

## *Retraction*

# **Retracted: Research on the Innovation of Music Teaching in Universities Based on Artificial Intelligence Technology**

### **Security and Communication Networks**

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This article has been retracted by Hindawi, as publisher, following an investigation undertaken by the publisher [1]. This investigation has uncovered evidence of systematic manipulation of the publication and peer-review process. We cannot, therefore, vouch for the reliability or integrity of this article.

Please note that this notice is intended solely to alert readers that the peer-review process of this article has been compromised.

Wiley and Hindawi regret 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 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] J. Shi and Q. Ning, "Research on the Innovation of Music Teaching in Universities Based on Artificial Intelligence Technology," *Security and Communication Networks*, vol. 2022, Article ID 3140370, 9 pages, 2022.

## Research Article

# Research on the Innovation of Music Teaching in Universities Based on Artificial Intelligence Technology

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At present, music education in colleges is in a period of rapid development in China. At the same time, music education in universities is facing innovation and reform of teaching modes. How to improve music education in colleges and universities has become an important issue for music teachers in colleges. Music teaching and management activities for students in general universities can enrich students' talents and expand their knowledge. It can also help them develop a positive emotional psychology and develop positive and healthy character characteristics, both of which are vital for college students' healthy development. Innovation and modification in music teaching and management activities for students is the only way to increase the quality and effectiveness of music teaching for nonarts students and to promote the overall quality of students. Based on this, this paper proposes an innovative research method of college music teaching based on artificial intelligence technology. The method introduces a fuzzy evaluation algorithm to establish a two-level teaching evaluation index system and calculates the weights of each index based on fuzzy mathematical theory. In data processing, the SVM algorithm in the field of data mining is used to classify all collected teaching evaluation data in advance through supervised learning, which significantly improves the efficiency of data processing. The experimental results show that the model in this paper can well assess the quality of music teaching in colleges and universities and play a role in promoting the progress of music teaching in colleges and universities.

## 1. Introduction

Music teaching in universities can cultivate college students' sentiments, cultivate their artistic comprehension, and enhance their music literacy. In the time of new media, music education in colleges and universities can make use of the features of new media, such as a large amount of information and strong interactivity, to achieve more teaching possibilities and produce better teaching properties [1]. It can also make use of more media resources to enrich teaching content. Although the new media environment for music teaching has been generally created in China's universities, there are still problems such as low investment, inadequate preparation of the environment, and teachers' inability to adapt their teaching concepts to the new media [2]. Therefore, it must be solved in terms of capital investment

and teacher team building, reforming music teaching content, and finally adapting to the growth of the times.

New media integrates network technology and digital technology and is a digital media form and environment [3]. We believe that when music education is reoriented, it will be the day when the music quality of the majority of secondary school students will be improved [4]. If our media do not cooperate and guide the education sector well, then we can only talk about music education innovation, but not about the quality education function of music education. On the one hand, music teaching is in a digital media environment, and students have a stronger ability to absorb and perceive music information. The effect of interaction between teachers and students is stronger, and the improvement of music appreciation can be continuously achieved in communication and feedback [5]. On the other hand, the

new media provides more music audition resources for colleges and universities and also has some socially cutting-edge information and resources, which enables teachers and students to make more quality resources for screening [6]. Students can gain access to more resources with the use of digital information without being constrained by time or space constraints. This entails both the coordination of the bilateral interaction between teaching and learning as well as the overall placement of the educational environment. The classification of music teaching in colleges and universities is shown in Figure 1.

In contemporary society, new media has become a trend and a trend. The music itself has an endless charm and an irreplaceable role in shaping a healthy mind and infecting people's moods. Particularly for college students, music can give them the strength to move forward on the road of confusion, let them put aside their complicated thoughts and quietly think, and give more life enlightenment and wisdom [7]. First and foremost, we cannot disregard the potential of contemporary new media in music education reform, especially since new media may play a crucial role in students' physical and mental health, character development, and personality development. Moreover, contemporary college students cannot live without new media, which lays the foundation and power for new media in music teaching reform. The advent of the new media era has given music teaching reform infinite possibilities [8]. Teachers should make full use of the opportunities of the new media era to realize music teaching reform, to obtain qualitative improvement in the process of continuous quantitative accumulation, and finally to make music teaching full of modernity and freshness, and to become one of the most favorite courses for students [9]. This paper proposes an innovative research method of college music teaching based on artificial intelligence technology. The method introduces a fuzzy evaluation algorithm to establish a two-level teaching evaluation index system and calculates the weights of each index based on fuzzy mathematical theory [10]. In data processing, the SVM algorithm in the field of data mining is used to classify all collected teaching evaluation data in advance through supervised learning.

Many colleges and universities have not used new media in a long time; they are still in the early stages of music education reform. Many professors, in particular, are just using existing new media technology to reformulate the curriculum structure. Teachers should take full advantage of the new media era's opportunities to reform music education, achieving qualitative improvement in the process of continuous quantitative accumulation, and finally, infusing music education with modernity and freshness, making it one of the most popular courses among students. This study presents a novel artificial intelligence-based research strategy for college music instruction.

The paper section-wise studies are as follows:

Section 2 determines the related work. Section 3 introduces the design of the application model. Section 4 analyzes the various experiments and get the result. Section 5 ends the article.

## 2. Related Work

This chapter introduces the related work: firstly, the problems of music teaching in colleges and universities, followed by the current research status of fuzzy evaluation algorithm, and then the current research status of the SVM algorithm.

*2.1. Problems of Music Teaching in High Schools.* New media is a current trend and one of the avenues for future educational advancement. Only by fully utilising current new media technology will music education reform achieve the desired outcomes. As a result of the current educational reform, the vast majority of colleges and universities have begun to use new media resources to implement music teaching reform in order to achieve better teaching effects, resulting in a comprehensive music curriculum reform [11]. Therefore, colleges and universities are having difficulty in funding new media technologies and music resources to meet the needs of curriculum reform. Not only is it difficult for teachers to carry out lively and interesting teaching with school resources, but students also do not gain more appreciation of music from effective resources [12]. It can be reflected that once the investment in music teaching reform is insufficient, it is difficult for teachers to use multimedia at the most realistic level, much less to implement the most creative reforms in the current new media environment. In the end, the reform effect will be lost, and the music teaching reform will become a mere formality [13].

Although new media technology has been introduced into colleges and universities and combined with music subjects, the current educational philosophy and teaching reform cannot adapt to the requirements of the development of the new media era. Since many colleges and universities have not introduced new media for a long time, they are still in the fumbling stage in music teaching reform; especially many teachers are only combining the current new media technology means when reformulating the curriculum system [14]. In the classroom, they use the audio, video, and picture resources that can be downloaded by new media, as well as the hardware facilities for teaching such as interactive whiteboard to complete the teaching, but the innovation, practicality, and interactivity have not yet reached the new requirements, and the students are not very interested in the content that the teachers can show and can search through the Internet by themselves [15]. The teaching content to be reformed by teachers should combine new media and music teaching systems with a certain degree of innovation and openness in order to make teaching achieve the established effect. The proposal of all-round quality education is an important part of China's talent training and reserve at this stage, and the development of music and art education in colleges and universities is an important initiative to realize quality education in China [16]. In a word, the arrival of the new media era has given college education a new opportunity for expansion and brought many challenges. Colleges and universities should seize this opportunity to deepen the music teaching reform, change the traditional teaching idea in the past, and fully combine the new media technology and

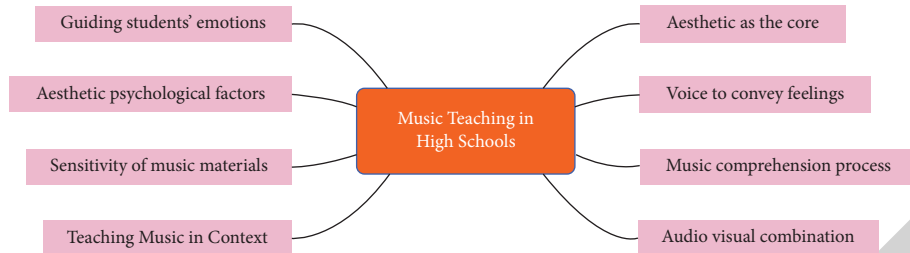


FIGURE 1: Classification of music teaching in colleges and universities.

the environment with music teaching [17]. They should implement good interaction with students, provide an open and innovative teaching environment, and finally cultivate well-rounded music talents with high quality and strong professionalism.

**2.2. Current Status of Research on Fuzzy Evaluation Algorithms.** In the practical application of FCM, users must determine the number of clusters and the evaluation of the partition performance, which are problems of cluster validity. To address these issues, researchers have proposed many clustering validity metrics in the literature [18]. In clustering research, the validity of clustering has been a hot topic. Internal validity indicators, external validity indicators, and relative validity indicators are the three types of validity indicators used in clustering, according to scholars [19]. First, the internal validity indexes mainly evaluate the clustering classification results in terms of tightness, separateness, connectivity, and overlap from the information of geometric features of the clustered data set in turn [20]. Clustering is an unsupervised learning process, so external information is basically not available, while internal validity metrics are most widely used. Second, the external information of clustering mainly indicates the true division of the dataset itself, and when external information is available, external validity metrics can be used to assess the quality of the division [21]. Third, the relative validity index determines the optimal number of clusters and the optimal clustering division by determining a decision objectively and is using different sets of parameters to execute the clustering algorithm, based on the original clustering criterion to evaluate the clustering division results [22]. The composition structure of fuzzy comprehensive evaluation is shown in Figure 2.

Other types of scenarios are also included in cluster validity indicators, such as stability-based validity indicators, biotype-based validity indicators, and correlation indicators [23]. On the other hand, using the different components of cluster validity indicators as a classification criterion, the indicators can also be divided into those based on the geometric structure type, those based on the affiliation type, and those based on the combination of both types of validity indicators [24]. Clustering analysis, an important field of data mining, has attracted the attention of numerous scholars. Fuzzy clustering breaks the traditional hard clustering principle of “either 0 or 1” and introduces the affiliation matrix to reasonably analyze the fuzziness in data sets.

The number of clusters cannot be determined in the enhanced global fuzzy clustering algorithm, which is a significant unsolved challenge [25]. Bear in mind that measuring the clustering results of fuzzy clustering algorithms not only takes into account factors such as data fuzzy affiliation and the distance between individual clusters but also requires taking into account the distribution characteristics of the data set itself.

**2.3. Research Status of SVM.** Support vector machines are a new type of machine learning method based on statistical learning theory and have become a hot research topic in the machine learning community due to their excellent learning performance. SVMs are also kernel function-based learning machines, and their generalization ability depends heavily on the kernel function selected [26]. The learning efficiency of SVMs depends on the size of the sample dataset, but the existing SVMs do not achieve the ideal training efficiency for practical problems with large sample datasets [27]. The training efficiency of large sample datasets does not achieve the desired training efficiency. As a result, refinement and optimization of the SVM algorithm are unavoidable if the training efficiency and generalization performance of the algorithm are to be improved further. The mathematical principle of SVM is shown in Figure 3.

For small-scale quadratic optimization problems, mature classical optimization algorithms such as Newton’s method and interior point method can be solved well. However, when the training set is large, the training speed is slow, the algorithm is complicated, and the efficiency is low [28]. At the same time, according to the application effect, it can be improved from itself, such as improving the kernel function method, optimizing the model objective function or parameters in multiple ways, and also improving the final decision rate from the way of model combination [29]. However, the key issues faced by existing training algorithms are how to dissect the large-scale QP problem and how to select the suitable working set, and it is here that the advantages and disadvantages of each technique are highlighted. In addition, the existing training algorithms for large-scale problems do not completely solve the problems faced [30]. Therefore, it is imperative to make reasonable improvements to the existing algorithms or to investigate new training algorithms. The analysis summarizes the background of twin support vector machine technology, its development history and its application targets, and analyzes its performance advantages and shortcomings based on its

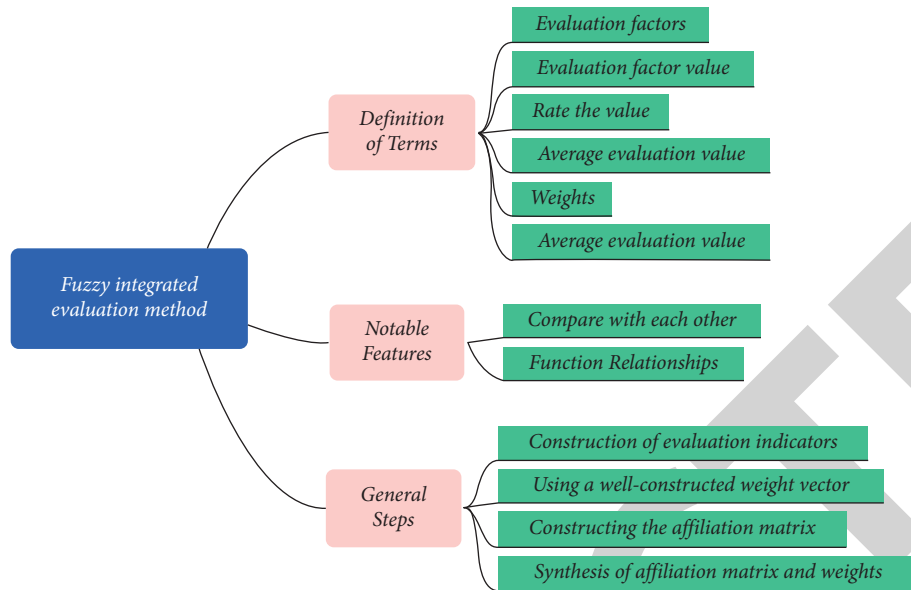


FIGURE 2: Component structure of fuzzy integrated evaluation.

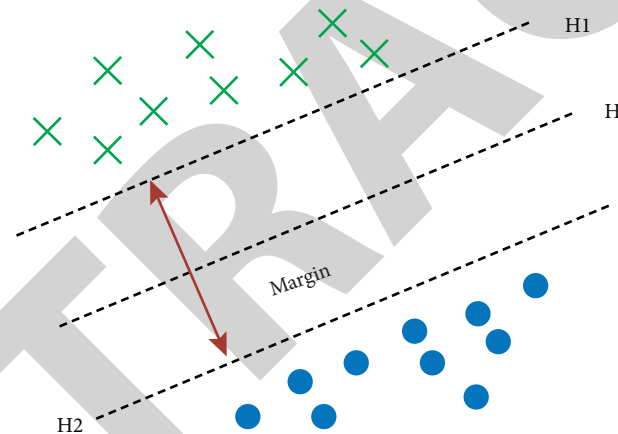


FIGURE 3: Schematic diagram of the mathematical principle of SVM.

strong recognition efficiency and generalization ability. The twin support vector machine technique is an emerging technology that researchers can apply to more complex fields to gain insight into the state of the technology when combined with practical applications.

### 3. Design of Application Model

This chapter details the research on the innovation of college music teaching based on artificial intelligence technology. Firstly, it introduces the basic mathematical principles of fuzzy theory, followed by the mathematical principles of fuzzy evaluation algorithm, and finally the mathematical principles of improved the SVM algorithm.

**3.1. Fuzzy Set Theory Foundation.** In life, when expressing a concept, the meaning of the concept is often stated first, and then the extension of the concept is described. From the perspective of set theory, the connotation is the definition of

a set, and the extension is all the constituent elements of that set. In classical set theory, the domain of the argument, for some any element, there is a relationship between that element and the different sets obeying exactly the rules of binary logic. That is, either belongs to that set or does not belong to that set; it is either/or, and there is no other case. It follows that in the classical set, the connotation and extension of a concept to be expressed are exact. However, it is well known that there are countless ambiguous phenomena in the real world, and the concepts describing them do not have a clear extension.

Fuzzy set theory was proposed by Zadeh in 1965 as an extension of the classical notion of a set. A set represents a collection of objects with specific properties. Let  $U$  be the whole of the objects under discussion; then  $U$  is said to be a thesis domain. Obviously,  $U$  is a set and each object  $u$  in the domain  $U$  is called an element of  $U$ . Let  $A$  be a set on a theoretical domain; this relationship can be expressed as a two-valued function, and the relationship is shown below.

$$u \longrightarrow \chi_A(u) = \begin{cases} 1, & u \in A, \\ 0, & u \notin A. \end{cases} \quad (1)$$

Call  $\chi_A(u)$  the characteristic function of the set  $A$  and the set  $A$  the classical set. In the classical set, the set  $A$  corresponds to the characteristic function  $\chi_A$ . Since the value of  $\chi_A$  is either 0 or 1, the object of study portrayed by the classical set must be well defined, while nothing can be done for the object with blurred boundaries. In nature and real life, fuzzy phenomena are common, so how to expand classical sets to reasonably describe fuzzy phenomena and solve fuzzy problems has become a hot research topic. The argument domain  $U$  can be divided into two cases: one is a finite or columnar set, and the other is a finite continuous set or other cases. If the theoretical domain  $U$  is a finite or enumerable set, the fuzzy set  $A$  can be expressed as the following mathematical expression.

$$A = \frac{A(u_1)}{u_1} + \frac{A(u_2)}{u_2} + \dots + \frac{A(u_1)}{u_2} + \dots + \frac{A(u_n)}{u_n}. \quad (2)$$

If the theoretical domain  $U$  is a finite continuous set or other cases, the fuzzy set  $A$  can be expressed as the following mathematical expression.

$$A = \int_{u \in U} \frac{A(u)}{u}, \quad (3)$$

$$M_{hc} = \left\{ U \in R^s, u_{ij} \in \{0, 1\}, \forall l, k; \sum_{i=1}^c u_{lj} = 1, \forall k; 0 < \sum_j^n u_{ij} < n, \forall l \right\}. \quad (5)$$

The optimal partition matrix and clustering centers are found through continuous iterations. And finally, the objective function is made to reach the minimum value.

$$J_{HCM} = \sum_{j=1}^n \sum_{i=1}^c u_{ij} d_{ij}^2. \quad (6)$$

This section introduces some related theories of fuzzy sets and fuzzy clustering. First, some related theories of classical sets and fuzzy sets are certain in the outline. Then, the types of representation of fuzzy sets are listed and the theory of truncation and decomposition of fuzzy sets is systematically talked about. In response to the above analysis, this chapter proposes to combine the global idea of dynamic programming with the improved clustering centroid selection method. In the process of dynamically increasing the clustering division and selecting the best clustering centers, the dense area of sample distribution is determined by calculating the values of all data objects, excluding sparse areas, and reducing the influence of peripheral isolated points on the clustering results.

### 3.2. The Basic Principle of the Fuzzy Evaluation Algorithm.

where  $A$  denotes a generalization of the correspondence between each element and the affiliation degree. It is well known that unlike classical sets with well-defined boundaries, fuzzy sets rely entirely on their affiliation functions for their description. The affiliation degree is used by all elements in the domain to determine their own affiliation with each set, and it can never be said that an element “belongs” or “does not belong” to a fuzzy set in the domain. Although this property of the existence of fuzzy sets itself is very favorable to portray and deal with the fuzzy phenomenon, it also brings the problem of not being able to determine the final definite attribution of a certain element. For this reason, the emergence of fuzzy set intercept gives an effective way for “fuzzy-to-clear conversion.” It uses a level value to redefine a new clear set on the basis of the original fuzzy set, thus building a bridge between the classical set and the fuzzy set, and its mathematical expression is as follows.

$$A_{S\lambda} = \{u \in UA(u) > \lambda\}. \quad (4)$$

The above formula illustrates that classical sets can represent fuzzy sets after transformation, which reflects the close connection between fuzzy sets and classical sets and establishes the transformation relationship between fuzzy sets and classical sets. Using the affiliation function to represent the affiliation of a sample with a subset, then the hard  $C$  division of the data set  $X$  can be expressed as follows.

The goal of fuzzy clustering validity metrics is to get a more precise and efficient number of clusters that accurately reflect the true structure of the sample dataset to be clustered. The main features that are commonly considered to verify the validity of fuzzy clustering are the dataset’s “compactness” and “separability.” The compactness means measures how close are the objects within the same cluster. To demonstrate the separability of two fuzzy clusters in a training set and to provide implementation approaches for use in a supervised learning environment, in this section, we look at four of the most common and extensively used classical fuzzy clustering validity metrics and examine their characteristics in depth. The division factor of the sample data set is defined as follows.

$$V_{PC}(U; c) = \frac{1}{n} \sum_{l=1}^c \sum_{j=1}^n \mu_{lj}^2. \quad (7)$$

In summary, it can be seen that the division coefficient is a criterion to measure the fuzzy Chengdu of clustering results. According to the second property, the larger the value of the division coefficient is, even close to 1, the more distinct the classification is. According to the third property, the higher the value of the division coefficient is close to 0, the fuzzier the classification is. Therefore, the number of

clusters that corresponds to the largest value of the division coefficient is the optimal number of clusters. Although the index of the division coefficient is simple and small, it lacks a direct connection with the geometric structure of the data and has a monotonic tendency. The division coefficients of the sample data set  $X$  are defined as shown in the following expression.

$$V_{\text{MPC}}(U; c) = 1 - \frac{c}{c-1} (1 - V_{\text{PC}}). \quad (8)$$

In summary, it can be seen that the partition coefficient is also a measure of the fuzzy Chengdu of the clustering results, but still lacks a direct connection to the geometric structure of the dataset. The two commonly used fuzzy clustering validity metrics introduced above only utilize the affiliation measure. The ratio of intraclass compactness is defined as the following mathematical expression.

$$V_{\text{XB}}(U, V, c) = \frac{\sum_{j=1}^c \sum_{i=1}^n u_{ij}^m \|v_i - x_j\|^2}{n * \min_{j \neq j'} \|v_i - v_{j'}\|^2}. \quad (9)$$

This metric also measures the data mainly in terms of intraclass compactness and separation between classes to give a correct evaluation of the experimental dataset and to obtain the optimal number of clusters. However, this metric, even though it compensates for some of the deficiencies in the metric, is still calculated only around the center of clustering. It does not take into account the total clustering shape of the dataset and therefore cannot effectively measure datasets with multiple geometric structures. Because of the variety of data types and geometries of the data sets to be clustered, there is still no one-size-fits-all fuzzy clustering validity metric that can be used to solve all problems of clustering validity. As a result, fuzzy clustering validity metrics will develop in an endless stream. The schematic diagram of the algorithm for fuzzy clustering is shown in Figure 4.

Each data object in the data set will be examined as a cluster center candidate in the method iteratively. To begin, identify the first initial centroid. To find the first clustering center, calculate the distance mean of all data points. Reassign data items and update the cluster centers in the second step. All data objects in the dataset are allocated to the clusters closest to the currently existing clustering centers and the clustering centers are updated. Instead of testing all data objects in the alternative set in turn, the next best clustering center is selected by following some custom optimization rules in the alternative set of masses. In fact, the individual clustering centers of the dataset must be distributed in regions where the sample points are relatively dense.

**3.3. Improved SVM Algorithm and Its Mathematical Principle.** The purpose of the SVM algorithm training is to find the two largest extreme hyperplanes at the two ends of the separating surface associated with the decision function. That is, to find the support vector of the training set, which accounts for a

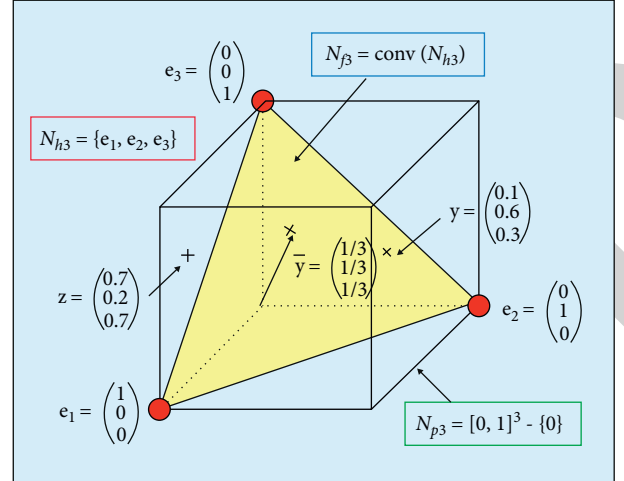


FIGURE 4: The schematic diagram of the algorithm for fuzzy clustering.

small percentage of the entire training set, which is the sparsity of the support vector. According to the sparsity of support vectors, the data set can be divided into chunks, and SVM training is performed on each small data block, and then the support vectors of each small data block are lumped together. The set of support vectors sought is then chunked to find new support vectors. The iteration stops with the condition that the global optimal support vector is found. This chunking method shortens the training time without compromising the SVM algorithm's accuracy. The new optimization problem will reduce the size of the original problem's objective function, bringing it closer to the original problem and allowing it to be solved more accurately. The subproblem of this method can be solved by an analytical approach, which in turn speeds up the solution rate of the original problem. The sequence minimum optimization algorithm, which selects a working set with only two elements, has the following mathematical expressions.

$$\begin{aligned} \min_{\alpha^{(*)} \in \mathbb{R}^{2l}} \frac{1}{2} \sum_{i,j=1}^l (\alpha_i^* - \alpha_i) (\alpha_j^* - \alpha_j) (\Phi(x_i) \cdot \Phi(x_j)) \\ + \varepsilon \sum_{i=1}^l (\alpha_i^* + \alpha_i) - \sum_{i=1}^l y_i (\alpha_i^* - \alpha_i). \end{aligned} \quad (10)$$

The problem to be solved has only two variables, and the size of the working set has been reduced to a minimum. According to the characteristics of the support vector machine algorithm, the support vector accounts for a very small percentage of the training data, so the data can be chunked, and training each data block is the process of eliminating all nonsupport vectors, and because the support vector machine solves the global optimal process, the final support vector is the global optimal support vector. To begin, the training data is divided into  $M$  copies by dividing it into principles, and the  $M$  copies of each layer are trained as independent SVM blocks. After that, all of the support vectors in that layer are merged, and the support vectors obtained in this layer are continued to be trained in blocks.

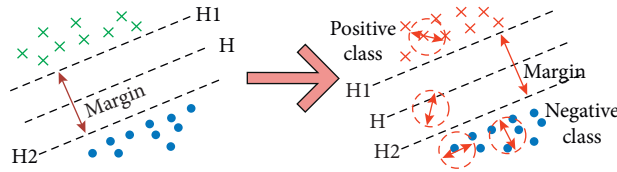


FIGURE 5: The conceptual diagram of the improved SVM algorithm.

TABLE 1: Music literacy test statistics.

School	BIAFM	ROMF	BMPIOPS	ROPS
Key universities	13.0	21.7	84.3	80.9
General university	15.01	16.0	94.1	93.0
Key colleges	11.7	18.9	79.0	88.2
General college	16.2	11.8	81.9	78.1
Total identification	14.3	17.0	85.0	85.0

Figure 5 depicts the updated SVM algorithm’s conceptual diagram.

The advantage of this approach is that it trains different blocks of data during iteration, gradually eliminating non-support vectors to arrive at the final support vectors. The number of support vectors in each layer gradually decreases, allowing the majority of support vectors to be retrieved while maintaining accuracy. Moreover, the cut of the dataset can be manually controlled to provide a guarantee for the scalability of large datasets, and increasing the threshold value further ensures the accuracy of our algorithm. And supervising the change of support vectors in each layer makes the loop that does not satisfy the condition terminated. The cascaded SVM parallel regression algorithm mainly chunks the large sample data and finds its corresponding support vectors separately.

#### 4. Experiments and Results

As we enter the new millennium, basic education in China has undergone great changes both in terms of facilities and concepts. The comprehensive promotion of quality education with innovation education as the core is the core of the current change of education concept. University music education, as important content and way of aesthetic education, is an indispensable and organic part of quality education.

Music education not only plays a visible role in improving students’ moral standards, cultivating noble sentiments, and cultivating their ability to appreciate, express, and create beauty, but it also plays a hidden role in improving students’ moral standards, cultivating noble sentiments, and cultivating their ability to appreciate, express, and create beauty. It also has a special role in cultivating students’ creative spirit, developing their intellectual potential, and promoting their personality development that cannot be replaced by other education. Therefore, education without the participation of music is not real-quality education. This survey used an integrated research method based on questionnaires and tests. The test statistics are shown in Table 1 and Figure 6.

Traditionally, it is believed that “musical literacy” should include some psychological and cultural characteristics of pure music, such as rhythm, melody, and structure. In fact, this understanding is one-sided. Music, in the end, is the crystallization of human culture, so the individual’s level of understanding and grasping the music culture related to pure music is the key to the composition of music literacy. The level of musical culture is a necessary condition for understanding and recognizing musical information. Because of their low basic music knowledge, a narrow range of musical works they enjoy, and few books they have read on the subject, current college students have a high error rate while answering test questions. For college students, knowledge of music categories should be a comprehensive reflection of both perceptual and rational knowledge. Being able to accurately classify and identify music with different characteristics and styles as well as different properties can fully reflect the level of students’ musical knowledge. The proportional distribution of each instructional component of university music is shown in Table 2 and Figure 7.

The survey on the implementation of teaching contents actually reflects that too little work has been done in teaching reform and teaching exploration in secondary school music education in our city. The inherited music education approach has been doggedly moving with its intrinsic inertia and lines for decades. The survey revealed that the reasons behind secondary school pupils’ present low music literacy are complex. These include both the coordination of the bilateral relationship between teaching and learning and the positioning of the overall larger educational environment. Of course, the backwardness and conservatism of our secondary school music education concept seems to be the primary reason for these many reasons. We are living in an information age, an Internet age. It is a great trend to introduce computers into the music classroom. This is because computers have a full range of educational features in terms of music knowledge, introduction to musicians and works, instrument awareness, chart display, music appreciation, and their unique music computer functions. It is conceivable that if music education is given the wings of technology, the future will be bright.



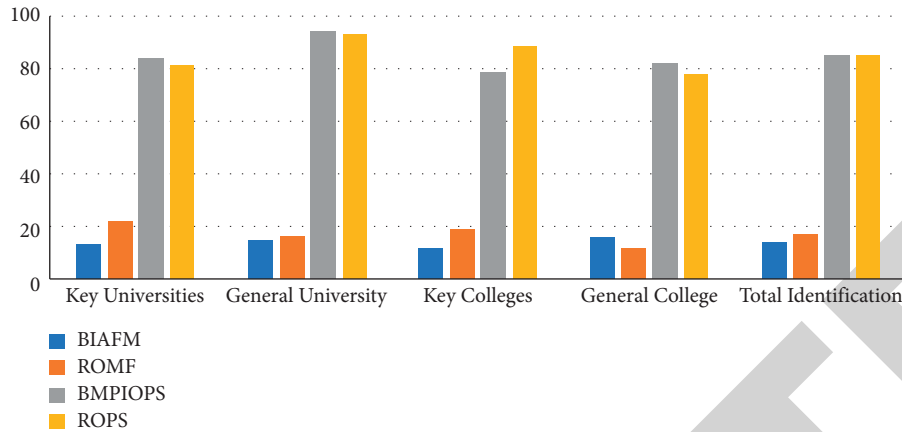


FIGURE 6: Music literacy statistics histogram.

TABLE 2: The proportional distribution of the content of university music teaching.

School	Singing	Musical instrument	Appreciate	Ear training
1st year	5	3	2	3
2nd year	3	2	2	2
3rd year	2	2	1	2
4th year	1	1	1	2

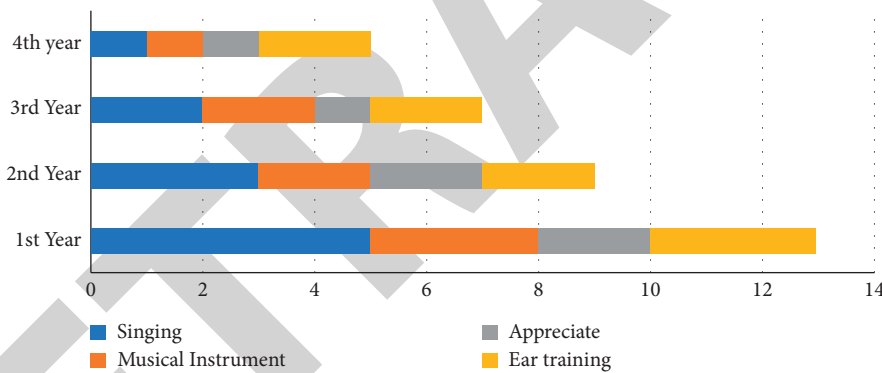


FIGURE 7: Histogram of class time allocation.

### 5. Conclusion

Under the guidance of the new teaching philosophy and syllabus of the twenty-first century, music teachers in colleges and universities can only fully reflect the value of creative contextual teaching by “teaching with fun.” Music professors in colleges and universities may only properly represent the value of their creative contextual teaching by “teaching with pleasure.” Music professors in colleges and universities, in particular, must emphasise the necessity of fostering students’ correct aesthetic notions of music and growing students’ aesthetic emotions and imagination during the music teaching process. In this context, the first task of music teaching management for nonarts students in general universities is also to set clear curriculum objectives and select clear and specific teaching contents accordingly.

Based on this, this paper proposes an innovative research method of college music teaching based on artificial intelligence technology. The method introduces a fuzzy evaluation

algorithm to establish a two-level teaching evaluation index system and calculates the weights of each index based on fuzzy mathematical theory. In data processing, the SVM algorithm in the field of data mining is used to classify all collected teaching evaluation data in advance through supervised learning, which significantly improves the efficiency of data processing. The experimental results show that the model in this paper can well assess the quality of music teaching in colleges and universities and play a role in promoting the progress of music teaching in colleges and universities. Therefore, it is a trivial and arduous teaching process for music teachers in colleges and universities. He only needs his ears to listen, yet music professors at colleges and universities have a difficult and time-consuming responsibility.

### Data Availability

The datasets used during the current study are available from the corresponding author upon reasonable request.

## Conflicts of Interest

The authors declare that they have no conflicts of interest.

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