



# Research on Teaching Reform Algorithm of Modern and Contemporary Literature Education in Colleges and Universities with Data Mining Technology

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**Abstract.** This paper first expounds the current situation of the teaching of modern and contemporary literature course in Colleges and Universities under the background of data mining algorithm, and then discusses the teaching reform strategies of modern and contemporary literature course in Colleges and Universities under the background of network resources, including carrying out diversified teaching based on network resources, using teaching software to carry out information-based teaching, and changing the traditional single evaluation mode. Finally, the significance of the teaching reform of modern and contemporary literature in Colleges and Universities under the background of network resources is put forward.

**Keywords:** Data mining · Modern and contemporary literature teaching · Teaching software

## 1 Introduction

Teaching reform is the reform of teaching content, method and system, which aims to promote the progress of education and improve the quality of teaching. There are many reasons to promote the teaching reform, mainly including: (1) the progress of science and technology and the development of social productivity; (2) social change, including the change of political and economic system and ideology; (3) the development of educational science and other marginal disciplines affects the change of educational concept. Teaching reform can be divided into: (1) single reform. Only the content of a certain subject, a certain system (such as examination system), a certain principle and method should be reformed. (2) Overall reform. It refers to the overall coordinated reform of relevant teaching plans, tasks, contents, methods and systems.

The ways of reform are as follows:

- (1) Reform under the guidance of new theories and policies. After a long period of planning and expert argumentation, a reform plan is formed and carried out in a planned and step-by-step manner. Such reform is often carried out in a country or a large scope.

- (2) Experimental reform. Under the guidance of certain theories, we should carry out the whole or single reform experiment in a certain area or school to obtain data and accumulate experience and lessons.
- (3) We should promote the reform. After the selection and optimization of the excellent teaching experience or reform experimental results which have been tested by long-term practice, it is planned and step-by-step to promote them in a larger area and scope (see Fig. 1).

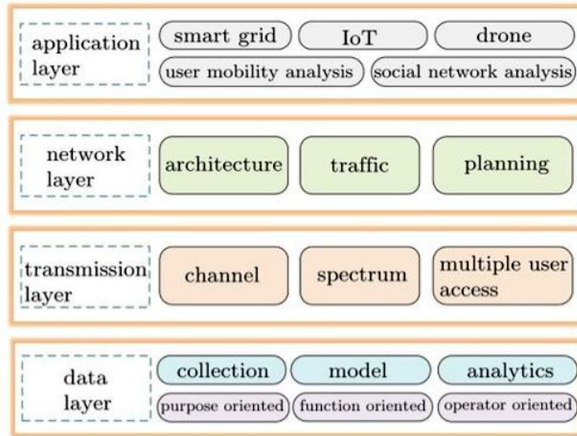


Fig. 1. The frame of big data with data minging

## 2 Data Mining Algorithm

### 2.1 BP Neural Network

BP neural network includes input layer, output layer and hidden layer. If the input of input layer is  $x_i$ , then its output is:

$$O_i^{(1)} = x(i), i = 1, 2, \dots, n \tag{1}$$

If the weight coefficient of BP neural network hidden layer is  $w_{ij}^{(2)}$ , and  $f[\cdot]$  is the mapping function, then the input and output calculation formulas are respectively expressed as:

$$net_i^{(2)}(k) = \sum_{j=1}^m w_{ij}^{(2)} O_j^{(1)}(k) \tag{2}$$

$$O_i^{(2)}(k) = f[net_i^{(2)}(k)] \tag{3}$$

The initial values of some parameters of BP neural network, such as:  $w_{ij}^{(2)}$  and  $w_{ij}^{(3)}$  are determined by experience, so it is difficult to train the optimal BP neural network. In this paper, adaptive genetic algorithm is introduced to determine their initial values.

### **3 The Present Situation of Modern and Contemporary Literature Teaching in Colleges and Universities**

#### **3.1 Main Courses**

Chinese modern and contemporary literature is the main course of Chinese language and literature major in Colleges and universities. The course mainly includes the context of Chinese literature history, famous writers' works and literary phenomena since the beginning of new literature, so as to cultivate students' ability to read literary works, appreciate writers' creation and analyze literary phenomena. With the development of Internet technology, the teaching of modern and contemporary literature has rich network resources, but the utilization rate is not high [1]. At present, most teachers only use multimedia to teach, such as playing related films, music, pictures and using electronic courseware, and even some teachers only use oral narration. In such a teaching mode, showing a relatively old-fashioned, rigid teaching status quo, students will feel monotonous, boring, easy to lose interest in learning, just mechanical learning and exam. What's more, it is "dumb" teaching, in which teachers explain the whole process, students listen passively, teachers write on the top, students write down below, and students actively participate in the course.

#### **3.2 Course Nature**

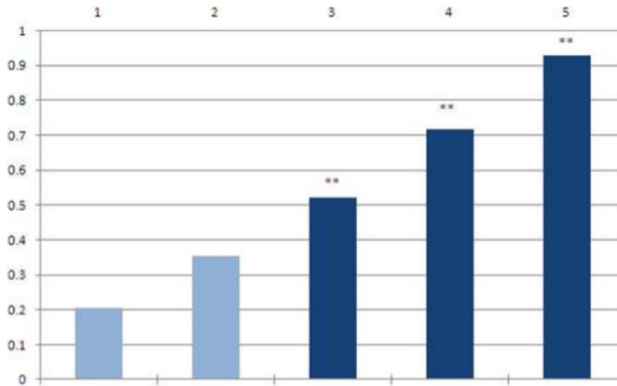
On the one hand, the above problems are due to the nature of the course. Before the teaching of the relevant works, a lot of reading and background introduction are involved. Inevitably, teachers and textbooks are the main ones, while teachers rely on explanation and use less modern information technology. On the other hand, it is also related to teachers' teaching philosophy and the popularity of school teaching informatization [2]. Due to the special nature of the curriculum, teachers are more willing to use the traditional teaching mode, but they have less understanding of new technology and concept, and the operation of new technology is more complex. Therefore, the actual teaching effect is not ideal. For example, the production and application of micro class can greatly improve the teaching efficiency of teachers, Rich teaching mode, but the technical requirements of teachers are too high, and there is no relevant technical training and supporting teaching facilities, teachers in the production of micro class hours spend a lot of energy, little achievement. Some teachers are older and less receptive to the new teaching mode and concept.

### **4 Teaching Reform Strategy of Modern and Contemporary Literature Course in Colleges and Universities Based on Data Algorithm**

#### **4.1 Carrying Out Diversified Teaching Based on Network Resources Based on Data Mining Algorithm**

Although it is difficult for teachers to complete the production of online courses, teachers can rely on rich network resources to carry out diversified teaching and enrich teaching mode. At present, many institutions and universities have set up teaching teams to

produce excellent courses, such as MOOCS, love courses and other websites. There are many courses on modern and contemporary literature, such as Suzhou University, Capital Normal University, Nanjing University, Jilin University and so on, as well as some special studies, Such as Mo Yan's novel research, contemporary popular novels and network novels, the essence of Chinese culture and literature, and the introduction of Nobel Literature Prize Works. Teachers can search for relevant teaching resources according to the needs of the course through the Internet. For example, when teaching Mo Yan's works, teachers can combine the research course of Mo Yan's novels set up by Beijing Second International Studies Institute on moocnet as an extension of classroom teaching. Because the teaching time is limited and the interpretation of writers' works is unlimited, students' horizons are expanded. Students can self-study online, complete the course tests and exercises, and then initiate discussions in class [3]. At the same time, students can also find their concerns and share network resources according to their own interests. For example, students are more interested in online literature and popular literature, but the proportion of this part in teaching materials and teaching is not high. Students can find course resources according to their interests and conduct interactive communication, To form a good learning atmosphere. Therefore, it can change students' passive learning into active learning, take a certain topic as the starting point, expand research horizontally or vertically, gain more for students, and make classroom teaching more flexible, stimulate students' interest and enrich teaching staff (see Fig. 2).



**Fig. 2.** The effect of teaching reform simulation

#### 4.2 Using Teaching Software to Carry Out Information Teaching

At present, there are many kinds of teaching software, such as rain class, classroom school, bisection, etc., but the utilization rate of modern and contemporary literature teachers is generally not high. On the one hand, due to the complexity of the software application program, people are deterred; on the other hand, the nature of modern and contemporary literature curriculum causes teachers to rely on the traditional mode and are unwilling to make changes. Practice has proved that information-based teaching is

of great help to classroom management, and the key lies in the change of concept. At present, many teaching software can complete many aspects of classroom management, such as attendance, assignment and correction, communication between teachers and students, and can realize continuous communication after class. The traditional homework arrangement and marking will cost more manpower and material resources. The homework finished by the teacher is piled up like a mountain, and the teacher can't give feedback to the students in time. The teaching software provides a network virtual platform for teachers and students. In the teaching process of modern and contemporary literature, teachers can arrange homework in the network class. For example, students can complete the reading of Lu Xun's cry within two weeks and submit a 300 word reading impression. Students can immediately get information and have time nodes to remind them. After students submit their homework, they will also show it clearly, Omit the teacher - after correcting the homework, you can also feedback to the students in time, and you can have one-to-one communication with students. In addition, teachers can also put the homework in the place similar to forum or post bar to share resources, so that all students can see the feedback submitted by others and make comments and discussions. In addition, the teaching software can also be connected with classroom teaching equipment and applied to classroom teaching management (see Fig. 3).

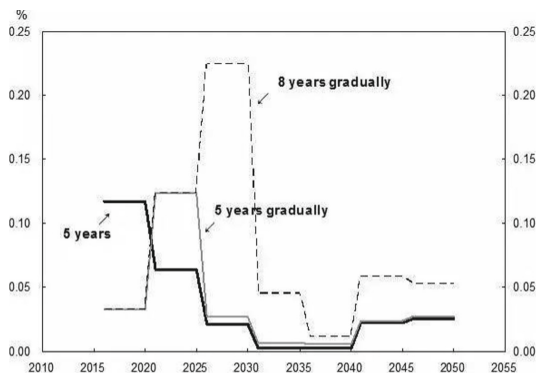


Fig. 3. Effect of using software simulation

## 5 The Significance of Teaching Reform of Modern and Contemporary Literature in Universities Under the Background of Data Mining Algorithm Combined with Network Resources

The development of Internet has not only changed people's life, but also changed people's thinking mode. The current college students are growing up in the environment of the Internet, their thinking mode and learning state are very different from the past, the network can search for a variety of information, these information give people more choices, but also formed a fast-food cultural atmosphere, leading to the current college

students almost lost the patience of literature reading, weakened the feeling of literary ability. As Professor Wang Weiping said when talking about the curriculum reform in Colleges and Universities: “the social influence of literature is gradually shrinking, the charm of literature as a major is slowly declining, and the attraction of literature, as the main course of Chinese department in universities, is also quietly weakening. Today’s college students tend to pay more attention to practicality than quality, utilitarianism and humanism. They do not feel the great potential of deep literature and culture for shaping people [4]. Their pursuit of foreign language and computer grade certificate seems to be far greater than their love of literature. It is an undeniable fact that scholars are worried about students’ curriculum learning and social education. In contrast, the rich and diverse network information is more attractive to students. However, there are advantages and disadvantages in the way of obtaining these information. On the one hand, it makes people’s access to knowledge more efficient and intuitive, on the other hand, it also dispels the depth and charm of literature and art itself. As some scholars said: “when we are immersed in the perceptual intuition and vulgarization of modern visual cultural images, there will be a thousand Hamlets in a thousand readers in literary reading, and there will be only one Hamlet in a thousand audiences [5].

## **6 Analysis of the Current Situation of College Students’ Core Literacy and College Classroom Teaching Based on Investigation and Research**

### **6.1 Analysis on the Current Situation of College Students’ Core Literacy**

According to the questionnaire, this paper analyzes the core literacy of college students. There are three questions in the literacy of humanity. 76.04% of the students who can actively listen to other people’s opinions and suggestions choose to conform to it. If I do something wrong, even if I am embarrassed, I will admit it [6]. 78.7% of the students think it conforms to it, I will take the initiative to find that 79.53% of the people who choose to meet the requirements of all things that make people feel good in life. Through the above data, we can draw a conclusion that college students have good cultural heritage literacy. Through the data investigation and analysis of scientific spirit literacy, when I can correctly evaluate whether the information meets my own requirements and will not blindly pursue, 79.7% of the students choose to meet the requirements, I can resolve other people’s conflicts with a rational and peaceful attitude. 74.7% of the students choose to meet the requirements. 62.4% of the students think that they can meet their own requirements when I use the professional knowledge I have learned. From the above analysis, it can be seen that college students lack the ability to deal with and solve problems [7].

### **6.2 Analysis of the Current Situation of Classroom Teaching in Colleges and Universities**

Through the analysis of the questionnaire and exploratory factor analysis, four factors affecting college classroom teaching are found. The following four factors are analyzed

on the current situation of college classroom teaching. The analysis of the items of classroom teaching methods shows that 77.7% of the students choose the items that teachers often use the teaching method for classroom teaching, 42.1% of the students choose the items that teachers will explain the corresponding examples, and 75.88% of the students choose the items that are in line with the requirements of perfect hardware facilities, 72.04% of the students met the requirement of the teacher's association that students should be in the front row [8]. Among the items that the teacher's Association encouraged students to help each other in their study, 79.53% of the students chose to meet the requirement. Among the items that the teacher would assign practical activities and ask students to share in the classroom teaching, 77.7% of the students chose to meet the requirement. According to the results of data analysis, it can be seen that most of the classroom teaching methods in Colleges and universities choose teaching method, the method is single, and the interaction between teachers and students is less [9].

## **7 Problems in College Classroom Teaching Based on College Students' Core Literacy**

### **7.1 Single Teaching Method, Lack of Interactive Thinking**

According to the survey results, teachers will explain the teaching content directly by teaching method. Teaching method is to directly use language to make statement and explanation of problems, and improve students' understanding of teaching content through language expression. The non repudiation teaching method is the most direct and effective way to explain knowledge, but the teaching method mainly focuses on the teacher's "mono" explanation, which is not conducive to students' independent discovery and understanding of knowledge. At the beginning of the new century, China has put forward the concept of classroom teaching which encourages students to take initiative, interactive cooperation and mutual research and exploration, which guides them to fully demonstrate their interaction in the activities. However, according to the survey, teachers choose teaching method mainly based on Teaching in the classroom teaching of colleges and universities. Teachers explain in a single way according to the knowledge structure, and students listen to and take notes, The interaction frequency is less, and the classroom atmosphere is dull [10].

First of all, most teachers at this stage are deeply influenced by Herbart's "four stages" theory of teaching. In the whole class teaching, they often adopt the following steps: introducing new content, explaining new lessons, consolidating new knowledge and reviewing and arranging homework content after class. The specific performance is that teachers teach through language or with the help of multimedia and other technical means, Most of the knowledge that students need to master in a class is mainly in the form of teachers' language explanation, and students' listening is a passive form of instilling knowledge. Secondly, the teaching content and plan of each class need to be carried out according to the outline stipulated by the state and the school. In order to complete certain teaching tasks within the specified time limit, most teachers rarely use the methods and models of group cooperation or free exploratory learning, while some teachers adopt more conservative teaching methods in order to complete the tasks within

the appropriate scope, To achieve a certain effect. Thirdly, most of the current college teachers use lecture method as the main method of classroom teaching for many years, and change the teaching method in a short time, so it is difficult for teachers to find their own teaching method, so they continue to choose the relatively suitable lecture method [11].

## **7.2 The Goal of Classroom Teaching Is Knowledge-Based, Ignoring the Change of Emotion, Attitude and Values**

The goal of classroom teaching is a sign of value orientation. It is mainly to achieve a desired effect through teaching. What kind of method is used in classroom teaching is mostly based on the given teaching goal. The goal of classroom teaching is also an index to evaluate the quality of classroom teaching. The goal of classroom teaching in the new era should not only be the acquisition of theoretical knowledge taught by teachers, It should be the cultivation of students' thinking ability, judgment ability and practical ability. However, at this stage, the classroom teaching goal of colleges and universities is mainly to impart and accumulate knowledge, ignoring the continuous changes of personality and ability in this process [12].

On our way forward, we need a clear goal to guide the direction. No matter what action we take, we need to have a specific goal in line with the reality to guide [13]. The goal of classroom teaching is to guide the direction of teachers' teaching. The mastery of subject knowledge is not only the center of contemporary classroom teaching, but also a series of evaluation criteria for students and teachers. In order to complete the planned teaching content within the specified time, the best and most direct teaching method is adopted, which can not only avoid the possible interference in the classroom, but also greatly avoid some students challenging teachers' knowledge and ability. This kind of classroom teaching simply optimizes the whole teaching process. Students only need to listen to the ready-made knowledge and experience or problem-solving steps or memorize them by rote to master the content of a lesson in a short time, which excludes students' active participation in thinking and cultivates students who only master knowledge but do not know how to think and ask questions [14].

Teachers play an important role in classroom teaching, and their ideas on classroom teaching will have an impact on the whole classroom to a great extent [15]. Every teacher should have the ability to have a clear awareness of the curriculum and a clear and vivid understanding of the curriculum, and reasonably treat the goal of classroom teaching and the mechanism of classroom teaching. In the process of classroom teaching, every teacher should be able to adjust his own performance according to various sudden changes, choose the corresponding response methods, complete the significance of classroom teaching, and realize the value. With the development and progress of the times, classroom teaching no longer only pays attention to the transfer of knowledge, but more attention to the generation of ability, from teaching to learning. But at present, many teachers are still not strong in curriculum consciousness, or focus on "teaching", and it is difficult to change to the direction of "learning" [16].



## 8 Conclusion

To sum up, the data mining algorithm combined with the network resources environment is very urgent and significant, which is not only applicable to the teaching reform of modern and contemporary literature, but also applicable to the curriculum reform of many majors in Colleges and universities. This paper is only a brief discussion and analysis, and it is urgent to conduct more in-depth research and exploration in the actual teaching.

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