Research on Information Resource Construction of Aerobics Courses in Universities under the Background of Educational Big Data

Li Liu1,*

1Lijiang Teachers College, Lijiang City, Yunnan Province, 674199, China.

*Corresponding author e-mail: liulimeinv117@163.com

Abstract. Aerobics course among universities is one of the most popular physical education curriculums. Under the circumstance of the swift progress of educational big data, the building of network informationalization resource in the course of aerobics teaching in universities is still scarce, which currently couldn’t satisfy the demands of students’ learning. This paper proposed how big data could be employed to construct the web informationalization resources of aerobics, which provided theoretical reference for further optimizing the curriculum reform of aerobics in universities, making classroom teaching more modern, adapting it to the times, and promoting the enthusiasms and initiatives of contemporary universities students’ learning.

Keywords: Educational big data, Aerobics course, Information resource construction

1. Introduction

Big data was first coined by Viktor Mayer-Schonberger and Kenneth Cukier in the book “Big Data Age” in 2008. With the arrival of the era of intelligent cloud, various industries have gradually realized that whoever can take the lead in quoting big data can seize the first opportunity in the future, so does the educational industry. In the educational field, educational big data has progressively attracted the attention of most educators [1]. Educational big data can be defined as the data set generated throughout the educational progression and collected on the basis of educational requirements, all being utilized for educational improvement and creating great potential value. The usage of big data in education to specific teaching is a way for teachers to employ modern teaching means to complete teaching. For example, the flipped classroom, MOOC and micro-class the teachers carried out are new forms of big data reform education. The reform in educational field is defined as the information-based teaching under the reform of big data. In the context of educational big data, the
building of information resource of aerobics teaching in universities is a kind of speculation and innovation conforming to the trend of educational times, which has great value and significance for the major of physical education to change the concept of talent training, elevate the teaching mode, and boost the teaching quality and effect.

2. The present condition of aerobics teaching in universities

Aerobics is a skill course in physical education. At present, universities are constantly carrying out teaching reform, especially theoretical courses implementing flipped curriculum reform and using micro-class, MOOC or other resources of the network platform to conduct curriculum reform. However most of the skill courses of physical education, including aerobics courses, still adopt the traditional teaching concepts, teaching content and teaching mode, it is obvious that these modes are not compatible with talents’ training and social development, so it is required to continue to effectuate embedded teaching reform to meet the needs of social development.

2.1. Traditional teaching models

During aerobics teaching in universities, teachers usually adopt the offline face-to-face teaching mode. Students' learning contents are taught and demonstrated face-to-face by teachers. The teaching content is generally conducted according to a fixed pattern of the prescribed content, and most of the contents are taught with emphasis only on skills rather than theory. Many students knew little about the theoretical knowledge of aerobics after the courses being completed. And the classroom teaching is often restricted by the adoption of teachers' explanation and demonstration and other traditional teaching methods, coupled with time and space constraints, it is hard for students to master technical movement in a short period of time. Furthermore, teachers cannot carry out technical guidance and monitoring management after class. Therefore it is an important mission for the aerobics teaching in universities to optimize the teaching models [2].

2.2. One-fold teaching method and means

The traditional aerobics teaching generally uses the explanation model, the integrity and decomposition approach, the prompt approach, the discovery teaching approach, the connection method, the progressive teaching method and so on, with the teaching method mainly focusing on watching online videos of the teaching competition. While during the highly developed information technology, the use of computer, mobile phone, multimedia and other modern teaching tools for teaching can not merely enhance the content of classroom teaching, as well as effectively utilize the students' spare time to consolidate what has been learned, enhance students' ability to study independently. The information technology teaching transformed the teacher-oriented classroom into the student-oriented classroom to optimize the classroom teaching and students' learning effect [3].

2.3. Boring teaching process

The traditional aerobics teaching is the preparation part, the basic part, and the end part instructed by teachers based on each lessons’ teaching plan. Students are poor in active learning, and they follow the teachers to practice in a limited time. What the students have received is the teacher's fixed teaching model, which to some degree restricts the progress of students' behavior and imagination ability. However, if the modern teaching resources, such as micro-class, MOOC and other big data platforms, could be properly used in the teaching process, students' subjective initiative can be fully mobilized, their interest in learning can be improved, their main position can be brought into play, and teachers' omissions in the teaching process can be well compensated, which is advantageous for the
simultaneous progress of teachers and students.

2.4. Single teaching evaluation
The evaluation of the traditional method of aerobics teaching is relatively single, generally quantifying students’ usual and final performance. The usual performance results contains mainly attendance, answers and questions, classroom learning attitude, etc., and the final assessment is mainly the comprehensive grading of students’ combination exercises learned in ordinary classes. It is difficult to objectively evaluate every student's academic achievement just based on the single assessment system. While after establishing the information resource bank of aerobics, teachers can implement the on-line and off-line comprehensive teaching to change the one-fold teaching evaluation from teacher-student to the mutual assessment of student-student, change from the previous one teacher evaluation to several teachers’ comprehensive assessment, change from evaluating students to students’ participation of discussing and reflecting, which can not only fairly and objectively evaluate students' learning situation, but also provide a good platform to promote the mutual learning between teachers and students, and simultaneously can effectively elevate the emotive exchanges between teachers and students [4].

2.5. Poor professional quality of teachers
The professional skill quality of aerobics teachers in traditional aerobics teaching is one of the most direct elements influencing the progress of students' quality. Although the face-to-face offline teaching method is conducive to classroom organization and exchanges between teachers and students, the development of students will also be restricted by teachers' professional quality ability. If the teachers' professionalism is unsatisfactory, the skills displayed by teachers will be lack of standardization and accuracy, which will directly affect the teaching effect. Therefore, it is essential to build the information resource bank of aerobics courses, provide teachers and students with online materials for learning, help teachers and students better grasp the main emphasis on motions and upgrade the quality of teaching according to the characteristics of aerobics by employing the network big data platform,

3. Construction strategy of aerobics teaching information resource in universities
The information resource construction of aerobics teaching can be defined as the employment of educational big data information network resources to provide information and resource sharing platform for aerobics teaching, and to promote the teaching quality and learning between professors and students. In the reform of aerobics course, the construction of network resources is relatively scarce, which cannot satisfy the demands of students' studying. Therefore, it is obligatory for the vast number of aerobics teachers and related staff to carry out continuous in-depth excavation, continuous theoretical research and practical exploration.

3.1. Organizing teachers to conduct technical training on information resource construction
With the swift progress of information technology, teachers of various disciplines must keep up with the pace of the times, so do the university teachers. Nowadays all kinds of flipping classroom, micro-class, MOOC and gold lessons have become the trend of teaching reform. However, many teachers know little about this, therefore, organizing a large number of teachers to participate technical training on the construction of subject information resources has become the top priority for promoting subject teaching reform and improving teaching quality.
3.2. Establishing the information resource exchange platform

First of all, the universities’ educational administration system should be equipped with a set of ideal network curriculum center website for teachers of various disciplines to upload and share online courses. The main designers of network courses are teachers who should have the basic skills of relevant network design and development. Secondly, universities can draw on the excellent videos of aerobics teaching and online videos of other universities, such as wisdom tree, school online, Icourse and other online curriculum platforms, and collect data for aerobics information resources construction.

3.3. Contents of Aerobics Information Resources (AIR) Construction

The contents of AIR construction mainly include the design of teaching guidance of network course, teaching goal, teaching content, the design of teaching activity and so on. The detailed contents mainly include the course syllabus, aerobics electronic teaching plan, theoretical teaching video, skill teaching videos, the videos of decomposing difficult movements, competition related videos, audios, pictures, courseware, faculty building situation, scientific research and so on. The contents of the building of AIR should be rich and colorful, dynamic and interesting, fashionable and novel, the homework design should be closely related to the students’ interest, and the evaluation system should be consistent with the students' psychological progress to promote teachers’ and students’ simultaneous progress, and to enhance the teaching quality [5].

![Figure 1. Aircraft construction](image)

3.4. Constructing the management system of AIR bank

The building of AIR bank can be divided into three modules: resource management mode, system management mode and user management mode. Its sub-modules can be further divided into resource upload, resource preview, resource download, resource audit, resource query, resource deletion and so on [6]. The resource management mode is principally to warrant the safety and trustworthiness of the uploaded contents, the system management mode is primarily for the educational administration system managers to guarantee the solidity and trustworthiness of the system use and to update in time, and the user module system mainly gives the power of authorization to use for different users.
In the big data times, all universities are constantly integrating educational information resources. Universities should actively play the role of school-school union, learn and draw on the curriculum center construction model of other colleges and universities, exert completely the role of computer network platform to assist the physical education reform in universities, increase teachers’ training frequency, make more teachers master and employ information teaching means, create flexible and diverse classroom teaching for students, and upgrade students' eagerness for learning. In addition, Universities should increase investment in hardware facilities, and offer multi-functional modern venues for the teaching of physical education skills courses, such as multi-functional dance classrooms, classroom equipped with rain classes, micro-lesson recording and broadcasting and so on, therefore the content of information resources can be reasonably applied to teaching.

4. Conclusion

For a long time in the future, educational big data will certainly affect the reform and progress of the education industry. It is bound to be an urgent task for colleges and universities to enrich the contents of information resources construction of various disciplines. There’s no exception for physical education. During the instructing of aerobics, teachers must implement the integration and development of network resources, use a variety of information teaching measures to fulfil curriculum reform and teaching, provide students with plentiful and colorful information resources content, entirely mobilize students' learning interest and participation initiative, and constantly increase the classroom effect, in order to promote the continuous development of aerobics courses.

References

[1] Zhang Wenhua. Impact of big data on physical education. Journal of Guiyang University (Natural Science Edition), 2014(2):47-51.

[2] Mu Dan. A study on the informationization construction of aerobics course in social sports specialty in colleges and universities. Journal of Huaibei Normal University (Natural Science Edition), 2019:92-96.

[3] Wang Liping. Construction of aerobics network course. School Physical Education, 2015:111-112.
[4] Tan Bi. Application of informatization teaching method in aerobics teaching in higher vocational education. School Physical Education, 2015:155-156.

[5] Zhao Hong & Zhang Xuan. The construction and application of aerobics network course in universities under the MOOC Age. School Physical Education, 2015:125-128.

[6] Xu Jie. A study on the construction strategies of aerobics information resources in universities under network environment. Journal of Ningbo Institute of Engineering, 2011:114-116.