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Research and Application of Artificial Intelligence Technology in the Teaching of Ice and Snow Sports Mixed Courses in Universities

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Abstract: This article introduces the research and application of artificial intelligence technology in the teaching of blended ice and snow sports courses in universities. Firstly, starting from the current situation and existing problems of ice and snow sports teaching, the article elaborates on the advantages and application prospects of artificial intelligence technology. Secondly, the application of artificial intelligence technology in the teaching of blended ice and snow sports courses was analyzed, and application strategies and methods were proposed. Finally, the significance and value of the research and application of artificial intelligence technology in the teaching of blended ice and snow sports courses in universities were summarized, and prospects for future research directions were made.

1. Introduction

Ice and snow sports are traditional sports with the characteristics of luxury, elegance, comfort, and excitement. In recent years, with the development of social economy and the improvement of people's living standards, ice and snow sports have gradually become an important component of people's lives. However, due to the special nature of ice and snow sports and the inability of traditional teaching methods to meet the needs of students, there are many problems in ice and snow sports education in universities. In order to solve these problems, artificial intelligence technology is gradually being applied to the teaching of blended ice and snow sports courses in universities. This article mainly explores the research and application of artificial intelligence technology in this field, and puts forward relevant suggestions.

2. The current situation of ice and snow sports mixed curriculum teaching

2.1. Insufficient practical courses

The current situation of blended teaching of ice and snow sports in universities reflects to some extent the development status of China's ice and snow sports industry. Despite the increasing support of the Chinese government for ice and snow sports, due to various reasons, this sport has not been widely popularized throughout society.[1] The lack of practical courses is one of the main factors restricting the teaching of blended ice and snow sports courses in universities. Compared to traditional

sports, ice and snow sports require more demanding venues, equipment, and climatic conditions. The investment of schools in providing practical courses is difficult to meet the needs of students, leading to difficulties in obtaining sufficient exercise and training opportunities in ice and snow blended courses. For many students, they do not even have the opportunity to be exposed to the true meaning of ice and snow sports during their school years.[2]

2.2. Lack of teaching resources

There are various problems and challenges in the current teaching of blended ice and snow sports courses in universities. One important factor is the scarcity of teaching resources. Compared to some traditional sports, ice and snow sports have not received sufficient attention in many universities. Therefore, many schools lack professional teachers and sufficient teaching resources, and face difficulties in carrying out blended ice and snow sports curriculum teaching. Due to the significant investment in teaching resources required for ice and snow sports, including ice and snow equipment, equipment, venues, and other necessary teaching resources, all of which require significant cost investment.[3] Many universities do not receive sufficient support, making it difficult to provide sufficient teaching resources, which poses a significant constraint on the teaching of blended ice and snow sports courses. Even if some universities have corresponding teaching resources, due to their high cost and limited lifespan, regular maintenance and updates also require a large amount of capital and manpower investment, which will also bring great challenges to the guarantee and maintenance of resources.

2.3. Unreasonable course setup

At present, many universities have a relatively single blended curriculum for ice and snow sports, which only includes basic teaching and simple skill exercises, ignoring the various fields and complexities of ice and snow sports. This leads to students being unable to truly master relevant skills and knowledge. In this situation, students may only be able to learn some basic skills and knowledge, but cannot truly understand the full picture of ice and snow sports and the cultural and historical aspects behind it.[4] For example, some college courses only involve skiing and ice hockey and other common projects, while other interesting fields, such as short track speed skating, figure skating, snowmobile, sledge, etc., are not reflected. This limits students' understanding and understanding of the diversity of ice and snow sports. In addition, the singularity of the curriculum can also affect students' interest and enthusiasm for ice and snow sports, as they can only learn limited content, and prolonged monotonous mechanical training may make them feel bored and bored. This will also affect students' enthusiasm and enthusiasm for learning the blended ice and snow sports curriculum.

2.4. Single teaching mode

In many universities, the traditional face-to-face teaching mode is still used for the blended ice and snow sports curriculum teaching. This model can ensure teaching effectiveness, but it also poses many inconveniences and challenges for teachers and students. Firstly, the traditional face-to-face teaching mode requires specific venues and equipment to proceed, which is a major challenge for universities. Because many universities do not have dedicated ice and snow sports venues on their campuses, they can only rent venues outside or use them in conjunction with other units, which undoubtedly increases the teaching costs of universities and may also have a certain impact on the quality of teaching. Secondly, there are some practical issues with the traditional face-to-face teaching model. For example, students need to operate according to the teacher's requirements, but due to the complexity of the teaching environment, students may not be able to truly master skills and

knowledge, resulting in waste and losses.[5] At the same time, it is also difficult for teachers to provide full guidance and supervision, which may reduce teaching effectiveness and affect students' learning outcomes. In addition, universities should also consider individual differences and actual needs of students in their curriculum design. Different students have different interests, characteristics, and advantages, which means that they also need to have differentiated teaching content and methods when learning ice and snow sports blended courses.

3. The significance of artificial intelligence technology in the teaching of blended ice and snow sports courses in universities

3.1. Improving teaching effectiveness

Artificial intelligence technology plays an important role in the teaching of blended ice and snow sports courses in universities. Among them, improving teaching effectiveness is an important application direction of artificial intelligence technology. By applying artificial intelligence technology, ice and snow sports skills and knowledge can be more intuitively and effectively transmitted, so as to help students quickly grasp the basic and core points, and achieve better teaching results. For example, in the teaching of short track speed skating at Beijing University of Physical Education, teachers used the combination of virtual reality technology and artificial intelligence technology to provide students with a more realistic and intuitive ice experience. Through practice and training in the simulation environment, students can more deeply understand and experience the technical points and movement rules of short track speed skating to improve their skill level and competitive ability.

3.2. Expanding teaching methods

The application of artificial intelligence technology in the teaching of blended ice and snow sports courses in universities can also expand teaching methods, enrich teaching methods, and improve teaching flexibility. By utilizing artificial intelligence technology, traditional teaching methods can be extended to various teaching scenarios such as online and offline. For example, in the snow project course of Peking University, teachers used the learning management system based on artificial intelligence technology to provide students with a more flexible and autonomous learning environment. Through online learning platforms, students can learn and practice anytime, anywhere, and also develop personalized learning plans based on their own learning progress and characteristics. This learning method based on artificial intelligence technology can not only improve students' learning efficiency and quality, but also expand teaching methods, making teaching more flexible and diverse.

3.3. Accelerating the teaching process

With the help of artificial intelligence technology, students' performance can be monitored and feedback in real-time, helping teachers quickly identify students' problems, adjust teaching plans and methods accordingly, and make the teaching process more efficient. For example, in the winter sports series courses of Tsinghua University, teachers used the learning management system based on artificial intelligence technology to provide teachers with more detailed and accurate feedback information on student performance through the analysis and evaluation of students' learning behavior and data. This teaching method based on artificial intelligence technology not only allows teachers to quickly understand students' learning status and achievements, but also allows for quick feedback and adjustment of teaching plans and methods, making the teaching process smoother and more efficient.

4. The application of artificial intelligence technology in the teaching of mixed courses of ice and snow sports in universities

4.1. Overall planning

Introducing artificial intelligence technology into the teaching of blended ice and snow sports courses in universities is a crucial step in overall planning. In the overall planning stage, multiple factors need to be comprehensively considered. Firstly, it is necessary to establish specific teaching objectives, teaching methods, and teaching content. The teaching objectives should be clear and specific, such as improving students' skill levels and enhancing their interest in learning. The teaching methods and content should be closely integrated with the objectives, and fully consider the characteristics and needs of students. Secondly, determining the teaching scenario and teaching methods is also very important. Teaching scenarios can take various forms such as physical classrooms, virtual scenes, or mixed teaching scenarios, and should be selected based on the teaching objectives and content. The teaching methods include classroom teaching, online teaching, personalized teaching, etc., and should be selected based on students' needs and wishes. For example, in the major of ice and snow sports science at Nanchang University, a teaching method of virtual scenes and mixed teaching scenes was adopted, utilizing virtual reality technology and artificial intelligence technology to help students better grasp the teaching content and improve their sports skills.

4.2. Reasonable selection

With the continuous development of artificial intelligence technology, more and more universities are attempting to apply it to the teaching of blended ice and snow sports courses. When choosing artificial intelligence technology, it is necessary to make a reasonable selection based on one's own teaching needs and subject characteristics. For example, in the teaching of blended ice and snow sports courses, machine learning and deep learning techniques can be used to analyze and evaluate students' movements and postures, helping them improve their motor skills and levels. At the same time, natural language processing technology can also be used for speech recognition and emotion analysis to help students better grasp the teaching content and improve the learning effect. For example, in some universities of the North Star Sports Group, artificial intelligence technologies such as intelligent electronic coaches and virtual training fields have been applied to provide personalized action evaluation and real-time feedback to students.

4.3. Project practice

In the teaching of blended ice and snow sports courses in universities, project practice is a crucial part. Artificial intelligence technology can be combined with specific ice and snow sports projects for practical teaching practice. For example, in the artificial intelligence technology teaching of Beihang Sports Department, virtual training fields and intelligent electronic coaches are used, combined with specific ice and snow sports projects such as skiing and skating, to help students better master sports skills and theoretical knowledge, and increase their learning interest. This practical teaching practice not only enables students to better learn and master relevant knowledge and skills, but also helps students to have a deeper understanding and application of artificial intelligence technology. In the process of practice, it is necessary to attach importance to students' feedback and opinions. By listening to students' feedback and opinions, problems and deficiencies in actual teaching can be identified in a timely manner, and feedback can be provided to the technical team in a timely manner. The technical team can continuously improve and enhance the quality and

effectiveness of the artificial intelligence technology platform based on student feedback and opinions to better serve teaching practice.

4.4. Teacher training

Teacher training is an important prerequisite for applying artificial intelligence technology in the teaching of blended ice and snow sports courses in universities. By providing relevant technical training to teachers, they can gain a deeper understanding of the specific application scenarios, advantages, limitations, and basic operations of artificial intelligence technology in course teaching, in order to help them better grasp relevant teaching knowledge and skills and improve their teaching level and ability.

4.5. Data analysis

In the teaching of blended ice and snow sports courses in universities, data analysis is another important aspect of applying artificial intelligence technology. Artificial intelligence technology can help teachers analyze and mine a large amount of data generated during the teaching process, in order to better understand students' learning status and needs, and make corresponding adjustments and optimizations to teaching plans and methods. For example, in the ice hockey course at Tsinghua University, teachers use artificial intelligence technology for data analysis. By analyzing students' learning behavior, movement patterns, and training effects, they can better understand their learning status and progress, and develop specific teaching plans and methods for different students. At the same time, personalized learning services can also be provided for students by combining data with teaching content. Through data analysis, teachers can obtain more comprehensive and accurate feedback information, so as to better grasp students' learning dynamics and changing trends, and formulate more suitable teaching plans and methods for students. While promoting students' learning, it can also improve teaching efficiency and quality, thereby achieving better teaching outcomes.

5. Conclusion

This article explores the research and application of artificial intelligence technology in the teaching of blended ice and snow sports courses in universities, elaborates on the advantages and application prospects of artificial intelligence technology in ice and snow sports teaching, analyzes the application of artificial intelligence technology in this field, and proposes corresponding strategies and methods. Through the research in this article, we can see that artificial intelligence technology has very important significance and value in the teaching of blended ice and snow sports courses in universities. In the future, we can further conduct in-depth research, improve the application of artificial intelligence in this field, and strengthen the combination of artificial intelligence technology and teaching practice.

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