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Emotional Behavior Analysis of Music Course Evaluation Based on Online Comment Mining

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ABSTRACT

This study investigates the method of analyzing emotional tendencies in music courses and its application in lesson plan evaluation. Using a weighted method to analyze emotional tendencies in music curriculum, the study compares the results with existing literature, demonstrating the superior accuracy of the proposed method. To evaluate lesson plan quality, a combination of self-assessment, mutual evaluation, group evaluation, and the middle school music lesson plan evaluation form is recommended for comprehensive assessment. The study's method for comment polarity achieves an accuracy rate of 69.19%, significantly outperforming other methods. Additionally, improvements in lexical feature extraction reduce computation complexity and interference factors in sentiment polarity analysis. In conclusion, this study offers valuable insights for enhancing teaching effectiveness, lesson plan quality, and understanding course feedback.

KEYWORDS

Emotional Behavior, Emotional Dictionary, Music Course Evaluation, Online Comment Mining

INTRODUCTION

An emotional dictionary is a collection of different emotional words marked with emotional tendencies. Generally speaking, an emotional dictionary marks the positive and negative degree of emotional words. The emotional words in the emotional dictionary can be used to judge the emotional tendency of the text, so constructing the emotional dictionary is an indispensable part of the analysis of the emotional tendency of the text. Through machine learning or natural language processing technology, an emotional dictionary can separate people's opinions, feelings, evaluations, attitudes and emotions about entities or attributes from texts (Chen et al., 2020). At present, the sentiment dictionary is widely used in consumer product analysis, social public opinion monitoring, stock market forecasting and customer feedback tracking, and its main analysis methods are semantic-based and machine learning-based methods. Semantic-based method mainly calculates the emotional value of the text through the emotional dictionary and then determines the emotional tendency of the text. Music

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teaching evaluation plays a guiding and quality monitoring role in music curriculum reform, which is the crucial factor in the success or failure of the music curriculum reform and an indispensable link in the whole music teaching work (Zhou et al., 2021). The goal of the music curriculum is achieved through teaching and various music practice activities. The "practical activity" here is a process, a longitudinal comparison of self-development for individual students. Due to the influence of social and family education and other environmental factors, many students lack the perception of music. The evaluation of music courses not only has the functions of guiding, identifying, inspiring, improving, and regulating music teaching, but also plays an important role in the development of students' music quality, the improvement of music teachers' teaching level, and the improvement of school music education and teaching management. Evaluation of students is the transformation of subject and object, which makes students become the main body in the process of appreciation. In the past appreciation classes, teachers' evaluations often replaced students' evaluation, mainly because teachers ignored students' potential to appreciate music and dance.

With the popularity of the Internet in life, people's lifestyles have changed a lot. Listening to music in leisure time is one of most people's choices. Music is an expression carrier of emotion, and many songwriters express their emotions through music. It can be said that emotion is music's essential feature and connotation. Nowadays, the Internet has many texts containing much emotional information, such as commodity evaluation information and comments on important events (Gui et al., 2019).

This paper analyzes the evaluation of music courses and emotional behaviors based on an emotional dictionary under online review mining. Online review is an important part of users' original content, which refers to the comments of ordinary users on something on the Internet. With the continuous enrichment of network forms, online comments have become various, which can be divided into two forms: well-structured online comments and unstructured online comments. The purpose of online comment mining is to mine helpful information based on the massive comment information in the network, which can be described from three aspects: comment feature mining, comment text sentiment analysis, and comment text topic recognition (Bedoya et al., 2021). Attitudes and values, as the primary goal of the music curriculum, highlight the essence of music education as aesthetics. The music course's education mode is to educate people by emotion and aesthetic education. Its educational effect lies not in acquiring knowledge and skills, but in enriching students' emotional experience and cultivating students' interest in music and emotional reflection. As an essential part of text mining, text topic extraction is a process of selecting some keywords in the text to represent the content of the text topic to extract the topic of the document (Gupta & Lehal, 2009). Its essence is a probability model, and the distribution of the document topic can be obtained by using an efficient probability inference algorithm, which is suitable for processing large-scale text sets and corpora (Cores-Bilbao et al., 2019).

The polarity judgment of words is the basis of text emotion analysis. However, as the polarity of emotional words is related to their specific fields, so far, there is no dictionary that can satisfy all fields of text emotion analysis. According to the specific needs in the research process, a specific domain emotion dictionary is constructed (Nian & Wang, s2017). Mood, as a specific type of emotion, is the proof. According to the above definition, the characteristics of an individual's mood response to music are perceived by cognition and are often described by specific words. Because mood can be described, the research on music mood response is often carried out by obtaining verbal descriptions of subjects' mood state under the action of specific music stimulus variables. The evaluation of music courses usually shows strong personal feelings. However, due to the freedom and openness of the network, this feedback without guidance often lacks organization, which leads to a comment that may involve products, services, environment, and other aspects. When users evaluate products and services, they usually focus on the related themes or features of products or services (Zhang et al., 2020). Daily formative evaluation should always run through the whole teaching process. It is a long,

gradual, and subtle process to cultivate students' interest in music, improve their musical literacy, enrich their emotional experience, and cultivate their noble sentiments.

Nevertheless, it is vital to examine students at ordinary times. As far as possible, the daily formative evaluation should be done through observation, questioning, and stage sampling. Music evaluation uses all feasible evaluation techniques to give value judgment to all expected effects of music curriculum evaluation. It takes the values of music curriculum evaluation as the standard, and evaluates the achievement and effect of music teaching by the degree to which the goal of music teaching is achieved. It requires a comprehensive investigation of all aspects of music education and musicology. Emotional analysis of music curriculum evaluation can help educators understand students' needs, help learners choose courses suitable for their own study, and help managers build and improve the platform.

The innovations of this thesis are (1) a sentiment topic mining model is constructed. The model associates each word in the text with theme and sentiment, and there is a correlation between the two dimensions. In other words, the sentiment dimension influences topic generation and word generation. By modeling the topic and sentiment of a document, the model can be better adapted to long text mining because it assumes that each word in a document may come from a different language model. (2) Creating a sentiment lexicon for an online music course is outlined. Due to the low cohesion of words, the selection of seed words for the sentiment lexicon is inaccurate. This article adds word vector factors to the standard method to create a sentiment lexicon for evaluating music courses based on a corpus. Words are represented as word vectors, and the seed word set of domain sentiment words is filtered using the distance between word vectors. Mutual information between words was also calculated to construct the sentiment lexicon for music course evaluation.

The main contributions of this article are the proposal of a method based on online review mining for analyzing the sentiment behavior of music course evaluations and constructing a sentiment lexicon for sentiment polarity analysis. These findings are instructive for educators, curriculum designers, educational institutions, and administrators to help them optimize their teaching strategies and develop more engaging curricula to enhance the quality and effectiveness of music education. Therefore, the findings of this study are of great significance to the development and progress of the field of music education. This article differs from previous studies in the proposed affective theme mining model, the introduction of word vector factors, and the research directions for music curriculum evaluation scenarios. These innovations provide new ideas and methods for the sentiment analysis of music course evaluation, which help improve and refine music education's quality assessment system.

The overall structure of this paper consists of five parts. The first section introduces the background and significance of the emotional dictionary in the evaluation of music courses, and then introduces the main work of this paper. The second section introduces the related work of emotional dictionary on the evaluation of music courses and the research content of the method proposed in this paper on the evaluation of music courses. The third section introduces the marking of emotional inclination of online commentary vocabulary and the evaluation construction method of music courses in online commentary emotional dictionary. In section 4, the simulation experiment is carried out, and the experiment is analyzed. The fifth section is a summary of the full text.

RELATED WORK

Research on Emotional Dictionary for Music Curriculum Evaluation

Current research on emotion classification in the emotional dictionary primarily focuses on commendatory and derogatory emotions. This paper introduces an unsupervised learning-based emotion classification method, which identifies emotional categories of text sets without prior category annotation. The emotional dictionary for music curriculum evaluation must adhere to guiding, scientific, integrity, and standard principles, clearly explaining the content, methods, and procedures of music curriculum evaluation. An overview of related work is provided in Table 1.

Table 1. Overview of related work

Authors	Evaluation Methodology	Key Findings
Wang et al. (2019)	Emotional dictionary for music courses	The emotional dictionary for music courses covers all aspects of music teaching, including social, aesthetic, psychological, and moral education.
Hu (2022)	Chinese emotional dictionary for music based on ring model	The emotional classification of lyrics is achieved using the improved emotional dictionary model.
Lepping et al. (2019)	Topic-based evaluation information classification method	The method achieves better classification results when the evaluation information is clear, but some evaluations may not be related to the topic.
Theorell & Bojner (2019)	Working method for teaching evaluation	Good evaluation methods can promote the development of students' musical aesthetic ability and improve the quality of music teaching.
Li et al. (2020)	Semi-supervised learning fine-grained attribute acquisition model	The classification algorithm has good efficiency in acquiring fine-grained attribute sets and classification, but is dependent on data quality.
Kirkland (1989)	Student-centered emotional dictionary for music courses	The emotional dictionary values students' music quality, growth, aesthetic ability, and formation of artistic sentiment.
Crossley et al. (2015)	Naive Bayesian classifier for analyzing emotional tendency of lyrics	The method realizes the classification of emotional tendency of lyrics.
De Gagne et al. (2016)	Emotion fuzzy computing classification method based on ensemble learning	The method achieves better classification effect than a single classifier.
Yi & Kang (2019)	Emotional tendency of music comments based on Hevner emotional ring	The method extracts and recognizes emotional behaviors of music comments.
de Assuncao et al. (2018)	Rule-based emotion unit extraction algorithm for online text	The method correctly extracts emotion units of online text but cannot extract content outside the rules.
He et al. (2021)	Self-playing and singing in university music education	Self-playing and singing cultivate independent performance ability and singing skills, improving students' music literacy and practicability.
Chen (2021)	Vocal music teaching evaluation based on pattern recognition voiceprint feature analysis	The method extracts voiceprint features and recognizes music according to them.
Zhao et al. (2021)	Elite teaching optimization algorithm for English classroom multimedia teaching	The algorithm supports quality analysis of English classroom multimedia teaching.
Xiaojun et al. (2022)	Classification techniques for student curriculum evaluation dataset	Decision tree, support vector machines, Bayesian theory, and random forest achieve accurate classification.

Research Content of Emotional Dictionary for Music Curriculum Evaluation

Based on this, this paper puts forward an emotional dictionary based on online comment mining to analyze the emotional behavior of music curriculum evaluation. It verifies the rationality and accuracy of this method through the application of the educational administration department of a university. It is more practical to study the perceived utility of comments from the perspective of emotion. Related research explores the emotional effects of subjective texts on users from the psychological point of view and essentially detects the causal relationship between users being driven by emotions and triggering subsequent behaviors. This paper puts forward a method of constructing emotional dictionary of online reviews, which improves the classification accuracy of emotional words in reviews. It automatically builds an emotional dictionary of online reviews, which is positively significant to the emotional analysis research of music curriculum evaluation. The online comment mining topic model and HowNet Emotional Dictionary are used to analyze the emotional tendencies of users in music course comments.

RESEARCH METHOD

Annotation of Emotional Tendencies of Online Commentaries

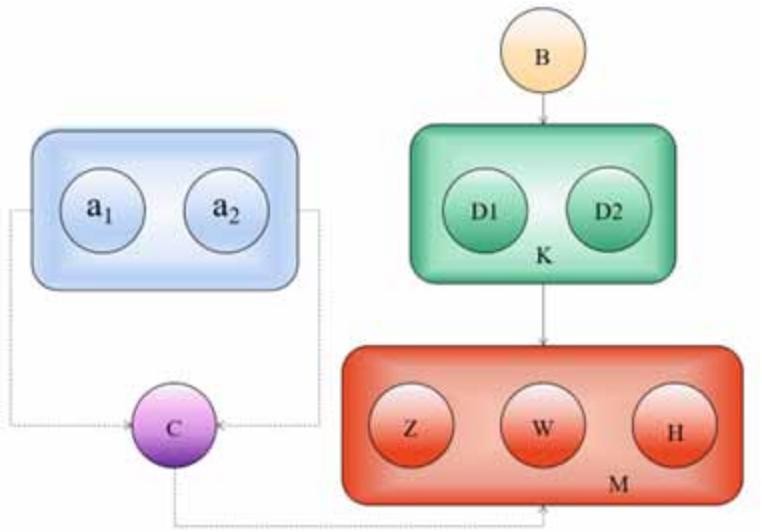
Online review means users express their feelings through space, blogs, forums, and third-party review websites. Online comments not only contain users' subjective opinions but also have a lot of users' emotional preferences and other information. The statistical method of judging emotional tendency is based on text classification technology. The main method is to label some texts with emotional tendencies as a training corpus, then analyze the emotional tendency of vocabulary by using the relationship between vocabulary and document set through text classification technology (de Assunção et al., 2019). Common word segmentation methods include word segmentation method based on string matching, which matches strings with common words in dictionaries, but this matching method often ignores the understanding of word meaning. Word segmentation is based on statistics: getting the frequency of words from the context. The greater the frequency, the greater the probability of getting this from the context. Comprehension-based word segmentation, through computer simulation of sentence processing, realizes semantic recognition, carries out syntactic and semantic analysis simultaneously with word segmentation, and its function also includes distinguishing ambiguous words (Shen et al., 2018).

Different themes of the review document are obtained through the theme model, and the emotional tendency of different themes is analyzed by combining the emotional dictionary. It can realize the analysis of users' emotional tendency on different topics of a certain comment object, score and weight the emotional tendency based on different topics, and obtain the overall emotional tendency of the final comment. A document is composed of multiple topics, and each topic is a probability distribution of word sets, which is a probability diagram model composed of three levels: word-topic-document, as shown in Figure 1.

K is the number of topics, M is the number of text documents, C is the word probability distribution of topics, D1 is the topic probability distribution, D2 is the prior distribution parameter of topic distribution C, and B is the prior distribution parameter of word distribution.

Given the parameters a and B, the joint distribution of C, Z and W is

Figure 1. Probability diagram model



$$p\left(c,z,w\middle|a,b\right) \tag{1}$$

For the j word $w_{i,j}$ in the text document d, its generation process is as follows.

Extract the topic distribution c of text document i from $Dirichlet$ prior distribution a, i.e

$$c_i = Dirichlet\left(a\right) \tag{2}$$

Take samples from the topic distribution to generate the topic $z_{i,j}$ of the j word of the text document i, that is

$$z_{i,j} = Multinomial\left(C_i\right) \tag{3}$$

In the emotional analysis of the comment text, the HowNet emotional dictionary is used, and the positive evaluation words and positive emotional words are selected as

$$Dict = \left\{w_1, w_2, ..., w_m\right\} \tag{4}$$

Select the first S words with a high probability of t_k distribution for each topic, and record them as

$$W_{tk} = \left\{w_1, w_2, ..., w_s\right\} \tag{5}$$

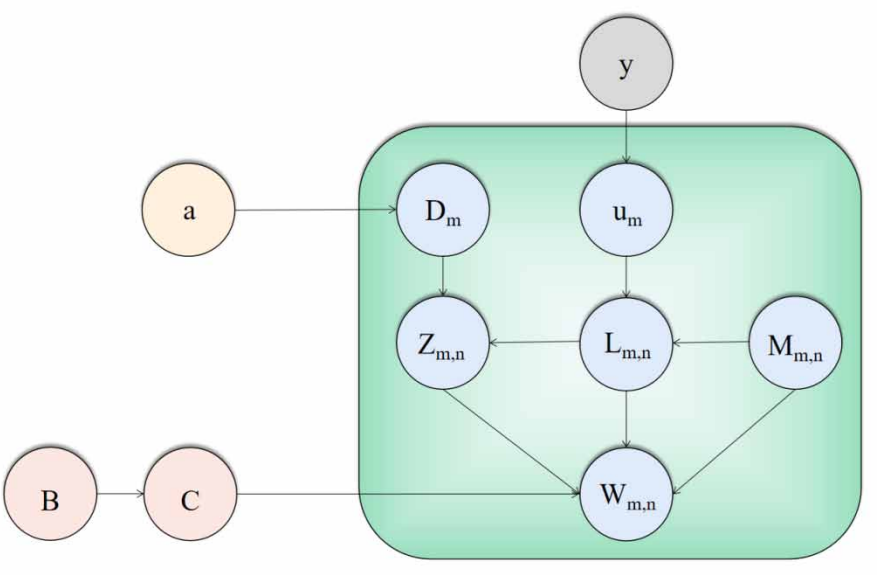
Calculate the attribution relationship between $w_j \in W_{tk}$ and emotional dictionary $Dict$

$$Senti\left(w_j\right) = \begin{cases} 1, w_j \in Dit-1 \\ w_j \in D_{it} \end{cases} \tag{6}$$

The human language contains many functional words. Compared with other words, functional words have no practical meaning. For example, 'one,' 'these,' and 'those' help to describe nouns and express concepts in the text, such as prepositions, including 'here' and 'below.' These functional words frequently appear in the text and have no practical significance. If only considering the meaning of words, this kind of words is not helpful. This form of functional words is also called 'stop words.' Filtering stop words will improve the retrieval efficiency and reduce the retrieval burden. Add the emotion layer to form a four-layer structure of "document emotion topic word," which can not only model the theme attribute of the text, but also analyze its emotional information simultaneously (Xia & Xu, 2022). The model adopts the method of unsupervised learning and follows the word bag model to model the text, which solves the problem of cross domain use of emotional classification methods and improves the accuracy of text emotional classification to a certain extent. The emotional topic mining model is shown in Figure 2.

In the text theme emotion model, each word has its corresponding emotion and theme, and the two dimensions are related (Ying & Jianhua, 2021). That is, the generation of topic depends on emotional dimension, and the generation of words depends on emotion. Although the topic pair model

Figure 2. Emotional topic mining model



can model the topic and emotion of a document simultaneously, its assumption stipulates that each word may come from a different language model, which increases the complexity of the model and makes the model more suitable for long text mining. The text is composed of words, which is its most prominent feature. Words are the media of semantic expression, and different meanings are expressed by combining different words. Therefore, mining frequent word sets in the text can automatically discover the dependency between words.

Evaluation Method of Music Course Learning

Students should develop their own experiences through their own learning experiences and gradually develop the ability to express their feelings. Teachers should focus on improving students' music quality through various music practice activities (Xiao, 2023). Evaluating students' music learning should "play the educational function of evaluation and promote students' development at the original level." "Establish an evaluation system to promote students' all-round development." Music teaching evaluation should highlight a humanistic spirit, regard the shaping of personality as the ultimate goal of evaluation, and cultivate humanistic quality throughout the whole process of teaching evaluation. When evaluating music teaching, we should pay more attention to the evaluation of students' learning enthusiasm and attitude, learning process and methods while diluting their knowledge and skills. For music courses, the music learning process is more important than the learning results in a sense, because music education mostly embodies a potential effect of "moistening things silently", and its goal is often contained in the teaching process, that is, the process is the purpose.

Regarding teaching methods, it is better to teach people "fishing" than "to give a fish", and it is better to learn music than to learn music, which is conducive to students' lifelong learning and sustainable development. Therefore, music curriculum evaluation. There will be differences in the teaching of any course, and there will also be differences in students' grades. Therefore, teachers should objectively face the differences among students, respect the differences in students' grades, and evaluate classroom teaching according to students' different situations. The evaluation of students' music learning not only pays attention to the indicators of emotion, attitude, values, knowledge, and skills, but also examines the effectiveness of the learning process and methods. Music experience

and imitation ability, expression ability, the attitude and creative ability of exploring music, the understanding of music and related culture, and the formation of aesthetic taste. It lays a good foundation for his lifelong love of music, art, and life. Evaluating students' emotional attitudes and values should adopt the formative evaluation method, combining self-evaluation, mutual evaluation and other evaluation in the teaching process (Clark, 2012).

More attention should be paid to evaluating students' learning process and personality development. Students' learning process reflects students' learning situation and changes more directly and truly (Loose & Ryan, 2020). Only when teachers address these changes and problems in time does students' interest in music become the main motivation, even the only motivation. Music education takes students' interest in music as the primary task and goal of music teaching. Therefore, music teaching evaluation should pay attention to students' basic knowledge and skills and students' positive attitude and pleasure in learning music. The evaluation of students' music learning can be manifested in three aspects: diversification of evaluation subjects, diversification of evaluation contents, diversification of evaluation methods and methods.

① Encourage parents to participate in the evaluation.

Secondary schools are also the main body of evaluation, and schools can encourage parents to participate. Promote and guide the cooperation with teachers, and better provide convenience for teaching management. For example, a family report performance needs the support and cooperation of parents, who are the best evaluators of students in this process.

② Inspire students to evaluate each other.

Students' mutual evaluation often inspires endless learning motivation. When their peers recognize their advantages, the satisfaction in their hearts may far exceed the teacher's praise for them. Through mutual evaluation, we can cultivate children's unique evaluation of music and evaluate the advantages and disadvantages of learning. Improve their awareness of self-education, self-confidence, self-awareness, self-regulation, and self-control of their consciousness and ability.

③ Pay attention to students' self-evaluation.

Students can fill out a self-evaluation form, which is required to be filled out truthfully, and make a descriptive evaluation of their participation attitude, participation degree and acquired musical ability in music practice activities. Through self-evaluation, students can objectively realize their advantages and disadvantages, encourage them to treat music more actively and consciously, and participate in music. Evaluation has become an effective way for students to educate themselves and promote self-development.

The same is true of the teaching evaluation of music courses. Although different students will have different grades in music performance, each student will have their strengths. Therefore, in music courses, teachers should be good at discovering the advantages of different students. In the teaching of music courses, teachers should praise and encourage students according to their different advantages and strengths so that students are more interested in learning, and teachers can also promote improving students' learning quality. Learning knowledge and skills in basic music education differs from professional music education. It belongs to music aesthetic education and serves aesthetic education. Its content and requirements are based on the emotional needs of feeling and expressing music and meet the needs of music practice activities. It should not make too high and challenging requirements.

Moreover, learning knowledge and skills in basic music education runs through the whole music teaching process, and there is no independent branch. According to the specific situation of different

students, the evaluation should objectively evaluate students' music learning with descriptive, emotional, explanatory, and conversational language. The music growth record folder is an essential qualitative evaluation method. It is a folder used to record the whole process of students' music learning and growth. A music growth record folder is established to help students reflect and evaluate their music learning process. Music teaching evaluation should take aesthetic education as the core, cultivate students' foundational musical ability as the fundamental starting point, and focus on the evaluation's education, incentive and improvement functions. Through scientific evaluation, we can effectively promote the development of students, encourage teachers to forge ahead and promote the vigorous development of music education.

Online Comment Emotional Dictionary Music Course Evaluation Construction Method

With the deepening of reform and opening up and the introduction of foreign advanced education and teaching methods, art education, especially music education, as an essential part of quality education, has been paid more and more attention. This paper systematically discusses the evaluation of music teaching in theory and introduces in detail teachers' evaluation methods for students' music learning and teachers' classroom music teaching evaluation methods. Music ability tests belong to the research field of music psychology, which focuses on evaluating individual music psychological quality, that is, personal quality and potential in music. Music learning tests measure the effect and degree of music learning in schools or classes, mainly for the research and management of music education. The construction method of domain emotion dictionary is constructed in two stages. In the first stage, some existing dictionary resources, including the HowNet emotional dictionary, emotional vocabulary ontology database and Li Jun's Chinese commendatory and derogatory Dictionary of Tsinghua University, are used to sort and de-duplicate entries. At the same time, manually labeled lyrics are added to build a benchmark vocabulary database for lyrics. The construction method of an online comment emotional dictionary based on online comment mining for music curriculum evaluation refers to adding word vector factors to the construction process of music curriculum evaluation based on the General Corpus emotional dictionary construction method, aiming at the problems that the selection of seed words of emotional dictionary is not accurate due to the low degree of word cohesion, The words are expressed in the form of word vectors, and the seed word set of the field emotion dictionary is screened by calculating the distance between word vectors. Further, the music course evaluation of the emotion dictionary is completed by calculating the point of mutual information between emotion words. The specific process is generally shown in Figure 3.

The construction process of an emotional dictionary can be divided into the following three steps.

① Data collection and basic processing

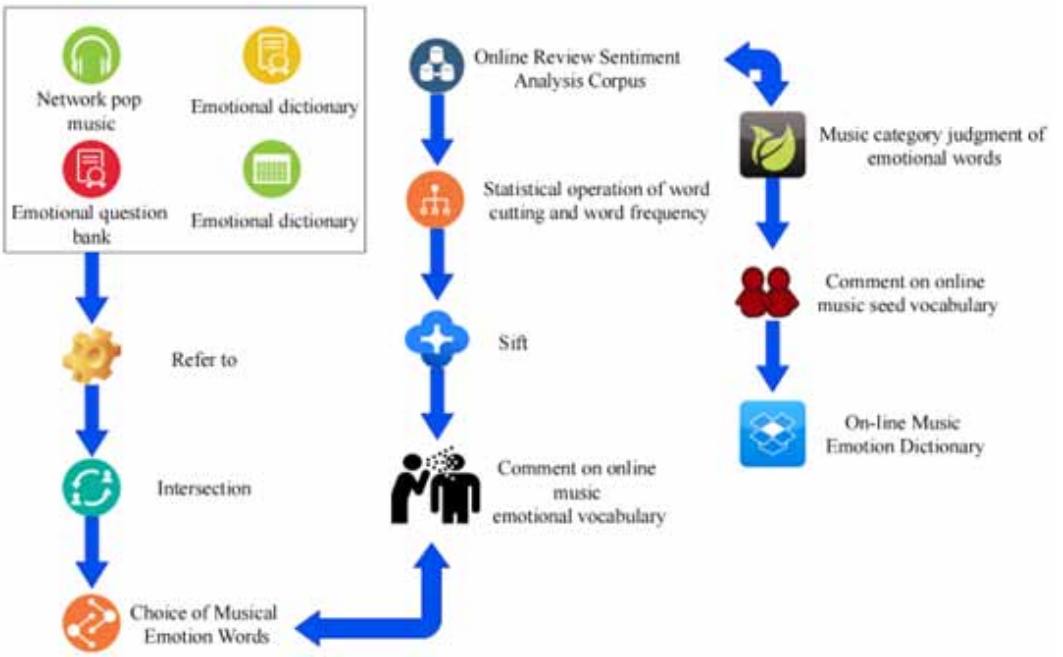
Collect the relevant online comment data of Ctrip, Mafeng, and other tourism websites to form an emotional analysis corpus of online tourism comments.

② Seed word selection based on word vector

The emotional vocabulary ontology is used to intersect with the above-mentioned emotional word set of tourism online comments, and the proposed seed emotional word selection method based on word vector is combined to obtain the seed word set of tourism online comments.

③ Judgment of emotion category of tourism emotion words

Figure 3. Construction process of an emotional dictionary for online music course evaluation



Using the proposed method of identifying the emotional category of tourism emotional words, the emotional category of emotional words is judged by calculating the mutual information between emotional words and seed words. Finally, the emotional dictionary of online comments on tourism is obtained.

The average distance between a single emotional word and other emotional words is defined as the emotional attraction of the emotional word, and its calculation formula follows.

$$EAD = \frac{1}{j}\sum_{n=1}^{j} Dis \tag{7}$$

Dis represents EAD cosine distance. To screen the emotional words in the emotional category to provide seed words for the next step, defining a standard distance for screening is necessary. Here, the distance is calculated using the formula shown in.

$$Staead = \frac{1}{j}\sum_{m=1}^{j} EAD \tag{8}$$

$Staead$ represents the standard screening distance of i emotion.

Determine the emotional tendency of the target words to expand the emotional dictionary.

$$MI\left(x,y\right) = P\left(x\right) - P\left(x\middle|y\right) \tag{9}$$

Where $P\left(x\right)$ represents the probability of variable x appearing, and $P\left(x\middle|y\right)$ represents the probability of variable x appearing when variable y appears.

Finally, the emotional tendency of the target word $word_i$ can be obtained according to the difference, and the expression form is shown in the formula.

$$SO-PMI=\sum_{word_i} P \tag{10}$$

$$SO-PMI=\sum_{word_i\in NegWords} P \tag{11}$$

Where $PMI\left(word_i,word_j\right)$ represents mutual information between two words, as shown in the formula.

$$PMI\left(word_i,word_j\right)=\log_2 \tag{12}$$

The emotional feature vector of the lyrics of each piece of music is expressed as a formula.

$$E_k=\frac{\sum_{i=1}^{S}}{s}\left(k=1,2,...,n\right) \tag{13}$$

Where E_k represents the value of the k dimension in the emotion vector; $word_i$ stands for the i word of a song lyrics.

Assuming that there are $x_1,x_2,...,x_n$ and $y_1,y_2,...,y_m$ concepts respectively, the similarity between w_1 and w_2 is the maximum of the similarity of each concept, and the formula is as follows.

$$Sim\left(w_1,w_2\right)=Sim\left(x_i,y_j\right) \tag{14}$$

Among them, $Sim\left(x_i,y_j\right)$ represents the calculation formula of two conceptual semaphores, and its calculation method is shown in the formula

$$Sim\left(x_i,y_j\right)=\frac{a}{a+d\left(x_i,y_j\right)} \tag{15}$$

Among them, a is an adjustable parameter variable, and d represents the distance between x_i and y_i in the semantic hierarchy, which can be calculated according to the lexical semantic similarity.

Music curriculum evaluation should first pay attention to students' learning, discover and develop students' musical potential, adopt flexible and open qualitative evaluation methods, pay attention to the evaluation of the music learning process, timely find students' needs in development, help students understand themselves, build self-confidence, stimulate their internal development momentum, to promote students' development at the original level and realize individual value. For the evaluation of music courses of emotional dictionary under online comment mining, if the importance of emotional

words is greater, the role of emotional words in the evaluation of music courses of text emotion is more prominent. Therefore, the most important node in the relationship network of emotional words is selected as the feature of emotional classification. In the relationship network of emotional words, the more significant the correlation between affective words and music course evaluations, the more comprehensive the affective information they cover on a localized scale.

ANALYSIS AND DISCUSSION OF EXPERIMENTAL RESULTS

This music performance assessment experiment is designed to evaluate students' performance in music performance from all angles and perspectives to help them identify their strengths and weaknesses and improve their performance skills. Students can choose to perform individually or in small groups, and the experiment staff will record the performance data using audio and video recording. The evaluation includes factors such as the emotional experience, power, singing skills, and musical expression. A comprehensive evaluation method combining quantitative and qualitative evaluation is used to give an evaluation grade, and the performance of the evaluation is analyzed and summarized, and a targeted summary comment is written. At the same time, students also need to be the participants and subjects of evaluation, forming a multifaceted evaluation method combining self-evaluation, group evaluation, teacher evaluation, and parent evaluation. At the end of the experiment, students summarize their strengths and weaknesses according to the evaluation results and plan to improve their performance skills further. In this experiment, the evaluation of students' audio and video recordings was conducted, and the results are shown in Table 2.

The comprehensive quantitative and qualitative evaluation methods should be adopted to evaluate achievements. In addition to rating the evaluation, it is necessary to analyze and summarize the performance of the evaluated person and write targeted summary comments so that the evaluated person has a clear goal to advance.

The evaluation of teachers requires objectivity and accuracy, especially the accurate, descriptive evaluation of the evaluated teachers, to promote the development of teachers. The evaluation criteria can be based on the Music Teachers' Classroom Evaluation Form, as shown in Table 3.

In this paper, online reviews are decomposed into sentences. The emotional words and phrases in music courses are queried by using the methods in Zhang et al. (2020) and Whissell (1989) and the emotional tendency of sentences is analyzed by the weighting method, and compared with those in Zhang et al. (2020) and Whissell (1989). Sentences are divided into commendatory, derogatory and neutral, and the evaluation criteria are recall rate, accuracy rate, and F value. The experimental results are shown in Figures 4, 5, and 6.

As can be seen from Figures 4 to 6, it is mainly the sentence emotion judgment of commendatory tendency when the number of sentences containing emotional words in music courses increases. The

Table 2. Evaluation form of students' audio and video recording

Evaluation Content	Measuring Points and Weights	Opinion Rating		
		A	B	C
Emotional experience	Expression	0.4	0.34	0.25
	Strength	0.4	0.35	0.24
Singing skills	Accuracy in pitch	0.4	0.35	0.25
	Rhythm	0.5	0.35	0.25
Musical expression	Complete	0.4	0.34	0.25
	Fluent	0.5	0.34	0.24

Table 3. Music teacher classroom evaluation form

Evaluating Indicator		Score			
Class A	**Second Level**	**Excellent**	**Good**	**Qualified**	**Fail**
Teaching design and teaching objectives Teaching insider	Clear goals and follow the "standards"	5	4	3	2
	The goal is specific, practical and operable.	5	4	3	2
Teaching process class a	The teaching materials are analyzed correctly, the concepts are explained clearly, and the skills are used skillfully.	5	4	3	2
	The content weight and arrangement are appropriate and the focus is prominent.	5	4	3	2
Teaching design and teaching objectives	Highlight exploration, creation, cooperation, integration and other learning methods.	5	4	3	2
	The teaching atmosphere is good and situational.	5	4	3	2

Figure 4. Comparison of recall rates under different methods

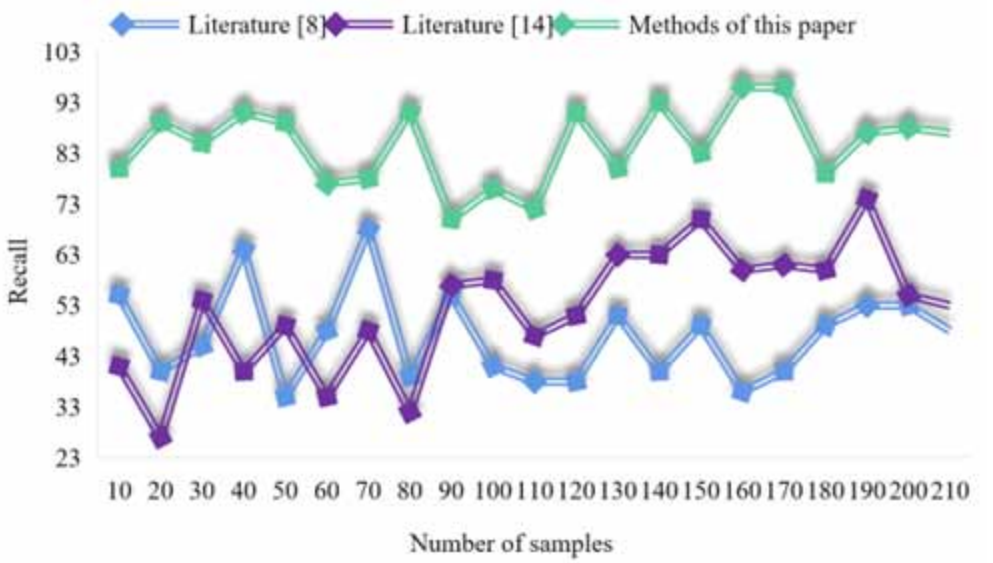


figure describes the recall rate, the accuracy rate, and the F value. What is shown in the figure is a comparison of the analysis of the emotional tendency of weighted sentence music courses with the methods of Zhang et al. (2020) and Whissell (1989) and this paper. As the emotional words of music courses are uncontrollable factors in the comments, when the emotional words of music courses are increasing, the accuracy rate of using this method to analyze the emotional tendency of sentences of music courses is higher than that of the emotional dictionaries in Zhang et al. (2020) and Whissell (1989), which proves the effectiveness of using this method to analyze the emotional tendency of sentences of music courses.

The evaluation of lesson plans can combine self-evaluation, mutual evaluation, and group evaluation. First, teachers evaluate their own lesson plans to explain their advantages, disadvantages, and creativity, and then teachers in the teaching and research groups evaluate each other. Finally, the evaluation team evaluates the lesson plans according to the Evaluation Form of Junior Middle School Music Lesson Plans and communicates the evaluation results with teachers, writing specific

Figure 5. Comparison of accuracy rates under different methods

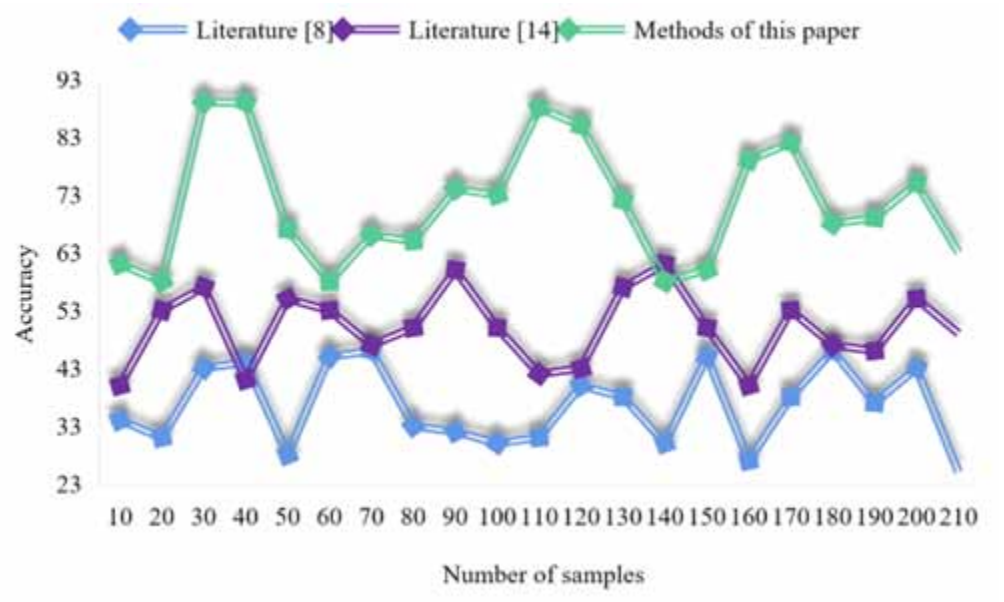
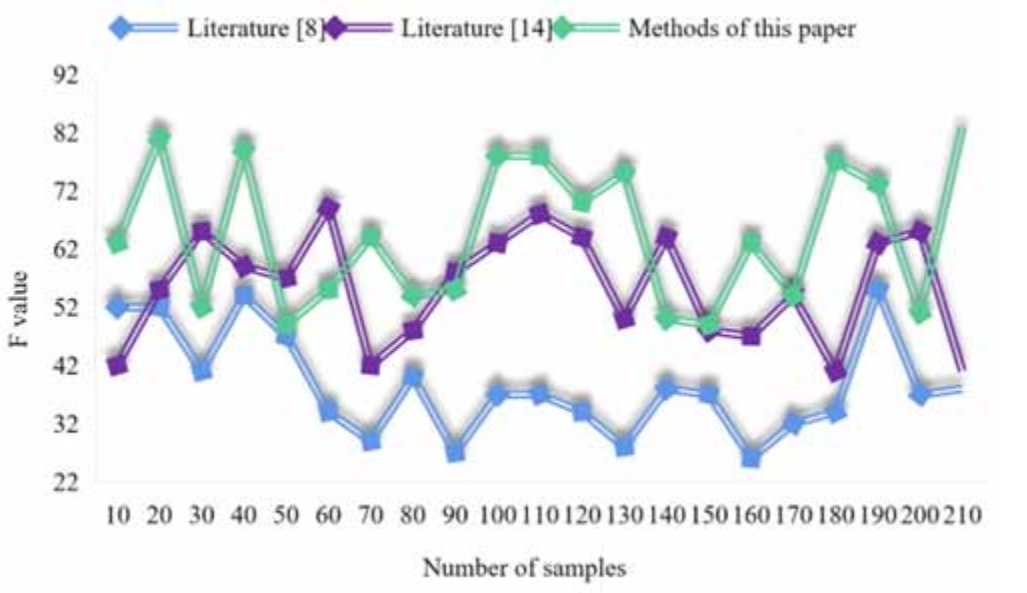


Figure 6. Comparison of F values under different methods



evaluation opinions and suggestions to promote teachers' continuous progress. These evaluation forms are shown in Table 4.

With the rapid development of computer information technology, qualified schools can encourage teachers to make electronic teaching plans. An electronic teaching plan is a multimedia teaching plan using information technology. It can better reflect the teaching ideas and teaching process of lesson

Table 4. Evaluation form of music teaching plan

Evaluating Indicator	Evaluation Points	Weight	Opinion Rating			
Teaching objectives	Teaching objectives are comprehensive and reasonable.	5	5	4	3	1
	Specific teaching objectives and strong operability.	5	5	4	3	1
Teaching difficulties	Accurate determination of important and difficult points in teaching	11	11	10	8	3
Teaching process	The reasonable teaching structure is conducive to stimulating students' initiative, enthusiasm and creativity. The teaching links are clear, complete and specific, which reflects the guidance of learning methods.	32	32	23	20	11
	The teaching process should embody the concept of "new curriculum standard" and be carried out practically.	11	11	7	5	3
	The teaching process reflects the use of multimedia and teaching aids.	6	6	5	3	3

preparers, has strong sharing, is conducive to exchange and discussion, modification and preservation, and improves efficiency. The electronic teaching plan can be evaluated according to the standard of the traditional paper teaching plan.

Among the collected course comments, 1200 positive and 1200 negative comments were manually selected. This experiment uses the approaches outlined in Zhang et al. (2020) and Whissell (1989) and this method to calculate the accuracy of the polarity of course comments in the emotional dictionary. The results are shown in Figure 7. As can be seen from the results in Figure 7, among the three methods, the average correct rate of Zhang et al. (2020) is 35.18%, the average correct rate of Whissell (1989) 50.30%, and the correct rate of this method can reach 69.19%. Therefore, it can be seen that this method is accurate and effective in judging the polarity of curriculum comments.

In this experiment, four categories of music courses are used to analyze the emotional polarity of emotional features extracted before and after the improvement of teaching effect (A1), performance responsibility system (A2), teacher effect (A3), and decision-making and management (A4). The experimental results are shown in Figure 8 and Figure 9.

From Figure 8 to Figure 9, it can be seen that the accuracy of emotional polarity analysis of extracting emotional features before and after the improvement is not much different on the whole. After the improvement, the parameters of extracting emotional features of part of speech have slightly decreased compared to before, in which the value difference of classifying people and events is 0.65%. The main deviation is that the core emotional words in some parts of speech emotional features are not the only ones. However, the improved part of speech feature extraction method filters out most of the part of speech features that do not contain emotional words by filtering and matching the emotional values of the core words, further reducing the complexity of emotional calculation and reducing the interference of non-emotional part of speech features on emotional value calculation. Therefore, the overall performance of the improved part of speech feature extraction method is better.

CONCLUSION

In this study, the weighted method was used to analyze the emotional tendency of sentences in music courses and compared with Zhang et al. (2020) and Whissell (1989). The experimental results show that the accuracy of analyzing the emotional tendency of sentences in music courses using the method of this paper is higher than the methods of Zhang et al. (2020) and Whissell (1989), proving the method's effectiveness. Meanwhile, to evaluate the quality of the lesson plans, a combination of self-assessment, mutual evaluation and group evaluation can be used and combined with the Evaluation Form for

Figure 7. Comparison of polarity calculation results of comments

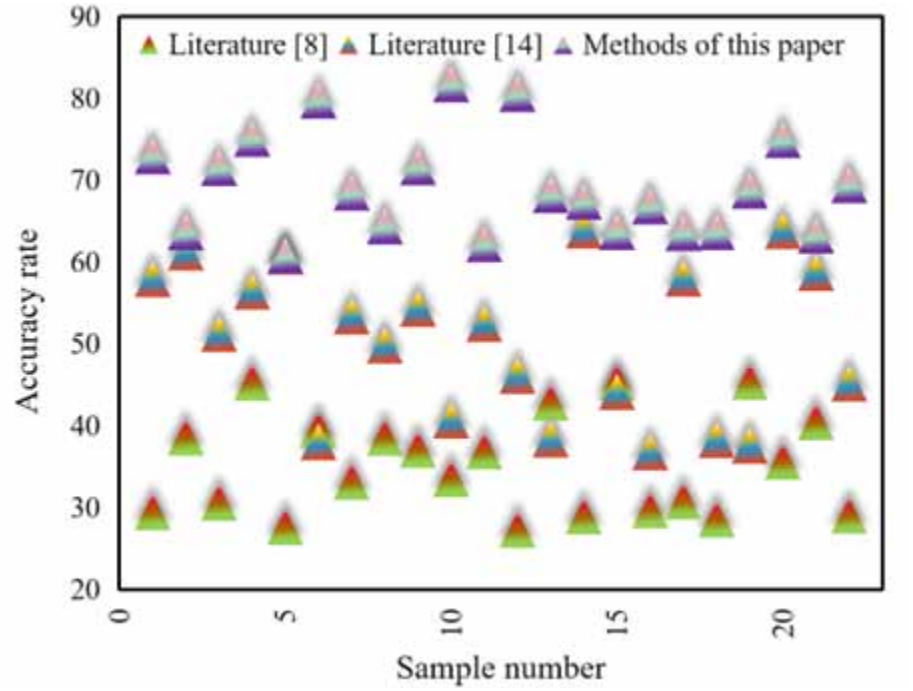
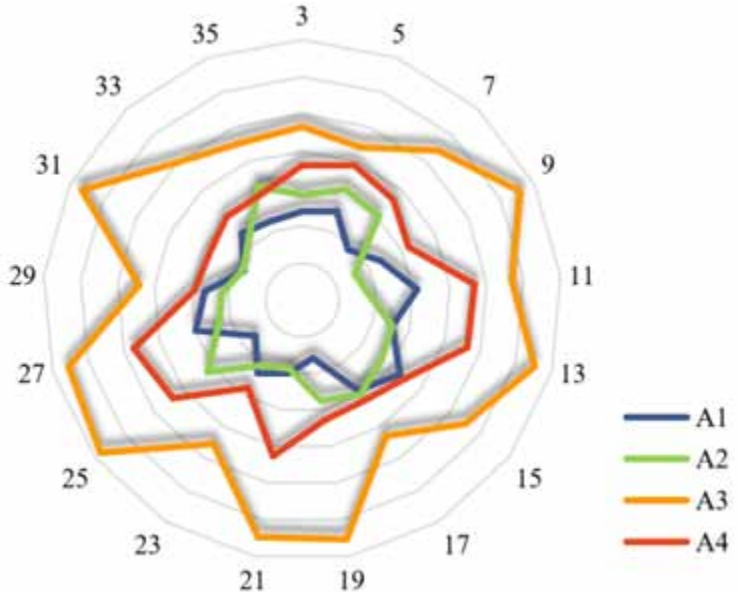
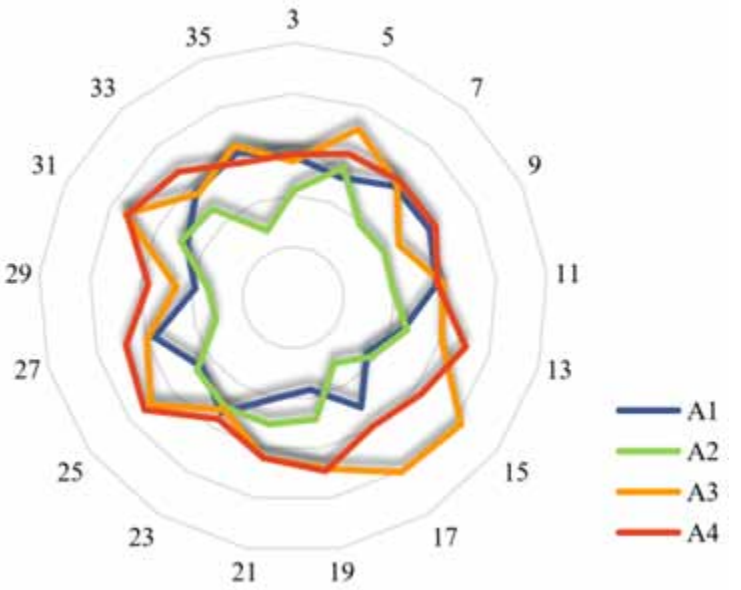


Figure 8. Part of speech feature extraction before improvement



Junior High School Music Lesson Plans to conduct a comprehensive and reasonable assessment to promote teachers' progress. The evaluation of e-lesson plans can be assessed with reference to the criteria of traditional paper lesson plans.

Figure 9. Improved part of speech feature extraction



In addition, by collecting course comments and manually selecting positive and negative comments, this experiment uses the Zhang et al. (2020) and Whissell (1989), and the method of this paper to calculate the accuracy of the polarity of course comments in the affective dictionary. The experimental results show that the correct rate of this paper's method in judging the polarity of course comments reaches 69.19%, which is significantly higher than the methods in Zhang et al. (2020) and Whissell (1989), proving that this paper's method is accurate and effective in judging the polarity of course comments. Finally, for the four major categories of music courses, the improved lexical feature extraction method performs better in sentiment polarity analysis, which reduces the complexity of sentiment computation and interference factors.

In summary, this study achieved reliable experimental results in music course sentiment analysis and lesson plan evaluation, which provides a valuable reference for improving teaching effectiveness and lesson plan quality. Meanwhile, the understanding of course feedback can be further enriched by collecting course comments and applying the method of this paper to make sentiment polarity judgments.

Deep learning and neural network-based methods (e.g., Transformer, BERT, and GPT) have become the mainstream methods for sentiment analysis tasks. Compared with the study in this paper, these models can better capture the context and dependencies between words, improving the accuracy of the sentiment analysis task. They can also more fully utilize large-scale labeled and unsupervised data for pre-training, improving the models' performance and generalization ability. In addition, the latest models have made breakthroughs in contextual understanding and can better understand contextual information, thus capturing utterances' sentiment tendencies more accurately.

This study has important implications for educators and curriculum designers. It provides a method to gather students' evaluations and feedback on music courses, allowing educators to improve teaching strategies and enhance teaching effectiveness. Additionally, curriculum designers can use this method to collect students' feedback and design a curriculum that better suits their needs. This research contributes to the practice and reform of music education, improving the evaluation and quality of music courses. However, this approach has limitations in constructing a sentiment lexicon for music course evaluation, such as dependency on a high-quality corpus and difficulty in considering

context and domain specificity. Strategies such as selecting a high-quality corpus, combining manual annotation and machine learning algorithms, and introducing contextual information can address these limitations. These strategies will help improve the accuracy and usefulness of the sentiment lexicon for music course evaluation.

CONFLICT OF INTEREST

The author declares that there are no conflicts of interest.

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