

Human-computer Interaction Teaching for the American History Evolution Using Cloud Computing

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Abstract: *In recent years, integrating the development of American history into history education has been an important way of history education reform. The teaching of historical evolution can not only supplement the content described by teachers, but also promote students' understanding of history and methods, and cultivate their historical thinking ability. However, how to use historical data in the teaching of historical evolution to achieve the learning objectives is still a subject of in-depth study. Therefore, by studying the characteristics and classification of historical evolution, this paper analyzed the role of current American historical evolution and the approaches of teaching, and finally put forward the teaching principles of American historical evolution through human-computer interaction. Compared with the traditional teaching mode, the absolute value of similarity under the new teaching mode increased by 33.6%, and the extreme difference decreased by 73.7%. The teaching quality of the new teaching mode was 9.6% higher than that of the traditional teaching mode, the students' thinking ability was 7.1% higher than that of the traditional teaching mode, and the students' skill level was 6.9% higher than that of the traditional teaching mode. In short, cloud computing and human-computer interaction design can improve the teaching quality of the evolution of American history.*

Keywords: *American History, Evolutionary Teaching, Human-computer Interaction, Cloud Computing*

1. Introduction

In the United States, history education attaches great importance to understanding the nature of history and historical knowledge, especially the relationship between historical data and history and common sense. The historical evolution of the United States is constantly changing in the process of unification and diversification, and constantly updating and struggling to develop. American culture also has the same experience. The development of history education in the United States has long been highly valued by the political and educational circles, and has witnessed the development of mutual struggle, mutual exclusion and tolerance, as well as the transformation between unity and multiculturalism. Therefore, the interactive design of American history change teaching and research has important practical significance.

The process of historical evolution is very complex, and many scholars have studied it. By defining the terms Asian American and American, Rodriguez, Noreen Naseem believed that teachers use anti-narrative and children's literature to destroy the normative concept of citizens, thus implementing cultural citizenship education [1]. Straubhaar, Rolf drew on two parallel ethnographic studies to study participants' experience in a specific alternative teacher education model variant. He explored the thinking process that led young people to join these organizations [2]. Guzman Valenzuela, Carolina inspected the higher education curriculum and teaching practice aimed at the decolonization of Latin American universities. He provided insights on the decolonization curriculum and teaching practice in universities, and how the decolonization education plan based on critical boundary thinking and power socialization changed Latin America [3]. Dunaway, David King discussed the development of oral history in the United States and how it can make this field a major interdisciplinary goal in an interesting and useful way [4]. The studies have described the historical evolution and the role of teaching, but they have not been analyzed in combination with cloud computing.

Human-computer interaction and cloud computing are widely used in teaching. Kim, Jihyun surveyed students' views on AI teaching assistants in higher education through an online survey. The research results show that the perceived usefulness of AI teaching assistants and the convenience of communication with AI teaching assistants are the key to understanding the final adoption of education

based on AI teaching assistants [5]. Villena Taranilla, Rafael focused on analyzing the ultimate benefits of virtual reality in primary school history teaching, and compared its results with the results of traditional teaching resources in two dimensions of learning achievement and student motivation [6]. The studies have described the application of human-computer interaction in teaching, but there are still some deficiencies in the analysis of historical evolution.

Due to the diversity of American history, teaching is difficult. With the help of human-computer interactive teaching such as cloud computing, learning efficiency will be further improved.

2. Changing of American History Evolution Education

2.1 Teaching of the Evolution of American History

The development of American history education has experienced ups and downs. From the end of the 19th century, history courses began in the United States. History courses before the Cold War were very popular. Many schools provided history courses, but the teaching methods were rigid and dogmatic. History can only be memorized. From the development of history itself, this concept still seems to be deeply rooted today. At the beginning of the cold war, especially when the Soviet Union successfully launched the satellite, the United States suffered huge losses. The United States education sector carried out a thorough reform, but the curriculum reform triggered a cold winter in the history discipline. In the 1980s, many educators and celebrities began to demand that history must have important practical significance. Under the influence of this trend, the United States began to reform the curriculum, and history returned to the agenda, but the impact was very small, which led to students' interest in religion and literature. By recording the historical data of corporate social responsibility advertising, it has laid a theoretical and practical foundation for the strategic communication of corporate social responsibility [7]. The standard has brought about the reform of American history education, which is also the historical development of history education. This, of course, also led to in-depth discussion of historical lessons, and finally revised the standard. The evolution of historical lessons has been strictly regulated. Since then, the history evolution teaching has developed rapidly in the American history class and become a popular learning mode.

The characteristics of American history evolution teaching are mainly reflected in the following aspects. The first is the transformation of value orientation. Through historical materials, people can gradually understand history, understand history and master the learning methods of history, which can help students construct historical statements and apply them in practice. The function of history evolution teaching is not only to pay attention to the growth of students, but also to release their inner potential, so that students can focus on learning and gradually adapt to it, and finally improve their self-worth and promote the transformation of history learning values. The second is to pay attention to learning evaluation. Teachers and students work together to develop different evaluation criteria for learning performance according to students' expected goals, and then use them as guidance for students' analysis and research work. The textbook has objective and effective evaluation at the beginning and end, which is an evaluation of the integrity of students' personality and plays a role in promoting personality. It allows students to see not only themselves, but also others, so that the development of team spirit can be reflected in learning. Thirdly, it is rich in historical resources. The historical materials of American history course are not only traditional paper materials, but also rich in electronic history records online. All public resources and works of art can be found on the website of the Library of Congress. Of course, the historical materials in textbooks are more suitable for student education. Therefore, the extracurricular tutoring of American history education requires rich historical materials, which also come from different sources. As teachers, they not only track the quantity of historical materials, but also pay attention to their quality. This means paying special attention to the role of using first-hand information and evidence. In the classroom, teachers provide a lot of first-hand information to ensure that there is enough information and teaching content. The fourth is to focus on cultivating students' historical thinking ability. History courses are taught in various forms, no matter the form is complex or simple, with the purpose of cultivating students' historical thinking. So this is not only the requirement of the course, but also the responsibility of every history teacher. The fifth is to emphasize the combination of students and teachers. The compilation process of history textbooks is very detailed and convenient, making it easier for teachers to achieve their goals. From the perspective of students' subjectivity, the teaching of historical materials is a process conducive to the formation of students' consciousness.

2.2 Approaches to Teaching the Evolution of American History

The preparation for the teaching of American history evolution is mainly carried out from the following aspects, as shown in Figure 1. The first is to guide students to complete the process of historical development and generate understanding. This is the main stage of historical data education. At this stage, teachers should guide students to understand the basic concepts and characteristics of historical data. In addition, it should also be introduced and displayed in strict detail. In order to let students understand the main types of historical development, when talking about the main materials, the teacher would classify them according to the simplest historical materials. Historical materials can be divided into primary and secondary historical materials, and the primary and secondary historical materials can be clearly judged. In order to make students have concepts in their minds, they would pay special attention to the formation of content to help everyone use it in subsequent classes. History teachers in American middle schools have made full preparations at the initial stage of history material teaching, which not only affects the interests of students, but also can clearly explain the problem through the collected data. This also involves the concept and main characteristics of students' historical data, which lays a good foundation for further research. The second is to determine the type of historical development. In this process, the teacher concentrated on explaining and explaining different types of historical data. Racial discrimination is not conducive to the physical and mental health of African Americans [8]. According to the current historical development, it can be easily divided into relics and remains. The relics can be moved, but the remains are fixed. When the history teacher talked about the types of historical development, he vividly displayed the types of historical events in the form of slides and showed the advantages of various historical materials. Finally, he emphasized the use of primitive historical evolution. Although the American history course emphasizes the difference between primary and secondary historical materials, especially primary historical materials, that is, the use of original historical materials. In short, there are three aspects of the historical evolution education in the United States. In the process of teaching historical materials, history teachers in American middle schools have been very strict from the beginning, from simple to in-depth, from simple to solve big problems, which impressed students and laid a good foundation for more learning.

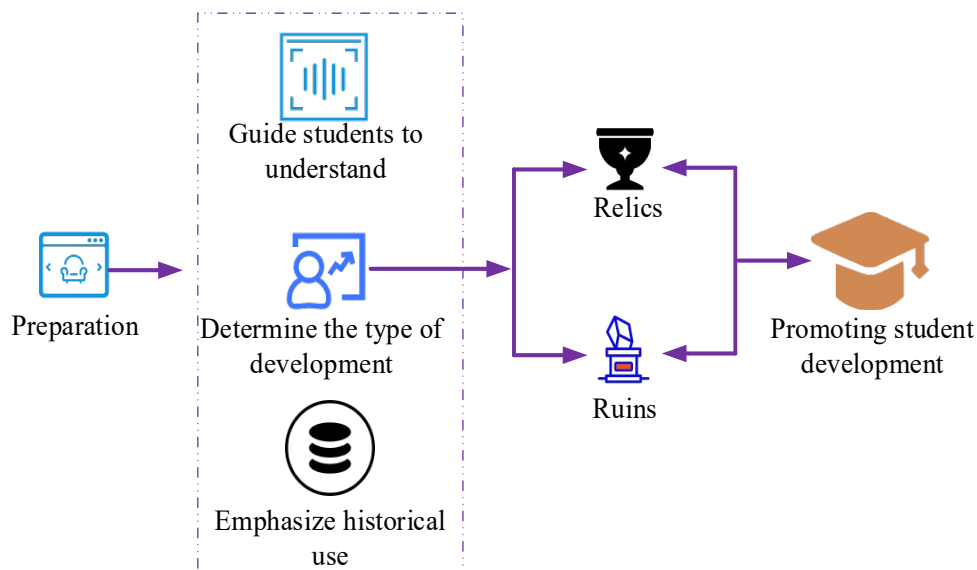


Figure 1: Preparations for the teaching of American historical evolution

2.3 Selection of Historical Evolution Teaching Resources

Historical development records are divided into text, oral, physical, visual and voice records. In order to learn and teach history, it should pursue integrity, truth, transparency and perfection. To carry out the teaching of historical evolution, it is necessary to have sufficient raw materials. The selection of historical materials is summarized into six aspects, as shown in Figure 2. The first is to make use of existing book resources. The historical materials used in the textbooks are selected by experts, so people should make full use of various historical materials, words and images in the textbooks. The second is to find resources in historical works. Looking for historical materials in various classical works is one of the main sources of historical materials in history courses. Some typical historical

documents can also be found and borrowed from authoritative historical works. The acquisition of historical materials is directly related to the level of education. Therefore, teachers should continue to read and let students continue to learn. The third is to find resources from professional historical documents. Various professional historical documents are usually concentrated on a specific topic, and many historical documents are referred to. History teachers can also be used as teaching materials. It is important to ensure the accuracy of the original materials cited by the author. The fourth is to find resources from network resources. A large number of network resources provide rich historical information and promote the historical process. Generally speaking, relevant historical information can be found by searching keywords. The type is different from the traditional type of information dissemination. Everyone can become a reader and a worker. Therefore, a large increase in resources would lead to a decline in the quality of materials. The authenticity and accuracy of historical archives must be fully determined. The fifth is to find resources in life. There are many sources of historical data in life. People can pay more attention to cultural relics. In fact, people can also get many complete historical data in life. Teachers should keep this in mind at all times, and encourage students to pay attention to the historical materials around them in class, and enrich the history teaching process with all available historical materials. The sixth is to find resources in the test questions. In the test questions, a large number of new historical documents would appear in the printed edition every year. They hope to explore students' historical thinking with new environment and materials. The historical documents of these works may also be related to classroom teaching. Of course, over the years, many historical elements of general education have been extracted from papers, which makes teaching relevant. This helps to improve efficiency, but excessive superstition of the author must be avoided.

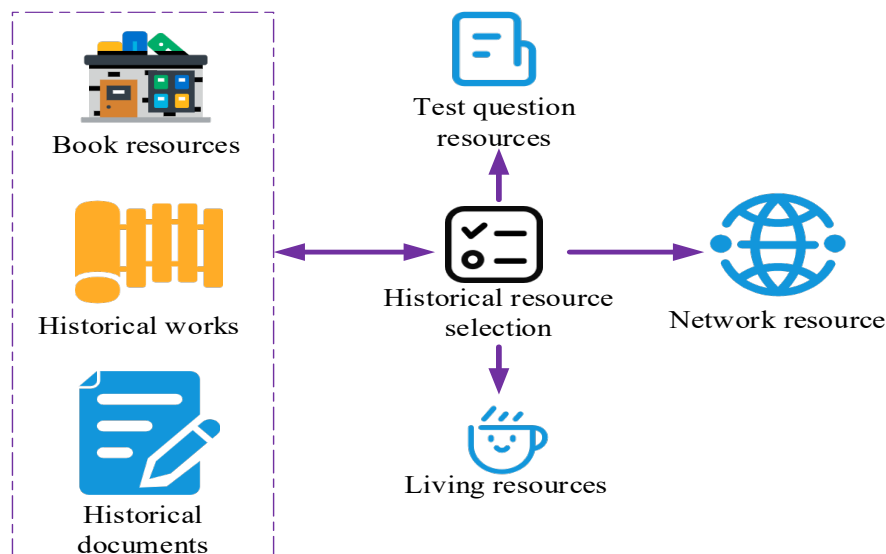


Figure 2: Selection of historical evolution teaching resources

3. Human-computer Interaction Teaching for American History Evolution under Cloud Computing

3.1 Advantages of Human-computer Interactive Teaching for American History Evolution

The role of cloud computing in the historical evolution mainly includes the following points. The first is to help students develop physically and mentally. History evolution teaching not only enriches teachers' teaching methods, but also broadens students' horizons. Students can use cloud computing to communicate with teachers and students after class to solve historical problems together. This kind of communication is not limited to space. The communication between teachers and students as well as between students can be improved, and it also helps to improve their communication and cooperation ability. Students can continuously improve their autonomy and self-expression ability through cloud computing, which is conducive to their physical and mental development. The second is to help improve teachers' teaching level. In the teaching of historical evolution, teachers must design teaching according to the actual situation of students to meet the needs of students to learn historical knowledge. The changes in teaching methods put forward higher requirements for history teachers. History teachers should not only have professional historical knowledge, but also have certain historical knowledge, and

also master cloud computing technology and advanced education concepts. If teachers can't answer students' professional questions, they can't meet students' requirements for learning history knowledge. The third is to help cultivate public values. The curriculum content must put forward specific requirements for civic education. It must be pointed out that this is the basic line of the history section which is also defined as the country. The United States is a country with a diverse population. Its social structure includes different races and cultures. Due to the diversity of American society, it is necessary to carry out meaningful historical development education in order to cultivate qualified American citizens. Because first-hand materials can improve students' loyalty to the country, help students understand their historical background clearly, and cultivate students' national self-confidence. In short, the development and education of cloud computing history is very valuable.

3.2 Principles of Human-computer Interactive Teaching for American History Evolution

The human-computer interaction design of American history evolution teaching under cloud computing should start from the following aspects, as shown in Figure 3.

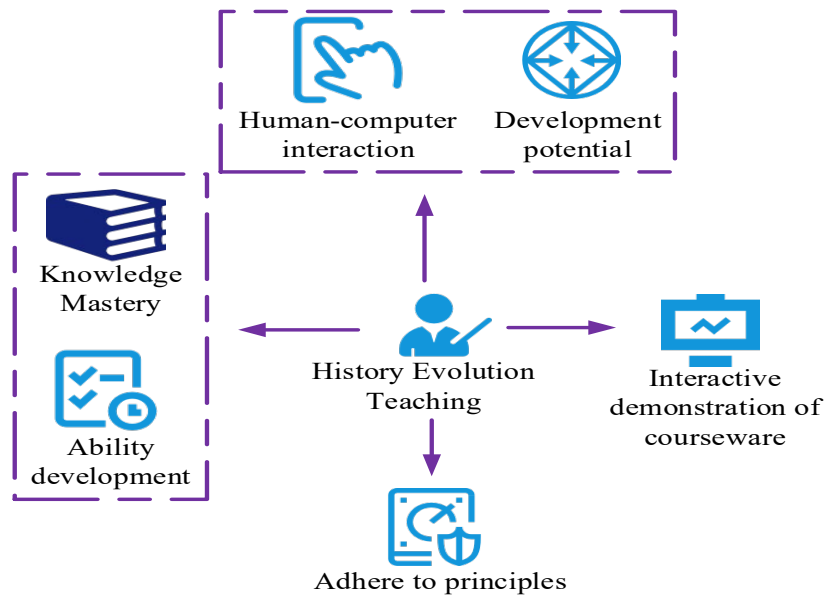


Figure 3: Design of American history evolution teaching under cloud computing

3.2.1 Knowledge Mastery and Ability Cultivation

By teaching the historical changes of cloud computing, American teachers do not pursue the process of knowledge input and output, but are committed to cultivating students' ability to actively learn, shape and solve problems. This, in turn, forces American history teachers to focus only on the technological development in the process of history education, while ignoring history education. In all historical development courses, teachers check students' historical knowledge related to the research content in advance, distribute or present historical materials related to the problem background, and guide students to read and analyze. Because these relevant historical backgrounds can help students understand the historical evolution process, and also lay the foundation for subsequent knowledge understanding.

3.2.2 Human-computer Interaction to Tap Students' Development Potential

One of the goals of historical data education is to make full use of the inherent potential of cloud computing to promote personal development, let students cultivate healthy personality in learning activities, and encourage students to think in different ways, so as to cultivate innovation and personal talent. The purpose of historical evolution teaching is to use new materials and new situations to further develop students' reading, thinking, expression, logical reasoning and creative understanding skills. The knowledge and skills acquired by students can be used to discover and absorb historical data. Develop appropriate skills to answer new questions through classification, cultivate applied skills, and develop abilities and intelligence. Teachers should continuously collect, study and systematize data, compare and interpret different types of evidence. It should constantly develop good conditions and methods to stimulate and develop students' abilities.

3.2.3 Selection Principle of Historical Data Resources

The historical materials that students are most interested in are not the most useful, and the most useful historical materials may not be acceptable to all students. Therefore, when selecting historical materials, it is important to reflect the most important elements while maintaining interest in materials. This is a higher requirement for history teachers. It is suggested that history teachers pay more attention to reading and collect interesting and useful information from the perspective of teaching. In addition, it should not bring false historical data to the classroom. The selected historical data should best reflect the nature of the problem, and the historical sites.

3.2.4 Courseware Combining Demonstration and Interaction

Such training materials combine the advantages of demonstration and interactive training materials to make up for their shortcomings. Teachers can design different media learning processes according to different textbooks to make teaching more effective and practical. These textbooks combine the advantages of demonstration and interaction, which is undoubtedly the future trend. It uses reasonable and optimized combination to let students truly master the secret of autonomous learning and become the master of learning. Although such teaching materials are always in the state of man-machine dialogue during the whole learning process, the use of demonstration in the whole process is very helpful to solve the intellectual difficulties in the classroom and stimulate students' interest in learning. In the process of participation, students can stimulate their thinking and become more active.

4. Experiment on American History Evolution Instructional Design

In order to study the specific application effect of human-computer interaction design in American history evolution teaching, this paper analyzed the diversity of resources and the enthusiasm of students in American history evolution teaching design to study the teaching quality, students' thinking ability and students' technical level in American history evolution teaching under cloud computing. Therefore, this paper surveyed the satisfaction of history students in three schools with the teaching of history evolution in the United States under cloud computing. Each school surveyed 50 people, and the specific survey was shown in Table 1.

Table 1: Satisfaction of history majors in three schools with the teaching of American historical evolution under cloud computing

	Satisfied	Commonly	Dissatisfied
School 1	44	4	2
School 2	37	8	5
School 3	40	6	4
Total	121	18	11

According to the data described in Table 1, students majoring in history in the three schools have a relatively high overall satisfaction with the teaching of American history evolution under cloud computing. There were 44 satisfied students in school 1, accounting for 88% of the total number of students surveyed in the school. There were 4 students in general, accounting for 8% of the total number of students surveyed in the school. There were 2 unsatisfied students, accounting for 4% of the total number of students surveyed in the school. There were 37 satisfied students in school 2, accounting for 74% of the total number of students surveyed in the school. There were 8 students in general, accounting for 16% of the total number of students surveyed in the school. There were 5 dissatisfied students, accounting for 10% of the total number of students surveyed in the school. There were 40 satisfied students in school 3, accounting for 80% of the total number of students surveyed in the school. There were 6 students in general, accounting for 12% of the total number of students surveyed in the school. There were 4 dissatisfied students, accounting for 8% of the total number of students surveyed in the school. On the whole, the satisfied students in the three schools accounted for about 80.7% of the total survey, and the average students accounted for about 12% of the total survey. Unsatisfied students accounted for about 7.3% of the total number of respondents. Satisfied students thought that the process of historical evolution under cloud computing was more visual, and it can also add first-hand materials of historical resources. Then it can also increase the authenticity of historical resources. Unsatisfied students thought that the history evolution teaching under cloud computing can not clearly reflect the evolution process, and it was not conducive to improving students' enthusiasm. Then this paper analyzed the diversity of resources and students' enthusiasm under the interactive design of American historical evolution under the new teaching mode and the traditional mode, and investigated the students in three history professional classes. Specific changes are shown in Figure 4.

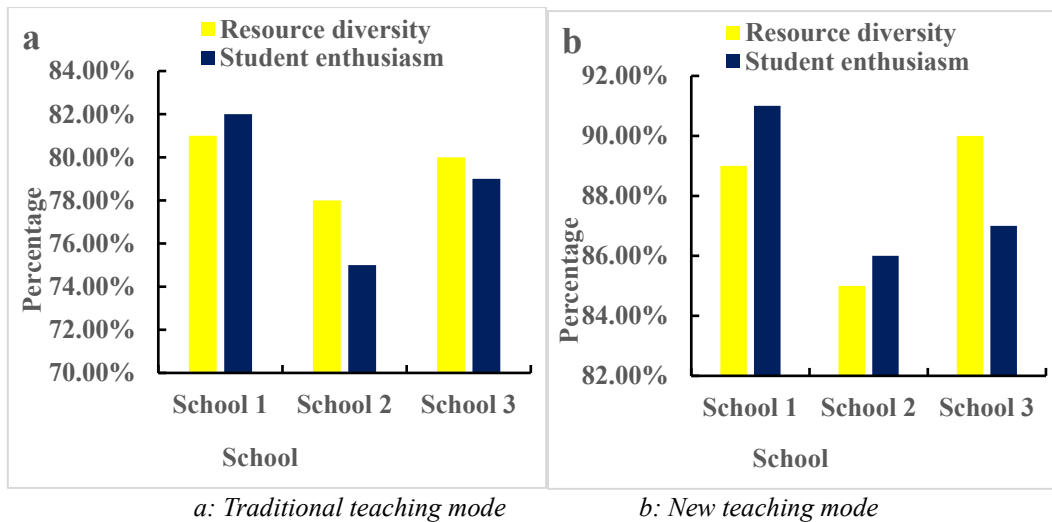


Figure 4: The diversity of resources and students' enthusiasm under the interactive design of American historical evolution between the new teaching mode and traditional mode

Figure 4a shows the traditional teaching mode and Figure 4b shows the new teaching mode, and the resource diversity and student enthusiasm of the new teaching mode are higher than the traditional teaching mode. According to Figure 4a, under the traditional teaching mode, the diversity of resources in School 1 was 81%, and the enthusiasm of students was 82%. School 2 had 78% diversity of resources and 75% enthusiasm of students. School 3 had 80% diversity of resources and 79% enthusiasm of students. According to Figure 5b, the diversity of resources in School 1 under the new teaching mode was 89%, and the enthusiasm of students was 91%. School 2 had 85% diversity of resources and 86% enthusiasm of students. School 3 had 90% diversity of resources and 87% enthusiasm of students. The average diversity of resources under the traditional teaching mode was 79.7%, and the average enthusiasm of students was 78.7%. The average diversity of resources under the new teaching mode was 88%, and the average enthusiasm of students was 88%. Through comparison, people can see that the diversity of resources under the new teaching mode has increased by 10.4% compared with the traditional teaching mode, and the enthusiasm of students has increased by 11.8% compared with the traditional teaching mode. It can be seen that the teaching of historical evolution under cloud computing can improve students' enthusiasm and let students have a new understanding of historical evolution. Then, this paper used the fuzzy clustering maximum tree algorithm to analyze and study the similar absolute value and range under the historical evolution teaching. This paper surveyed three classes, each of which had two modes of teaching, and the specific changes were shown in Figure 5.

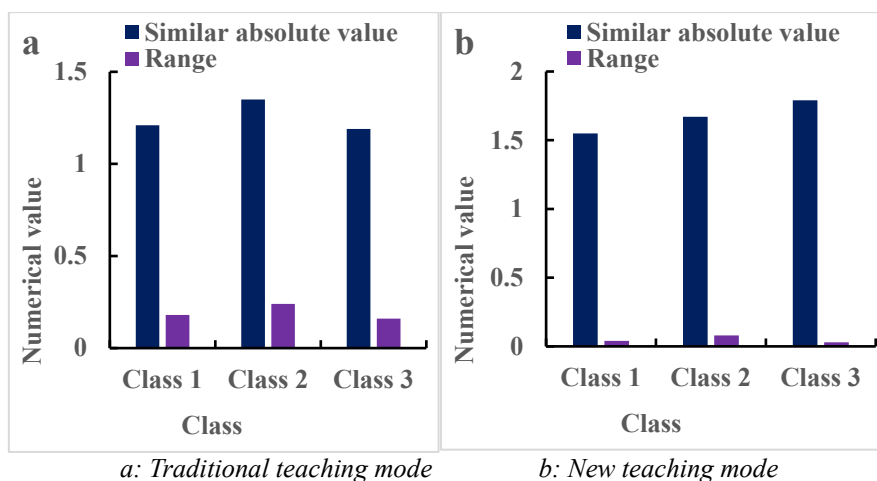


Figure 5: Changes of similar absolute values and range under the teaching of historical evolution

Figure 5a shows the traditional teaching mode, and Figure 5b shows the new teaching mode. It can be seen from Figure 5a that the absolute value of similarity of School 1 under the traditional teaching mode was 1.21, and the range was 0.18. The similar absolute value of school 2 was 1.35, and the range

was 0.24. The similar absolute value of school 3 was 1.19, and the range was 0.16. It can be seen from Figure 5b that the absolute value of similarity of school 1 under the new teaching mode was 1.55, and the range was 0.04. The similar absolute value of School 2 was 1.67, with a range of 0.08. The similar absolute value of school 3 was 1.79, with a range of 0.03. The mean value of similar absolute value under the traditional teaching mode was 1.25, and the mean value of range was 0.19. The mean value of the similar absolute value under the new teaching mode was 1.67, and the mean value of the range was 0.05. The comparison shows that the absolute value of similarity under the new teaching mode was 33.6% higher than the traditional teaching mode, and the extreme difference was 73.7% lower than the traditional teaching mode. Finally, this paper analyzed the teaching quality, students' thinking ability and students' skill level of history evolution teaching under cloud computing, and compared it with the traditional teaching mode, as shown in Figure 6.

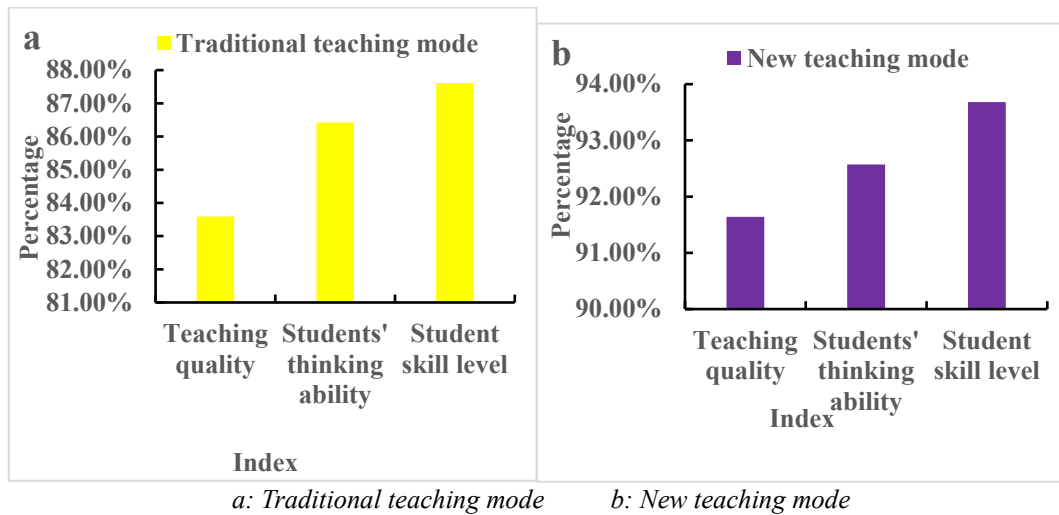


Figure 6: Changes in teaching quality, students' thinking ability and students' skill level of historical evolution teaching under cloud computing

Figure 6a shows the traditional teaching mode and Figure 6b shows the new teaching mode, and the teaching quality, thinking ability and skill level of the new teaching mode are higher than the traditional teaching mode. According to Figure 6a, the teaching quality of the traditional teaching mode was 83.59%, the students' thinking ability was 86.42%, and the students' skill level was 87.61%. According to Figure 6b, the teaching quality of the new teaching mode was 91.64%, the students' thinking ability was 92.57%, and the students' skill level was 93.68%. The comparison showed that the teaching quality of the new teaching mode was 9.6% higher than that of the traditional teaching mode. Compared with the traditional teaching mode, students' thinking ability has increased by 7.1%, and students' skill level has increased by 6.9%. Through comparison, the primary resources and the selection of resources for the teaching of American history evolution under cloud computing were more in line with students' preferences, and can improve students' thinking ability and technical level.

5. Conclusions

As an effective teaching method, the teaching of historical evolution has received more and more attention in the United States. The learning time of historical materials is longer than that of simple teaching, and the requirements for teachers are relatively high. Therefore, teachers must provide relevant historical materials and carefully formulate requirements for teachers. That is to say, in order to arrange courses reasonably and carry out learning activities of historical materials in different ways, American history courses can inspire students to understand and learn the interests of the United States and lay a foundation for more learning. In short, there are still many problems to be improved in the course of American history, and the learning content needs further adjustment. Basic knowledge should combine students' interests, constantly innovate learning models, and improve learning efficiency. At the same time, people should also prepare self-compiled textbooks to start further research on American history. Through further reform, students can really learn American history in class. In addition, American history education in the future should seize the opportunity of the new curriculum reform and always actively combine its own practice. It should vigorously develop the teaching of historical materials, so that the teaching of historical materials can better serve the history education, so

as to cultivate students' ability to analyze the original materials of history teaching.

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