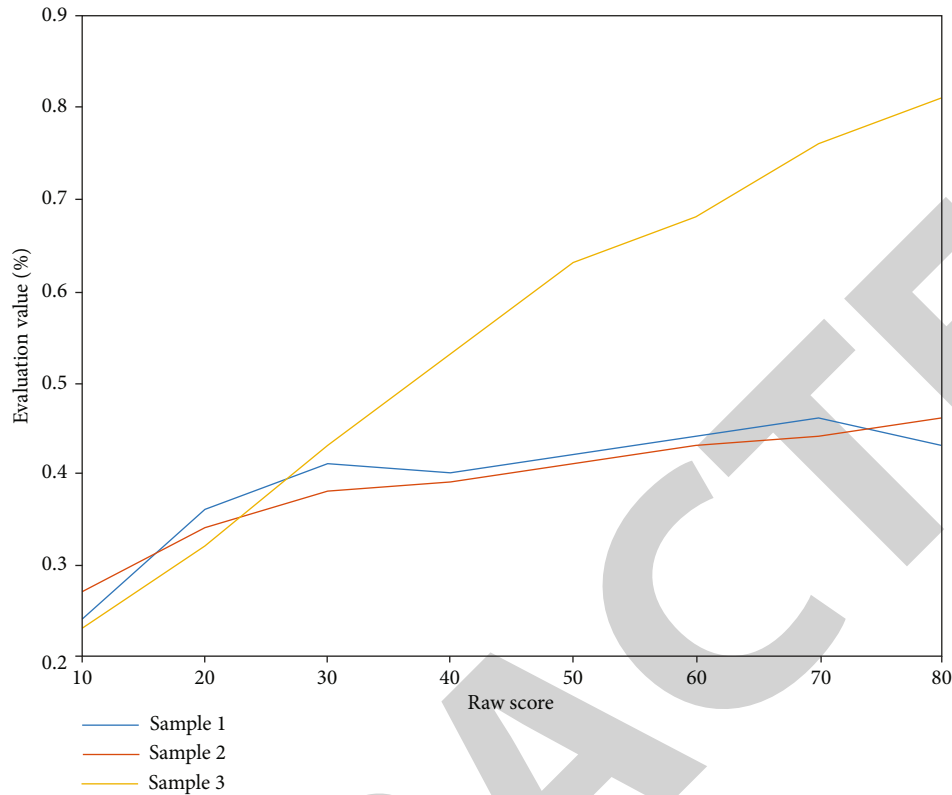


FIGURE 3: Comparison of simulation results and curves.

operation intensity and operation level, including the principles and guiding ideology of the school, the quality of teachers and students, education funds, infrastructure, professional construction, scientific research efficiency, management level, and the reputation of the school. Combined with these two aspects, this paper mainly studies the overall strength of Guangxi institutions of higher learning from a general point of view, which is to cultivate talents, scientific research, and social services and support these functions to achieve the required education philosophy, education funds, teaching staff, science construction, infrastructure, organizational management, and other conditions [27, 28]. They are the core factors of comprehensive ability evaluation in colleges and universities.

The core of the comprehensive strength evaluation of regional colleges and universities is to establish a scientific, systematic, and operable evaluation index system. It itself is a very complex system engineering, which not only requires researchers to study the development logic of the university itself based on the university and in-depth but also the university to break through and master the macro external environmental factors affecting the comprehensive strength of the university, such as the university, social politics, economy, and culture. Therefore, using the theory and method of machine science to study the comprehensive strength of colleges and universities and its influencing factors and on this basis to build a scientific evaluation index system, this system is used as an evaluation standard to conduct research on the comprehensive ability of other schools.

4. Results and Discussion

4.1. Analysis of the Results of College Room Performance Prediction. In order to verify the influence of machine learning theory in the evaluation of education and teaching, this paper takes the results of the “data structure” course of college students’ school in the past three years as an example to form three groups of test samples, using the evaluation model of machine learning theory, through simulation calculation as shown in Figure 3.

Figure 3 shows the comparison curve of simulation results of three groups of samples. It can be seen from the figure that the original scores of each group of samples increase with the increase of evaluation value, which is consistent with the original scores and evaluation values of qualitative relationship between people’s understanding, indicating that the model established in this paper is reasonable to a certain extent. However, according to people’s understanding, under the same original score, the evaluation value of three groups of samples should also show an upward trend, that is, the evaluation value of sample 2 should be greater than the evaluation value of sample 1 and less than the evaluation value of sample 3. However, Figure 3 does not reflect this trend well, which shows that the model established in this paper still has shortcomings. The main reason is that the accuracy of the training samples used to establish the evaluation model is not enough. The existence of certain errors also leads to the defects of this model.

4.2. Analysis of Credit Evaluation Results of College Students. In order to verify the influence of machine learning theory on

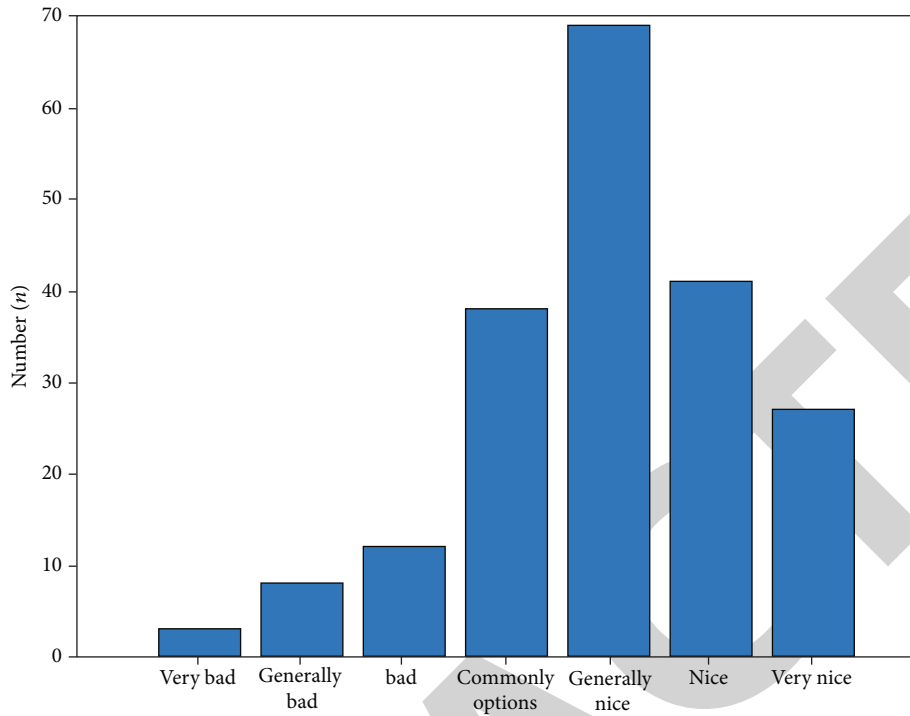


FIGURE 4: Credit conditions.

education credit evaluation, 201 college students are selected for questionnaire survey, as shown in Figure 4.

In the survey results of college students' credit status, 38.26% of the students think that the overall credit status of college students is good and needs to be evaluated, and the credit evaluation based on machine science theory has great advantages; 22.68% of the students think that the overall credit status of college students is good and should be properly supervised; 14.36% of the students think that the overall credit status of college students is good and does not need to be evaluated. Through the above data analysis, we can see that most students are optimistic about the overall credit status of college students. It shows that some learning education does not link credit with credits, which leads to some students not paying enough attention to credit. However, some students think that the credit status of college students is not very good, so colleges and universities need to evaluate college students in time to improve their credit awareness.

4.3. Analysis of Teaching Quality Evaluation Results in Colleges and Universities. The data used in this paper is from the teaching evaluation data of 20 teachers in a department of Changchun University of Technology. A total of 80 students participated in the scoring, and a total of 1300 records were obtained. In order to interpret the teaching ability of teachers from the perspective of students, it is also hoped that the samples can keep stable. Therefore, the average value of the original data is taken as the overall summary of students' evaluation of teachers as shown in Figure 5.

From the ideological data in the figure, it can be seen from the evaluation results that the main factors determining the basic teaching skills are teachers' sufficient preparation

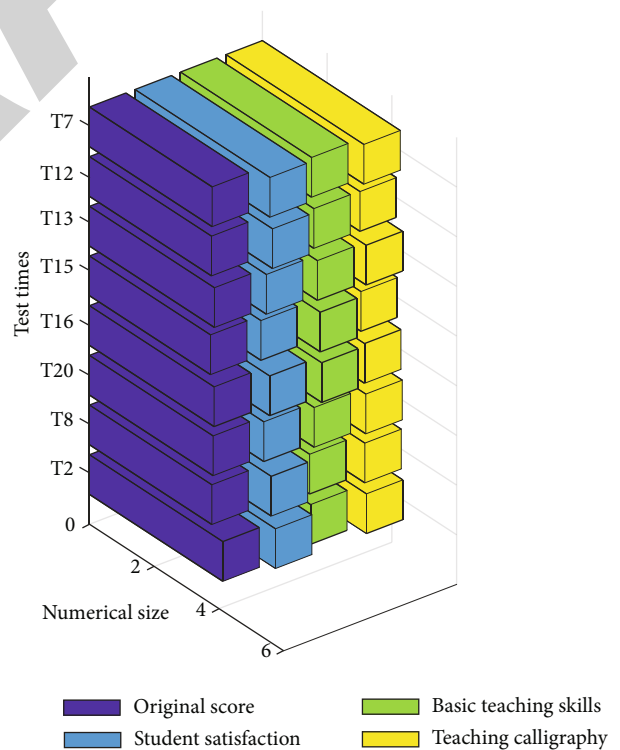


FIGURE 5: New summary results.

for lessons and serious investment in teaching, and other indicators have no direct impact on the basic teaching skills. These factors indicate that these factors should be emphasized in the evaluation of teaching.

TABLE 2: Ranking of universities in Guangxi.

Colleges and universities/ranking system	Ranking of online universities							
	2012	2013	2014	2015	2016	2017	2018	2019
Guangxi University	178	139	188	78	65	183	155	178
Guangxi Normal University	319	210	203	198	157	178	89	53
Guangxi Medical University	115	102	74	135	173	120	67	85
Guangxi University for Nationalities	332	309	298	314	243	267	210	289
Guilin University of Electronic Science and Technology	374	365	385	342	339	376	392	332
Guilin Institute of Technology	259	240	254	232	324	206	214	229
Guangxi College of Traditional Chinese Medicine	429	416	447	438	356	439	448	410
Guangxi Normal University	539	512	534	552	574	502	498	488

4.4. *Analysis of Comprehensive Ability Evaluation Results of Colleges and Universities.* By analyzing the comprehensive ability of colleges and universities and its influencing factors and combining the comprehensive ability evaluation system of colleges and universities with the principles and methods of construction, we take Guangxi colleges and universities as an example and use the theory of machine science to evaluate the comprehensive ability of colleges and universities, and the content is shown in Table 2:

According to the ranking results of Guangxi and 8 normal universities planned for key construction, the national key universities rank only Guangxi University, while other universities rank below the average level in the country, ranking in 300 ordinary universities, which shows that Guangxi university education is not high. At the same time, from the ranking of Guangxi universities, some are on the rise and some are on the decline. These can reflect the quality of higher education. The position and stability of the rankings reflect whether the quality and development level of higher education in the region is lower or higher than the national average.

5. Conclusion

It is very important to accurately express the results for various aspects of prediction and evaluation and various factors mentioned in this paper. No matter which learning machine predicts any problem, colleagues need to establish a model from the cause to the result, which mainly uses the existing information and problems related to such information to make reasonable inference, so as to deduce the results. For example, the credit detection of college students mentioned in this paper, some of which are known, can be used for the simulation training of the machine learning system. As proposed in this paper, the use of machine learning system can avoid the uncertain factors of human evaluation. It is not only the respect for teachers but also the affirmation of their teaching level to evaluate and evaluate the education level fairly and reasonably according to the various indicators of teaching quality. This paper also finds that this method can be used in the intelligent learning algorithm to predict a wider range, such as population prediction and risk prediction. This method plays an important role in the future evaluation and prediction to promote the development of

the education industry and build the infrastructure for the future development of the education industry.

Data Availability

No data were used to support this study.

Conflicts of Interest

The authors declare that they have no conflicts of interest.

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