Exploration of curriculum reform based on BOPPPS teaching model

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Received 16 Apr 2023; Accepted 24 May 2023; Published 31 May 2023

Abstract

The BOPPPS teaching model originated from the Canadian teaching workshop, with the goal of improving teachers' teaching abilities and skills, mainly used for centralized and intensive training of young teachers. In recent years, this teaching model has been cited by multiple countries around the world and has received widespread attention and recognition from the education and academic communities. The BOPPPS teaching mode is divided into six modules: B (Bridge in Introduction) O (Objectives Learning Objectives) P (Pre assessment Pre assessment) P (Participatory Learning Participatory Learning) P (Post assessment Post assessment) S (Summary). The English initial letters of each module are connected in teaching order, which is the BOPPPS teaching mode. By using the BOPPPS model to conduct practical testing of classroom teaching effectiveness, the aim is to improve the efficiency, effectiveness, and effectiveness of classroom teaching.

Keywords: BOPPPS, teaching model, learning objectives, participatory learning

1. Introduction

At present, the BOPPPS based teaching model has become an indispensable learning tool for learners. The emergence of the BOPPPS teaching model breaks the limitations of traditional models and provides the first condition for learners to explore more independent and effective learning modes [1]. With the vigorous development of micro classroom, online open courses and Flipped classroom, mixed teaching has gradually become one of the important directions of university teaching reform [2]. At present, the large-scale popularization and application of information technologies such as the Internet of Things, cloud computing, software and artificial intelligence have brought us into the era of information explosion big data [3]. The BOPPPS teaching mode can provide students with intelligent learning carriers and learning concepts, break the traditional learning methods, and make education and teaching innovative. Therefore, it is urgent to enable students to actively participate in classroom teaching, improve their learning interest and efficiency, and explore a new teaching mode of urban controlled detailed planning classroom teaching. In this situation, the BOPPPS teaching model that transforms traditional teaching concepts, focuses on students, and improves effective classroom teaching is highly concerned.

2. Material and methods

2.1 Bridge in

By watching simulated animation videos and combining with current students' love for online and electronic games, simulated small games can better stimulate students' interest [4]. Compared to listing knowledge points in traditional classrooms, the introduction of dynamic videos can better attract students' attention. The content of the video also needs to be selected, not just superficial knowledge, nor simply dull theoretical explanations. It needs to be more combined with new things and cutting-edge content in the subject, and displayed in a dynamic graphical way, which is more suitable for students' daily lives.

Dynamic video display, compared to traditional image display and PPT text listing of knowledge points, can more intuitively and effectively introduce course content. At the end of the video, questions are raised from the perspective of the control system, guiding students to extract information from the video, analyzing what is effective information related to their major, summarizing and summarizing the professional features, leaving room for students to think, attracting them to actively study and summarize, and entering a learning state independently.

2.2 Learning objectives

The introduction of learning objectives must be concise and clear. Educational psychology research shows that students' classroom attention can last up to 10-15 minutes. Therefore, the introduction of learning objectives can utilize the thinking space left in the introduction section, be problem oriented, and adopt a research-based teaching design that allows students to think, emphasizing the transition from existing knowledge to knowledge to be learned. At this point, teachers need to summarize and inspire students with professional terminology based on their thinking. In a relatively short period of time, complete the alternating leading role between teachers and students, switch from the teaching state of students' active thinking to the teacher's teaching leading role. The teacher distinguishes the key and difficult points of the course for students based on the course content, and refines the course knowledge according to different levels such as memory, understanding, application, and analysis, so that students can more systematically distinguish between general knowledge points and key and difficult points, thereby mastering their own learning progress.

2.3 Pre assessment

The purpose of the pre-test is to understand students' professional abilities, knowledge points, interests, and personal insights into the course content before the course begins [5]. The pre-test section can be combined with the introduction section before the course starts, or it can be conducted after clearly pointing to the learning objectives. After introducing the learning objectives, this course is beneficial for students to review and review existing knowledge, stimulate their thirst for knowledge, cultivate their divergent thinking and abilities, and inspire the theoretical content to be discussed in the next step.

2.4 Participatory learning

Participatory learning is a key aspect of the BOPPPS model, which fundamentally transforms teacher centeredness into student centeredness. Focusing on students' real-time participation in classroom teaching, they no longer passively receive knowledge unilaterally, but actively participate in the learning process, exerting their dominant position in the classroom, and achieving diversified teaching goals such as teacher-student interaction, student-student interaction, and team cooperation.

This course adopts the following measures: group discussion, role-playing, classroom practice, etc. Divide students into simple groups, ranging from 5 to 10 people, and have them choose the most suitable solution through group discussions, written notes, and other methods based on the pre-test session. Afterwards, students in the same group will play different roles and demonstrate, reason, and discuss different control elements and content in the course content. Through the above methods, students are encouraged to learn and use the course content, speak within the team, stimulate students to actively acquire knowledge, and actively think about the course content during the practice process. At the same time, it also cultivates students' language expression ability and enables them to use professional terminology in a standardized manner during the explanation process. In addition, teachers need to guide and maintain classroom order to ensure the effectiveness of student participation and minimize inefficient displays. Teachers can also guide students' thinking direction and exercise their problem-solving ability by asking different questions during the participating process.

2.5 Post assessment

The post-test stage is an indispensable part of the BOPPPS mode, usually used as an important content to test the teaching effectiveness of this lesson before the end of the course. The post-test section of this course is combined with the pre-test section. By comparing it with the pre-test plan, the post-test section can provide real-time feedback on students' mastery of the knowledge learned and their proficiency in applying the course content. It can help teachers verify whether the course design is reasonable, whether the teaching progress meets the requirements of the teaching plan, and whether the course objectives can be achieved; Finally, teachers should adjust or supplement teaching content in a timely manner based on the students' post test results, while verifying their learning effectiveness. In response to the weak links in students' mastery of knowledge, teachers should improve and improve the classroom teaching design content.

2.6 Summary

The summary section mainly summarizes the content taught in this class, as well as the extended outlook of extracurricular knowledge points. There are various ways to summarize. In this course, the teacher guides students to review, assigns homework for students, predicts the teaching content for the next class, and requires students to draw a mind map for this course, which can be completed independently or in collaboration within the group. The purpose is to guide students to program the course content, integrate key knowledge points, and enhance their memory and understanding of this course.

3. Results

The education big data analysis and mining technology model applies the integration method of big data processing, data exchange and big data analysis and mining to the design process of the intelligent teaching platform. The model is shown in Figure 1.

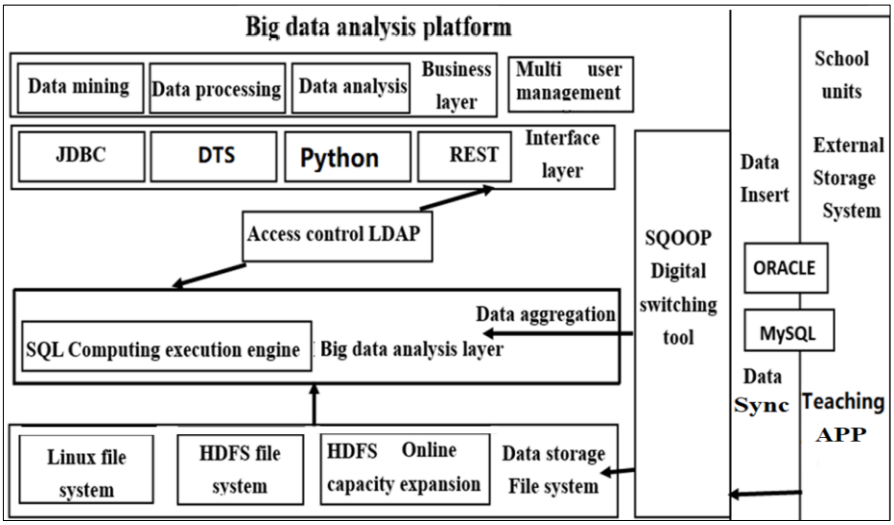

Fig 1: Model Diagram of Education Big Data Analysis and Mining Technology

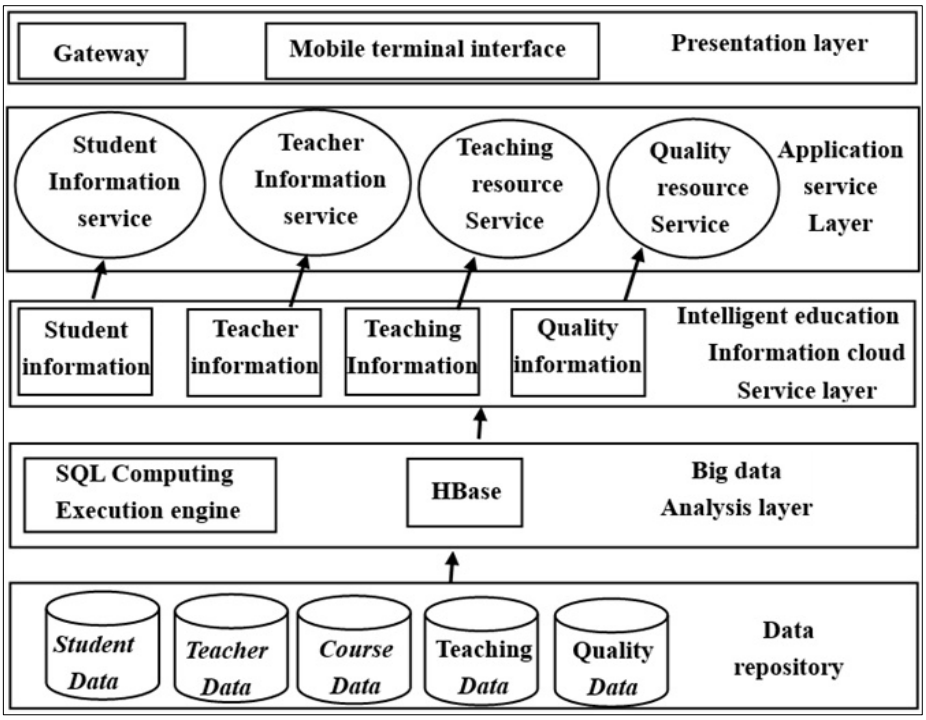

Fig 2: Platform and overall architecture of big data analysis technology

As shown in Figure 2, the overall architecture of the platform is divided into five parts: educational data repository, big data analysis layer, intelligent education information cloud service layer, educational application service layer and demonstration layer.

According to the above problems, the improved item similarity calculation method mainly includes three aspects: the traditional user-item rating matrix, the classification of items, and the release time of items. Figure 3 shows the processing flow of the improved item-based collaborative filtering recommendation algorithm.

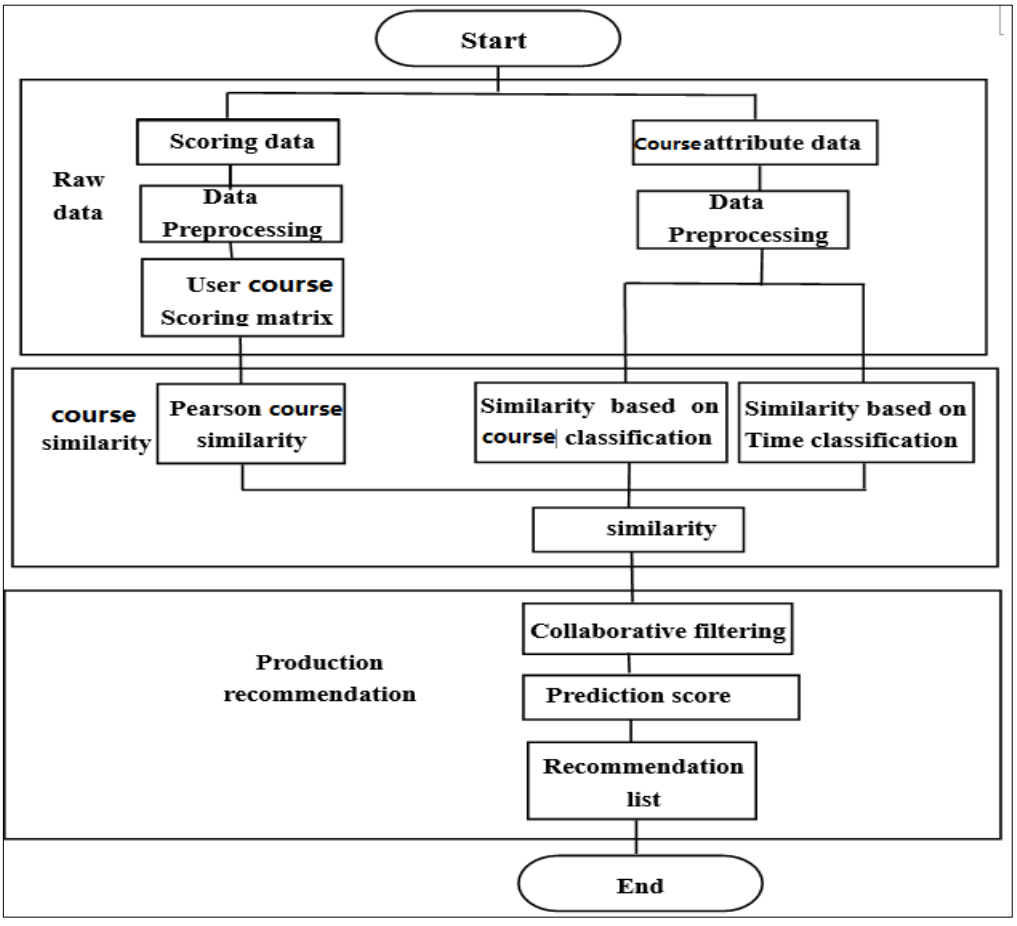

Fig 3: Flow chart of an improved collaborative filtering algorithm based on item recommendation.

4. Conclusion

The BOPPPS teaching model divides the traditional classroom teaching system into six major parts, advocating for student-centered participatory teaching in classroom teaching, emphasizing interaction and reflection between teachers and students. The above practice has proven that through the use of the BOPPPS teaching mode, students' interest in the course has significantly increased, their mastery of course knowledge and application effects have significantly enhanced, and teachers have also avoided the classroom fatigue and boredom brought about by traditional teaching. At the same time, students' participatory learning enhances their confidence and sense of achievement, not only improving the learning effectiveness of this course, but also significantly improving related courses. In the practice of different classrooms, it has also been found that the BOPPPS teaching model cannot be completely mechanically applied in each class. Teachers should make appropriate adjustments to the six major parts of the BOPPPS teaching model based on the actual needs in the classroom, and make improvements tailored to students' learning progress and psychological needs. As a teacher of this course, it is understandable to introduce a new teaching model for curriculum reform, but more importantly, it is necessary to use the BOPPPS teaching model flexibly for this course, carefully design each class, stimulate students' learning interest, motivation, and focus, and achieve the diversified teaching objectives of curriculum reform.

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