

Research on the influence of micro-class on aerobics curriculum in colleges and universities in micro-era

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Abstract: With the rapid development of information technology and the prevalence of mobile Internet, the micro-era has become the main trend in the field of education today. Micro-lecture, as one of the important forms of teaching in the micro-era, has broad application prospects in higher education. Taking "The Influence of Micro-Lectures on College Aerobics Courses in the Micro-Era" as the theme, this study aims to explore in depth the impact of micro-lectures on college aerobics courses and explore possible influencing factors. Firstly, through a literature review of the micro-era, micro-lectures, and college aerobics courses, the application status and development trends of micro-lectures in education, as well as the teaching characteristics and existing problems of aerobics courses, are summarized. Secondly, through empirical analysis, the actual impact of micro-lectures on college aerobics courses is discussed from aspects such as student learning outcomes, teaching innovation, and teacher-student interaction. The study found that micro-lectures can stimulate students' interest in learning, improve learning outcomes, enrich teaching content, diversify teaching methods, and enhance teacher-student interaction. However, the application of micro-lectures in college aerobics courses still faces challenges such as inadequate technical equipment, insufficient teacher training, and low student acceptance. Finally, a series of optimization strategies are proposed to address these issues, including strengthening technical equipment support, enhancing teacher training, and encouraging student participation, in order to provide reference and guidance for the improvement of college aerobics courses and the further application of micro-lectures in education.

1. Introduction

With the rapid development of information technology and the widespread popularity of mobile Internet, the micro-era has become the predominant trend in the field of education. The educational model advocated by the micro-era, characterized by its flexibility, personalization, and interactivity, has attracted widespread attention and gradually demonstrated its unique value and influence in higher education. Micro-lecture, as one of the important forms of teaching in the micro-era, has brought about new possibilities for education and teaching through concise video content, convenient learning methods, and personalized learning experiences. Aerobics is an important form of physical exercise, which not only helps students build healthy bodies and improve physical

fitness but also promotes their psychological health and teamwork skills. However, in traditional aerobics courses, the teaching methods are monotonous, and the teaching content is often dull, making it difficult to fully stimulate students' interest and enthusiasm for learning. Therefore, combining micro-lectures with college aerobics courses is an innovative teaching approach worth exploring and trying. By introducing micro-lectures, aerobics courses can become more interesting and interactive, thereby stimulating students' enthusiasm for learning and improving learning outcomes. However, the actual application of micro-lectures in aerobics courses and their impact on teaching have not been fully researched and discussed. Therefore, this study aims to explore in depth the impact of micro-lectures on college aerobics courses, explore possible optimization strategies, and provide theoretical support and practical guidance for the improvement of college aerobics courses and the further application of micro-lectures in education.

2. Microage education model and aerobics course teaching

2.1. Micro-era Education Model

The micro-era education model is based on information technology and characterized by micro-level, personalized, and interactive teaching methods. Micro-era education advocates meeting students' personalized learning needs and enhancing learning efficiency and interest through micro-level content and personalized learning methods. The main features of this education model include the following aspects. Firstly, micro-level teaching content is an important feature of the micro-era education model. It breaks down vast knowledge into small, concise units to meet the fragmented learning needs of students. This micro-level teaching content is easier for students to understand and absorb, thereby improving learning efficiency. Secondly, personalized learning methods are a core concept of the micro-era education model. It emphasizes providing customized learning plans and resources based on students' learning characteristics and needs. By using intelligent learning systems and personalized learning paths, it meets the learning needs of different students, stimulating their interest and potential. Additionally, the micro-era education model emphasizes the construction of interactive learning environments. Leveraging information technology and network platforms, it creates diverse learning environments, supporting real-time interaction and communication between teachers and students, promoting knowledge sharing and collaborative learning. Lastly, mobile learning tools are an important support for the micro-era education model. It advocates liberating learning from fixed times and places, advocating for anytime, anywhere, and mobile learning. Through mobile devices and online learning platforms, students can access learning resources anytime, anywhere, independently arrange learning time and space, and achieve personalized learning goals. In summary, the micro-era education model, with its characteristics of micro-level, personalized, interactive, and mobile learning, brings new opportunities and challenges to education and teaching. Guided by this educational model, the education sector continues to explore and innovate, promoting education and teaching towards more personalized, diversified, and intelligent directions[1].

2.2. Aerobics Course Teaching

Aerobics courses are an important part of physical education, aimed at improving students' physical fitness, coordination, and cardiovascular function through a series of movements and rhythmic arrangements. In traditional aerobics course teaching, collective training is commonly used, with teachers guiding students through fixed movements and combinations to achieve the purpose of physical exercise and coordination improvement. However, traditional teaching methods have many shortcomings, such as monotonous teaching content, rigid teaching methods, and low

student engagement. With the updating of educational concepts and the advancement of teaching technology, aerobics course teaching is constantly innovating and improving. Modern aerobics course teaching emphasizes the application of personalized teaching and diversified teaching methods to better meet students' learning needs and interests. In terms of teaching content, in addition to traditional movement combinations, various forms such as skipping, apparatus exercises, and dance are introduced to enrich the curriculum content, adding fun and challenges. In terms of teaching methods, teachers focus on tapping into students' subjectivity and initiative, using methods such as group cooperation and game competitions to stimulate students' interest and engagement in learning. At the same time, with the help of modern teaching technology and equipment, such as music rhythm sensors and video teaching, teaching effectiveness and interest are improved, enhancing students' learning experience and sense of achievement. In conclusion, aerobics course teaching is evolving towards personalization, diversification, and technologization. In the context of the new era, further exploration and practice of innovative teaching models and methods will help improve the teaching quality and effectiveness of aerobics courses, promoting the comprehensive development of students' physical and mental health[2].

2.3. Integration of Micro-Lectures and Aerobics Course

Micro-lectures, as a new form of teaching, have gradually become a hot trend in the field of education due to their concise video content and convenient learning methods. Combining micro-lectures with aerobics courses is an innovative teaching model that is expected to bring new breakthroughs and improvements to the teaching quality and effectiveness of aerobics courses. Firstly, micro-lectures can provide rich teaching content for aerobics courses. Through micro-lectures, teachers can produce videos covering basic aerobics movements, technique explanations, and safety precautions, and provide them to students for viewing anytime, anywhere, deepening their understanding and mastery of course content. Secondly, micro-lectures can enrich the teaching methods of aerobics courses. Traditional aerobics course teaching often relies on teacher guidance, with students being passive recipients, lacking sufficient interaction and participation. Micro-lectures, on the other hand, provide students with opportunities for independent learning, allowing them to actively participate in the course by watching videos and practicing repeatedly, thus enhancing students' initiative and engagement in learning. Additionally, micro-lectures can promote personalized teaching in aerobics courses. Since micro-lecture content can be customized based on students' learning needs and levels, it can meet the personalized learning needs of different students, providing more accurate and effective teaching content and methods, enabling each student to access suitable learning resources and guidance. In summary, the integration of micro-lectures and aerobics courses can enrich teaching content, innovate teaching methods, and promote personalized teaching, providing new possibilities and avenues for the teaching reform and enhancement of aerobics courses. However, in the actual application process, challenges such as technical equipment and teacher training need to be overcome, continuously exploring and improving the application of micro-lectures in aerobics courses to achieve continuous improvement and development in education and teaching.

3. Micro-Lecture Impact Analysis on University Aerobics Courses

3.1. Exploring the Impact of Micro-Lectures on Student Learning Outcomes

As an emerging teaching format, micro-lectures have a certain impact on student learning outcomes. This section will discuss this aspect in detail. Firstly, the concise nature of micro-lectures contributes to enhancing students' learning efficiency. Compared to traditional teaching formats,

micro-lectures condense knowledge into brief, refined videos, delivering key information to students in a shorter time frame. This aids in focusing students' attention, facilitating rapid knowledge absorption, and improving learning efficiency. Secondly, micro-lectures provide convenient access to learning resources, enabling students to learn anytime, anywhere. Students can watch micro-lecture videos on their mobile phones, tablets, and other mobile devices without being restricted by time and location. This flexibility allows students to utilize fragmented time for learning, enhancing learning flexibility and efficiency. Furthermore, micro-lectures can provide personalized learning experiences, catering to the diverse learning needs of different students. Since micro-lecture content can be customized based on students' learning levels and interests, it can offer personalized learning resources and guidance, stimulating students' learning interest and potential, thus improving learning outcomes. However, micro-lectures also present some potential issues and challenges. For instance, due to the relatively short duration of micro-lectures, they may not cover all knowledge points comprehensively, leading to insufficient understanding of certain topics. Additionally, the isolated learning process of micro-lectures, lacking real-time interaction with teachers and peers, may affect students' learning motivation and outcomes. Therefore, in the use of micro-lectures, teachers need to rationally arrange their usage based on actual circumstances, integrating them with classroom teaching and other teaching methods to ensure that students fully utilize micro-lecture resources and improve learning outcomes. Additionally, schools should strengthen training and guidance on micro-lecture teaching methods for teachers to enhance their abilities in micro-lecture teaching, thus better utilizing micro-lectures to improve student learning outcomes.

3.2. Comparison of Traditional Teaching and Teaching Assisted by Micro-Lectures

Traditional teaching and teaching assisted by micro-lectures exhibit significant differences in teaching methods, learning experiences, and learning outcomes. The following provides a comparative analysis:

1) Comparison of Teaching Methods:

- Traditional Teaching: Traditional teaching is teacher-centered, focusing on classroom lectures and student listening, with relatively fixed teaching content and methods.

- Teaching Assisted by Micro-Lectures: Teaching assisted by micro-lectures emphasizes student-centered, inquiry-based learning, with teachers playing more of a guiding role. Students engage in learning through watching micro-lecture videos, participating in discussions, and practical activities.

2) Comparison of Learning Experiences:

- Traditional Teaching: In traditional teaching, students primarily passively receive knowledge in the classroom, resulting in relatively monotonous learning experiences with limited interactivity.

- Teaching Assisted by Micro-Lectures: Teaching assisted by micro-lectures offers more diverse and rich learning experiences. Students can learn at their own pace and according to their interests, fostering their learning motivation and initiative[3].

3) Comparison of Learning Outcomes:

- Traditional Teaching: Learning outcomes in traditional teaching are limited by the effectiveness of teacher lectures and student reception capacity, potentially resulting in issues such as delayed information transmission and shallow student understanding.

- Teaching Assisted by Micro-Lectures: Teaching assisted by micro-lectures can improve student learning outcomes. Through dynamic video presentations and multimedia resources, teaching content can be vividly presented, aiding in deepening student understanding and memory of knowledge.

In summary, traditional teaching and teaching assisted by micro-lectures each have their strengths and weaknesses. Traditional teaching emphasizes face-to-face interaction between teachers and students but may suffer from issues such as monotonous teaching content and less engaging learning experiences. Teaching assisted by micro-lectures focuses on student-centered and inquiry-based learning, enhancing learning outcomes and experiences, but requires collaboration between teachers and students to fully utilize micro-lecture resources for maximum teaching effectiveness.

3.3. Student Feedback

Student feedback is crucial for evaluating teaching effectiveness and improving teaching methods. In teaching methods assisted by micro-lectures, student feedback encompasses various aspects, including learning experiences, learning outcomes, participation and interest, as well as technical support and feedback mechanisms. Students provide suggestions and opinions on their learning experiences, including the quality of micro-lecture videos, richness of teaching content, and attractiveness of teaching methods. They also evaluate their learning performance and experiences under the micro-lecture assistance, offering improvement suggestions. Additionally, students' participation and learning interest are important feedback contents, reflecting the role of micro-lectures in stimulating learning interest and enhancing learning motivation. Moreover, students may also focus on technical support and feedback mechanisms of teaching platforms, providing suggestions on platform stability, user experience, and problem feedback channels to better support teaching activities and student learning. By fully listening to student feedback and adjusting and improving teaching methods and resources according to actual circumstances, it helps to enhance the effectiveness and quality of teaching assisted by micro-lectures, promoting continuous development and progress in education and teaching[4].

4. Factors Analysis

4.1. Challenges and Issues in the Application of Micro-Lecture Technology in Aerobics Courses

The application of micro-lecture technology in aerobics courses faces several challenges and issues that need to be addressed seriously. Firstly, insufficient technical equipment and network conditions are among the main obstacles to micro-lecture application. In some regions or schools, issues such as outdated technical equipment and insufficient network bandwidth still exist, which can affect students' viewing experience of micro-lecture videos and reduce the effectiveness of micro-lecture teaching. Secondly, there is disparity in teachers' abilities and technical proficiency in micro-lecture production, leading to uneven production quality. Some teachers lack relevant production skills and experience, resulting in inconsistent quality of micro-lecture videos, which affects teaching effectiveness. Additionally, the content design and teaching methods of micro-lectures need to be integrated with aerobics courses. However, many teachers lack related teaching concepts and methods and do not know how to integrate micro-lectures into classroom teaching, resulting in poor application effects. Moreover, student acceptance and usage habits of micro-lectures pose a challenge. Although micro-lectures offer convenience and flexibility, some students, accustomed to traditional teaching methods, may be reluctant to accept micro-lecture teaching. This necessitates teachers and schools to provide relevant guidance and training. In summary, the application of micro-lecture technology in aerobics courses faces a series of challenges and issues, including insufficient technical equipment, inadequate teacher production capabilities, unreasonable content design, and low student acceptance. To address these issues,

schools and education departments need to increase investment in technical equipment and network infrastructure, enhance teacher training and guidance to improve their micro-lecture production capabilities and teaching levels. Additionally, guiding students to actively participate in micro-lecture learning and gradually cultivate their acceptance and habits of new teaching methods are also necessary.

4.2. Role Transformation and Competency Requirements for Teachers in Micro-Lecture Teaching

The introduction of micro-lecture teaching has led to a certain degree of transformation in the role of teachers in classroom teaching, while also posing new competency requirements. Firstly, teachers play more of a role as guides and organizers in micro-lecture teaching. Compared to traditional classroom teaching, teachers are no longer solely knowledge transmitters but guide students in autonomous and inquiry-based learning through selecting, organizing, and interpreting micro-lecture content. Secondly, teachers need to possess certain technical production capabilities and instructional design skills. They should be proficient in using video production software and instructional design tools to produce high-quality micro-lecture videos, and be able to conduct reasonable instructional design and content setting based on students' learning needs and course objectives. Additionally, teachers need to have good communication skills and a spirit of teamwork. In micro-lecture teaching, teachers need to communicate effectively and collaborate with students, parents, and other educational professionals to promote the development of teaching activities and improve student learning outcomes. Moreover, teachers need to have a consciousness of continuous learning and innovation. Micro-lecture teaching is a new teaching method, and teachers need to continuously learn new knowledge, master new skills, and innovate teaching methods and content to adapt to the development and changes in education and teaching. In summary, the role transformation and competency requirements for teachers in micro-lecture teaching mainly include acting as guides and organizers, possessing technical production capabilities and instructional design skills, having good communication skills and a spirit of teamwork, and having a consciousness of continuous learning and innovation. Only by continuously improving their professional qualities and teaching abilities can teachers better meet the demands of micro-lecture teaching, improve teaching effectiveness and quality, and provide better educational services for students[5].

4.3. Analysis of Student Attitudes and Adaptation to Micro-Lectures

Student attitudes and adaptation to micro-lectures are influenced by various factors, including personal learning habits, technical abilities, teaching quality, and content. The following analysis examines student attitudes and adaptation to micro-lectures: Firstly, student attitudes are influenced by their personal learning habits and attitudes. Some students are accustomed to traditional classroom teaching and may hold reservations toward micro-lectures, while others may be curious about micro-lectures and willing to try new learning methods, holding open attitudes. Secondly, students' technical abilities also affect their attitudes and adaptation to micro-lectures. Students with strong technical abilities may find it easier to adapt to the learning methods of micro-lectures and be proficient in operating various devices and software. However, students with weaker technical abilities may feel confused and inconvenienced, requiring additional technical support and guidance. Furthermore, the quality of teaching and content directly impacts students' acceptance of micro-lectures. If micro-lecture videos are well-produced and the content is engaging and interesting, students are naturally more willing to accept micro-lectures. Conversely, if the quality of micro-lectures is poor and the content is dull, students may develop resistance, affecting learning

outcomes. Additionally, students' adaptation to micro-lectures is also related to teachers' guidance and support. Teachers who provide appropriate guidance and assistance to students during micro-lecture teaching can help students overcome learning barriers and gradually adapt to the micro-lecture learning method, positively influencing students' acceptance. In conclusion, student attitudes and adaptation to micro-lectures are influenced by multiple factors, including personal learning habits, technical abilities, teaching quality, and teaching content. Teachers should take appropriate measures based on students' actual situations to guide and help students adapt to micro-lecture learning smoothly, improve teaching effectiveness, and enhance student learning experiences[6].

5. Optimization Strategies and Recommendations

In order to optimize the application of micro-lectures in aerobics courses, a series of comprehensive strategies and recommendations need to be implemented. Firstly, schools should strengthen teacher training and support to enhance their micro-lecture production skills and teaching methods. This includes providing technical support, sharing resources, and encouraging teachers to innovate teaching methods to improve the quality and effectiveness of micro-lectures. Secondly, teachers should carefully design micro-lecture content, integrating case studies, field shooting, and other methods according to the characteristics of the course and the needs of students, making micro-lectures more attractive and practical. Additionally, schools and teachers should encourage students to actively participate in micro-lecture learning, provide channels for student feedback, understand students' learning needs in a timely manner, and adjust and improve micro-lecture teaching to enhance student learning experiences and outcomes. At the same time, schools need to increase investment in technical equipment and network infrastructure to ensure that students can smoothly view and learn from micro-lecture videos. Establishing a sound micro-lecture teaching evaluation mechanism is also crucial to identify problems and propose improvement suggestions in a timely manner, continuously optimize the micro-lecture teaching model, and improve teaching quality and effectiveness. Finally, schools can collaborate with other educational institutions or enterprises to share teaching resources and experiences, promote continuous innovation and development of micro-lecture teaching models. In conclusion, through the comprehensive implementation of the above strategies and recommendations, it is hoped to further enhance the application effectiveness of micro-lectures in aerobics courses and promote the comprehensive development of students.

6. Conclusion

In the era of micro-education, micro-lectures, as a new form of teaching, have important significance and potential for the application in aerobics courses in universities. Through the research and analysis in this paper, the following conclusions can be drawn: Firstly, micro-lectures provide new ideas and methods for the teaching of aerobics courses. Through the format of micro-lectures, teachers can produce videos explaining basic movements, techniques, and precautions of aerobics, and provide them to students to watch anytime and anywhere, which helps enrich course content, innovate teaching methods, and improve student learning outcomes and experiences. Secondly, the micro-lecture teaching model requires cooperation between teachers and students to achieve the maximum teaching effectiveness. Teachers need to have certain technical production capabilities and instructional design skills, while also guiding and helping students adapt to the micro-lecture learning mode, improving students' learning enthusiasm and initiative. Lastly, optimizing the application of micro-lectures in aerobics courses requires joint efforts from multiple parties. Schools and teachers should strengthen teacher training and support to improve teachers'

micro-lecture production capabilities and teaching levels. At the same time, students should actively participate in micro-lecture learning, provide feedback, and work with teachers to promote continuous innovation and development of the micro-lecture teaching model. In conclusion, the application of micro-lectures in aerobics courses in universities has important significance and potential, but also faces some challenges and difficulties. Through continuous exploration and practice, strengthening teacher training and support, improving teaching quality and effectiveness, it is hoped to further promote the widespread application of micro-lectures in aerobics courses in universities, and promote continuous improvement and development in education and teaching.

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