USING MICROTEACHING METHOD TO IMPROVE BASKETBALL TECHNICAL ABILITY FOR UNDERGRADUATE STUDENTS

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A thesis submitted in partial fulfillment of the requirements for
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	Technical Ability for Undergraduate Students			
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Thesis Using microteaching method to improve basketball

technical ability for undergraduate students

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ABSTRACT

The objectives of this research were to 1) study the factors to improve basketball technical ability for undergraduates, and 2) examine the effects of implementing microteaching method. The sample group consists of 30 undergraduates, at Qingdao Agricultural University in China, who were selected through the cluster random sampling. The research instruments were 1) lesson plans by using microteaching method, and 2) basketball technical ability achievement test. The assessment questions aimed to assess two sub-variables within the dependent variable, including: (1) paper test of basketball knowledge, and (2) operation achievement. The research was analyzed by data analyzed on frequency, percentage, interpretation, mean, and standard deviation for confirmation of instructional model.

The results were as followings:

- 1. Microteaching method consisted of 5 steps, 1) Preparing teaching materials in advance, 2) Conducting role simulation, 3) Recording by camera, 4) Replaying and observing, 5) Feedback and evaluation. The research was used in Qingdao Agricultural University in China, and the contents of the course included three units, totaling 18 hours. After programmed evaluation, it was found that students' basketball technical ability was improved obviously.
- 2. After implementing microteaching method, it was found that 30 students who enrolled in microteaching method was at good level. The mean was 27.77 before the test, the mean was 45.40 after the test, and the difference value was 17.63. It was found that students' basketball technical ability was improved obviously.

Keywords: Microteaching Method, Basketball Technical Ability, Undergraduate Students

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Chapter 1

Introduction

Rationale

The Ministry of Education (2002) issued Notice of the Ministry of Education on the Issuance of the National Physical Education Teaching Guidelines for Colleges and Universities. The evaluation of physical education curriculum covered three areas: students' learning experience, teachers' teaching methods and the overall construction of the curriculum. Among them, students' learning evaluation was an important link, which ran through the whole physical education activities. Students' learning assessment should be a comprehensive evaluation of their learning outcomes and processes, which mainly covered physical and athletic skills, cognitive ability, learning attitude and behavior, interpersonal communication and cooperative spirit, as well as emotional expression, etc. In the specific evaluation, universities or colleges should adhere to the "three-dimensional" objective as the basis, pay attention to the combination of formative assessment and final test, evaluate peacetime training effect and extracurricular practice activities, and integrate other educational means for comprehensive evaluation. The main content of teacher teaching evaluation covered the professional quality of teachers and classroom teaching. (The Ministry of Education, 2002).

The sport of basketball, basketball is the fastest-growing sport in the world. Basketball is a tremendously popular spectator sport, particularly on television. The televising of NBA games worldwide and of men's and women's college games nationally has influenced many young athletes to participate in the sport. The international growth of basketball has created even more excitement and participation. Currently, over 200 countries have basketball federations. And basketball is for everyone. (Hal Wissel, 2012). Xiong Lei (2014) pointed out that basketball skills and abilities played an indispensable role in teamwork. The outcome of a basketball match often depended on the tacit understanding between the players and the skill level. Basketball was a sport that required teamwork. Each player must work closely with his teammates on the court to face each other's challenges. The application of technical ability would not only affect the individual performance of players, but also directly affect the combat effectiveness of the whole team. Gao Huafeng (2015) emphasized the constituent elements of basketball

technical ability, and deeply discussed and studied the three key indexes of dribbling ability, passing ability and shooting ability in the competitive ability system.

Performance in high-level basketball is a very complex process to understand, mainly due to its dependency on a substantial number of dynamical interactions between technical, tactical, fitness and anthropometric characteristics of players. Chai Zhiming (2017) stated that basketball could also strengthen their determination, self-confidence and team spirit. Basketball could also provide a good physical foundation for athletes. Basketball was not only a physical activity, but also an excellent body shape and fitness method, because during the game, the players needed to constantly move, jump and compete, which were effective ways to exercise the muscles of the whole body. Sampaio J., et al., (2018) Basketball is a team sport where box-score statistics are often used to help identify the reasons that explain the game's outcome. However, the box scores only contain information that describes the frequency of actions performed by players of both teams in a game. Player-tracking technology is one of the most recent technological advances in basketball. In all professional and developmental basketball leagues, the datagathering process is standardized and regulated by the operational definitions and criteria published in the Basketball Statisticians Manual. In a basketball team, point scoring often obscures other key determinants of collective success that, supposedly, can be measured using other box-score statistics. An alternative solution to refining performance metrics can be proposed by classifying players into different levels of point production. Liu Pengfei (2019) pointed out the effectiveness of basketball technology could also be influenced by the employment of diverse technological instruments. He carried out studies to assess how technology influenced the lesson planning process. It was found that applying basketball technology enhanced the planning process's overall quality and simultaneously boosted effectiveness.

The teaching method was important for basketball technique. The microteaching method, with the emphasis on controlled practice, audio-visual technology, and peer observation, is an effective tool for teaching development. It improves teaching skills and fosters a collaborative and reflective teaching community. Kolb, D. A. (1984) stated that microteaching provided teachers with the opportunity to experiment with different teaching strategies and received feedback from their peers and mentors. This, in turn, helped them to improve their teaching skills and become more effective educators. Kolb's statement underscored the value of microteaching as a professional development tool for teachers. By providing a controlled environment in which teachers could experiment with various teaching

strategies, microteaching offered a unique opportunity for teachers to gain practical experience and refine their techniques. Microteaching offered teachers a controlled environment to experiment, learn from feedback, and refine their teaching practices, ultimately leading to better outcomes for students and the teachers. Which is consistent with Stiggins, R. J., et al., (2004) pointed out that as a modern teaching mode, microteaching method emphasized on achieving the best teaching effects within a limited time. In this process, planned teaching was particularly important. Firstly, set up clear teaching objectives, teachers could clearly determine the specific goals and expected effects of each lesson, and make the teaching more targeted and directional. This not only helped teachers to prepare teaching contents in a targeted way, but also clarify their learning direction and improve their learning efficiency. Secondly, improve teaching efficiency. With the reasonable arrangement of teaching contents and time management, teachers could ensure that teaching tasks were completed in limited time and avoided the waste of class time. Thirdly, ensure the quality of teaching. By carefully designing and planning the teaching process, planned teaching could also promote teachers to reflect on and optimize the teaching methods and strategies in order to continuously improve the teaching quality. Fourthly, optimize teaching methods. Teachers needed to constantly try and explore new teaching methods and strategies to adapt to different teaching contents and students' needs. Through practice and summary, teachers could gradually optimize the teaching method, improve the teaching effect and students' learning experience. This process of continuous exploration and optimization helped to promote teaching innovation and development.

To sum up, the success of basketball technical ability is influenced by multiple elements, such as variations in personal learning and teaching approaches, environmental conditions, and technological usage can influence the efficiency of basketball training techniques. This research is based on microteaching method to improve basketball technical ability for undergraduate students, the application of microteaching method could significantly improve students' skills in dribbling, passing and shooting are the basic skills that basketball players must master. The proficiency of these skills directly affects the performance of the players on the field and the overall strength of the team. And this teaching can help them better understand the key points and difficulties of movement, so as to grasp and understand faster the teaching contents in class.

Objectives(s)

- 1. To use microteaching method to improve basketball technical ability for undergraduate students.
- 2. To compare students' basketball technical ability before and after the implementation based on microteaching method.

Research Hypothesis

After implementing by using microteaching method, the students' basketball technical ability was improved obviously.

Scope of the Research

Population and the Sample Group

Population

There are 60 freshmen students, majoring in civil engineering at Qingdao Agricultural University, in the second semester of the academic year 2023. Which were divided into two classes with 30 students in each class. (There was mixed ability in each class: high level, medium level and low level.)

The Sample Group

Through a random cluster sampling method, there were 30 freshmen students, majoring in civil engineering at Qingdao Agricultural University, with class 1 in the second semester of the academic year 2023.

The Variable

Independent variable: Microteaching method Dependent variable: Basketball technical ability

Contents

Apply the teaching mode based on microteaching method to improve students' basketball technical ability. This study focuses solely on basketball technology training of freshmen. The course is divided into three units, totaling 18 hours:

Unit 1: Basketball dribbling (6 hours)

Unit 2: Basketball passing (6 hours)

Unit 3: Basketball shooting (6 hours)

Time Frame

The study period is from March 2023 to August 2024, and will be divided into the following stages:

- 1. In March 2023, three chapters were submitted and defended.
- 2. In May 2024, modify and complete the lesson plan, relevant instrument and experiments based on microteaching method.
 - 3. The formal research phase was scheduled for June 2024.
- 4. In July 2024, the research findings were summarized, the research thesis was completed, and the paper was published.

Advantages

- 1. For the students: The microteaching method prioritizes students' autonomous learning and thought, fostering interactions and exchanges between teachers and students. Briefly, applying microteaching techniques in basketball skill development offers numerous advantages to learners, such as enhancing their interests and motivation in learning, boosting the impact of learning, fostering a cooperative mindset and team consciousness among students, and nurturing their independent learning skills.
- 2. or the teachers: Techniques in microteaching can aid teachers in enhancing the quality of their teaching. Microteaching method, centered around the student, primarily concentrate on their learning and thought processes. Concurrently, microteaching method fosters dialogues and exchanges between teachers and students. Enhancing teaching and learning fosters participatory learning. Teachers also possess a deeper understanding of students' educational progress and requirements. In addition to enhancing learning abilities, teachers require an expanded set of teaching skills and knowledge, including methods to present students' concepts and methods for crafting questions. Such competencies enhance students' pedagogical abilities and simultaneously boost their self-assurance and proficiency in teaching.
- 3. For the university: This approach enhances the educational standards of universities and aligns with the requirements of both teachers and students.

Definition of Terms

Microteaching Method was modern audiovisual technology and recording equipment plays a key role in microteaching. These tools allow teachers to record and review their own teaching practices and student skills development, allowing for critical reflection and analysis. Teachers and students can identify areas for improvement accordingly. The method aimed to help teachers improve teaching environment, focusing on training teaching skills, providing places for practical practice, simplifying the classroom teaching process, obtaining immediate feedback information, conducting short-term teaching attempts for a small number of students, and recording the analysis of the practical process. It consists of the following 5 steps:

Step 1: Preparing teaching materials in advance

In the microteaching method, the preparation in advance was not only the initial stage, but also a very crucial step. The preparation of microteaching included two aspects: making plans and selecting materials. In this stage of teaching, teachers needed to clearly set teaching objectives and contents, carefully designed teaching plans, and prepared the necessary teaching resources and tools. The method required teachers to choose appropriate teaching methods according to the knowledge content of the subject they taught. In addition, teachers also needed to have a deep understanding of students' academic background, learning habits and learning needs, so that they could develop teaching strategies that were more in line with students' actual needs.

Step 2: Conducting role simulation

In the process of role playing, the teacher would teach according to the pre-set teaching plan and imitated the real teaching environment. During this period, students were mainly guided to participate in the classroom, and experience the process of knowledge generation, the selection and application of learning methods through the perception of the situation. In this teaching stage, teachers needed to pay close attention to their teaching methods, the teaching language used and the teaching strategy adopted to achieve the natural flow and effectiveness in the teaching process. Through role-playing, students could understand the teaching methods and the characteristics of the content taught by the teacher in the classroom, so as to have a deeper understanding of what they had learned. In addition, role-playing teaching could also invite other teachers or students to play the role of students, which could more accurately simulate the real teaching scene.

Step 3: Recording by camera

In the microteaching method, video recording was regarded as one of the key steps. Video recordings could be used as objective evidence of the student's learning process and help deepen the understanding of the teaching contents. In this teaching stage, teachers needed to use professional camera equipment or recording tools to record the whole teaching process in detail. Video recording included several steps, such as on-site shooting, video recording and editing. The video recording was designed to preserve the teacher's teaching contents for subsequent review, observation and in-depth analysis. When recording the camera, the configuration and angle of the camera equipment must be carefully considered to ensure clear and accurate recording.

Step 4: Replaying and observing

In microteaching, replay observation was considered as another key step. Through playback observation, students could obtain real and comprehensive learning information. In this stage of teaching, teachers had the responsibility to watch their own or others' teaching videos in order to have a deep understanding of their own teaching behavior, the use of teaching language, teaching methods and other aspects of the problems and shortcomings. Through retrospective observation of the teaching process, teachers could evaluate their own teaching methods more objectively and identify their strengths and weaknesses in teaching, so as to provide valuable references for future teaching feedback and optimization.

Step 5: Feedback and evaluation

The final step in microteaching was feedback assessment. In this teaching stage, teachers were responsible for in-depth thinking and evaluation of their teaching methods, summarizing the teaching experience and lessons, and formulating corresponding strategies, improving the quality and level of their education. In addition, teachers could also invite other teachers or experts to evaluate and offer suggestions on teaching process so as to have a more comprehensive and objective understanding of teaching strengths and weaknesses.

Basketball Technical Ability described a player's ability to demonstrate various skills and execute movements in a basketball game. Good technical ability had an important influence on improving the competitive level of basketball players. A skilled player tended to respond more effectively to various challenges during the game, showed greater ability, and made a greater contribution to the team's ultimate victory. Basketball technical ability consisted of three kinds of ability: 1) basketball dribbling ability, 2) basketball passing ability, and 3) basketball shooting ability.

Basketball dribbling ability was one of the fundamental skills of basketball, including controlling the strength and direction of the ball, and maintaining the team's offense through dribbling. Players needed to be skilled in using their palms and fingers to manipulate the ball in order to avoid being tackled. Basic dribble movements included basic dribble, change direction dribble, cross dribble and back dribble. Dribbling was not only a bridge for offensive players to get rid of defense and create passing, breaking, and shooting points, but also an important means for offensive players to launch fast attack, organize and adjust tactical cooperation, and collapse defensive formation. Therefore, the strength of dribbling ability directly affected the player's action on the field and the team's overall tactical execution.

Basketball passing ability was the key to basketball attack, and it was the link between players to cooperate with each other and form offensive tactics. Passing techniques included chest pass, neck pass, head pass, wipe pass and jump pass. Players needed to have good vision and judgment to choose the best passing style and timing. Passing skill also involved mastering the power of the pass to ensure that the ball was passed quickly and accurately. Accurate passing could create a shot or fast break opportunity, disrupt the rhythm of the opponent's defense, and achieve a situation in which the attacker outnumbered the defender. Therefore, the passing ability directly affected the fluency and efficiency of the team's attack.

Basketball shooting ability was the key to scoring and one of the most basic and important skills in basketball. Shooting techniques included jump shots, layups, three-pointers and free throws. Layups were scored near the basket, required quick reflexes and a sense of reach; The three-point shot required more power and accuracy; Free throws required calm and concentration. Training in shooting technique involved constant repetition and adjustment to improve accuracy and stability. A player's shooting ability could often directly determine the outcome of the game, so shooting ability was very important for basketball players.

Research Framework

This studied about "Using Microteaching Method to Improve Basketball Technical Ability for Undergraduate students", the researcher studied the concepts and principles of microteaching method, analyzed microteaching method and introduced the research framework from many researchers: Hamad, A. Q. and Saud, L. M. (2015), Huang Zhihong (2017), Chen Song and Chen Feng (2018), Ji Rongrong (2020), Wang Hao (2022). In the research, the researcher had synthesized 5 steps to develop lesson plans according to the microteaching method in Figure 1.1:

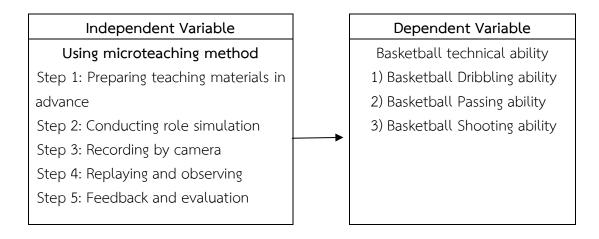


Figure 1.1 Research Framework

Chapter 2

Literature Review

In the research title "Using Microteaching Method to Improve Basketball Technical Ability for Undergraduates", the researcher reviewed relevant documents concerning the following in order to construct the theoretical framework for this research.

- 1. Microteaching method
- 2. Basketball technical ability
- 3. Measurement and evaluation of basketball technical ability
- 4. Related research

Microteaching Method

1. Meaning of Microteaching Method

Microteaching method has been defined and described by various scholars and educators over the years.

Lai Feng & Chen Gong (2016) described microteaching method as a teacher training method where teachers gave the opportunity to practice and improve their teaching skills by teaching a small group of students in a simulated class setting. In the implementation stage of microteaching, teachers must carefully plan the learning and application of each teaching skills to ensure that each link receives sufficient attention and execution. By carefully planning and executing each teaching skill, teachers could ensure that students are actively engaged in the teaching activities. This active participation not only helps students better understand and grasp knowledge, but also fosters their interests in learning and improves their learning motivation. Moreover, the careful planning and execution of teaching skills during microteaching method could help teachers identify areas where they needed further training or improvement. This feedback loop allowed teachers to constantly refine their teaching methods and strategies, further enhancing the quality of teaching and learning.

Tan Chenhong & Tan Gonghao (2017) defined microteaching method as a teaching strategy that involved the controlled practice of specific teaching skills in a small-scale, focused environment. The process typically involved teaching peers or students in short bursts, typically lasting 5 to 20 minutes, within a carefully controlled

and supervised setting. This environment, often composed of 4 to 6 students, allowed for focused observation and feedback on individual teaching techniques and strategies. The use of modern audio-visual technology and recording devices played a pivotal role in microteaching. These tools enable teachers to capture and review their teaching practices, allowing for self-reflection and critical analysis. By watching their own teaching sessions, teachers could identify areas for improvement and refine their skills accordingly. Additionally, these recordings could be shared with peers for collaborative feedback and discussion, further enhancing the learning experience. The exchange of the "teacher" role during microteaching sessions was an innovative aspect of this teaching method. This rotation not only provided teachers with an opportunity to observe and learn from their peers, but also prepared them for a range of teaching scenarios. By experiencing different teaching styles and approaches, teachers gained a broader understanding of effective teaching techniques and could adapt their own style to meet the needs of their students.

Huang Zhihong (2017) defined microteaching method as a kind of teaching training mode which focused on the improvement of teachers' skills. It allowed learners to practice teaching skills one by one in small class teaching practice by defining clear teaching tasks and using skill decomposition training method. In the process, multimedia AIDS were combined to enhance the teaching interaction, ensure the immediacy of feedback and instant evaluation, and help students accurately identify and improve their shortcomings. The micro-exercise of teaching strategies promotes the deep integration of theory and practice, while the circular improvement mechanism ensured the continuous optimization of teaching skills through continuous reflection and adjustment.

Chen Song & Chen Feng (2018) defined microteaching method as a kind of training method to subdivide and simplify the complicated teaching process. It usually took a small number of students as the object, and focused on training specific teaching skills through short teaching segments and recording by means of video. Participants could observe, analyze and improve themselves, which was an effective way to improve teaching ability and helped teachers to accurately improve teaching level.

In conclusion, microteaching method, with the emphasis on controlled practice, audio-visual technology, and peer observation, is an effective tool for teaching development. It improves teaching skills and fosters a collaborative and reflective teaching community. By implementing this method, teachers can enhance their teaching practices and ultimately improve student learning outcomes.

Microteaching is an effective method for teachers to improve their teaching skills and abilities. By carefully planning and designing the learning and application of each teaching skill in the process of the implementation stage, teachers can optimize the teaching process and enhance student learning outcomes. Evaluation and feedback help teachers identify areas for improvement, fosters a culture of continuous learning and reflection, enables teachers to continuously develop and enhances their teaching skills and abilities. In addition, teachers should also pay attention to the evaluation and feedback process during microteaching. By receiving feedback from peers and mentors, teachers can gain valuable insights into their teaching practices and identify areas for improvement. This continuous reflection and improvement cycle can help teachers develop their teaching skills and abilities over time.

2. The Significance of Microteaching Method

The importance of microteaching method in teacher training has been emphasized by many scholars and educators.

Kolb, D. A. (1984) stated that microteaching provided teachers with the opportunity to experiment with different teaching strategies and received feedback from their peers and mentors. This, in turn, helped them to improve their teaching skills and become more effective educators. Kolb's statement underscored the value of microteaching as a professional development tool for teachers. By providing a controlled environment in which teachers could experiment with various teaching strategies, microteaching offered a unique opportunity for teachers to gain practical experience and refine their techniques. This experimental phase was crucial, as it allowed teachers to test new approaches and identify which strategies were most effective in engaging students and achieving educational objectives. The feedback mechanism within microteaching was equally important. Receiving feedback from peers and mentors provided teachers with valuable insights into their performance. This feedback often highlighted strengths and weaknesses in teaching styles, enabled teachers to identify areas for improvement. Moreover, the iterative nature of microteaching—trying out new strategies, receiving feedback, and then adjusting approach—promoted continuous professional growth and development. Microteaching offered teachers a controlled environment to experiment, learn from feedback, and refine their teaching practices, ultimately leading to better outcomes for students and the teachers.

Stiggins, R. J., et, al. (2004) pointed out that as a modern teaching mode, microteaching method emphasized on achieving the best teaching effects within a limited time. In this process, planned teaching was particularly important. Firstly, set

up clear teaching objectives. In microteaching, clear teaching goal was the primary condition for teaching success. Through the planned teaching, teachers could clearly determine the specific goals and expected effects of each lesson and make the teaching more targeted and directional. This not only helped teachers to prepare teaching contents in a targeted way, but also clarify their learning direction and improve their learning efficiency. Secondly, improve teaching efficiency. Effective planned teaching could significantly improve teaching efficiency. Through the reasonable arrangement of teaching contents and time management, teachers could ensure that teaching tasks were completed in limited time and avoided the waste of class time. At the same time, a reasonable plan could also ensure that students have enough time for practical practice so as to deepen the understanding and application of knowledge. Thirdly, ensure the quality of teaching. Planned teaching was essential to ensure the quality of teaching. By carefully designing and planning the teaching process, teachers could ensure that the teaching content was systematic and coherent. At the same time, planned teaching could also promote teachers to reflect on and optimize the teaching methods and strategies in order to continuously improve the teaching quality. Fourthly, optimize teaching methods. In the process of planning teaching, teachers needed to constantly try and explore new teaching methods and strategies to adapt to different teaching contents and students' needs. Through practice and summary, teachers could gradually optimize the teaching method, improve the teaching effect and students' learning experience. This process of continuous exploration and optimization helped to promote teaching innovation and development.

Harris, J. & Jones, M. (2014) highlighted that microteaching could help teachers to plan and prepare their lessons more effectively by identifying potential challenges and areas for improvement. The microteaching process typically involved several stages, including planning, teaching, and reflection. During the planning stage, teachers prepared a lesson plan and identified the specific teaching skills they want to practice. In the teaching stage, they delivered the lesson to a small group of students in a simulated class setting, while being observed by their peers or mentors. After the teaching session, they received feedback on their performance and reflected on their teaching practice to identify areas for improvement. During the planning stage of microteaching, teachers prepared a lesson plan and identified the specific teaching skills they wanted to focus on. This planning process was crucial because it allowed teachers to anticipate potential challenges and areas for improvement in their teaching practice. By carefully considering the factors, teachers could design

lessons that were more likely to achieve desired learning outcomes. By planning and preparing lessons effectively, microteaching method could also help teachers to become more confident in their abilities. As teachers gained experience with microteaching, they developed a deeper understanding of their own teaching style and strengths. This self-awareness could be translated into more effective teaching practices, as teachers were able to recognize and capitalize on their own strengths while working to improve their areas of weakness. Additionally, the reflection stage of microteaching was an important component of the process. After teaching a lesson, teachers were encouraged to reflect on their performance by considering areas where they succeeded and where they could have improved. This reflection helped teachers to gain valuable insights into their teaching practice and to identify areas for future professional development.

In general, microteaching method plays a significant role in clarifying teaching objectives, improving teaching efficiency, ensuring teaching quality, enhancing teaching pertinence, promoting teachers' growth, strengthening teaching monitoring and optimizing teaching methods. Microteaching method is an effective way to carry out teaching activities. This not only helps to enhance teachers' ability, but also promotes students' progress in academic and personal growth.

3. The Elements of Microteaching Method

Microteaching method is crucial components that affect the efficiency of the methodology in enhancing teachers' teaching abilities. Microteaching method is a brief teaching episode, typically lasting 10 to 15 minutes, in which a teacher teaches a small group of students or peers. This strategy is intended to offer teachers with opportunities to practice and enhance their teaching skills, as well as get constructive comments from their peers. The microteaching method includes the following components:

Hamad, A. Q. and Saud, L. M. (2015) pointed out that the five steps of microteaching method included:

- 1. Preparing relevant teaching knowledge in advance. Before conducting microteaching, teachers should learn basic theories, teaching objectives, teaching skills, teaching design and other relevant knowledge of microteaching, so as to form a certain cognitive structure and improve the perceptibility and transmission efficiency of teaching skills.
- 2. Performing a role. The teacher should clarify the training objectives and requirements of the teaching skills, as well as the types, functions, roles and methods of teaching skills, so that students had a clear understanding of the training objectives.

- 3. Filming. In order to enhance students' perception of teaching skills, they could watch vivid microteaching demonstration films or on-site demonstrations by teachers to help students form a preliminary understanding of teaching skills.
- 4. Playing back and watching. According to the training objectives and the requirements of teaching skills, teachers needed to write detailed lesson plans, including teaching objectives, teaching contents, teaching methods, teaching steps, etc., to guide microteaching practice.
- 5. Response and evaluation. Teachers performed role playing and micropractice according to the written teaching plan, simulated real teaching scenes, applied the teaching skills, and received evaluation and feedback from other participants. Through the cycle of these five steps, teachers could gradually master and improve their teaching skills and improve teaching effects. It should be noted that in the process of implementing microteaching, teachers found and corrected the problems of students in the application of teaching skills.

Huang Zhihong (2017) mentioned that the five important aspects of microteaching methods were interrelated, which together constituted a complete teaching system. These five areas included:

- 1. Organizing teaching materials in advance. Clear, specific and measurable teaching objectives were the cornerstone of microteaching method, which provided clear direction and expected outcomes for teachers and students.
- 2. Staging a role. Choosing appropriate teaching contents and organizing it in a logical order according to students' cognitive characteristics and students' understanding.
- 3. Capturing on camera. Use a variety of teaching methods and skills, such as explanation, demonstration, discussion, practice, etc., to meet the learning needs from different students by camera.
- 4. Repeating and observing. Timely acquisition of student feedback and evaluation of teaching process would help teachers adjust teaching strategies and improve teaching effects.
- 5. Feedback and estimation. Teachers constantly reflected on their own teaching practice in the process of microteaching method, summed up experiences and lessons, and improved their teaching ability and professional quality. These five aspects interacted with each other in microteaching method and jointly promoted the improvement of teaching effects.

Chen Song and Chen Feng (2018) stated that microteaching was a teaching method aimed at training teachers to practice and reflect on their teaching skills by simulating a real class environment:

- 1. Preparing teaching aids in advance. In microteaching method, clear and specific teaching objectives were the foundation. These goals provided clear learning directions for students, and a basis for teachers to evaluate the effectiveness of teaching. Objectives should be set in line with the overall objectives of the course by considering the actual situation and needs of the students. Clear teaching objectives helped to ensure the pertinence and effectiveness of the teaching process.
- 2. Enacting role modeling. The core of microteaching was to cultivate teachers' teaching skills. In this process, teachers need to learn and master a series of teaching skills, such as explaining skills, questioning skills, and so on. Through simulated teaching scenarios, teachers could practice these skills and constantly reflect and improve in practice. At the same time, microteaching method also emphasized the systematic training of skills to help teachers form their own teaching style.
- 3. Recording footage. In microteaching method, teaching behavior analysis was an important link. By videotaping and playing back teachers' teaching behaviors, teachers could observe their own performance in class, and thus have a deeper understanding of their own teaching behaviors. At the same time, colleagues, tutors or students could also provide feedback and suggestions on the teacher's teaching behavior. The feedback and suggestions helped teachers identify their own shortcomings and develop strategies for improvement.
- 4. Reliving and monitoring. Teaching feedback mechanism was an indispensable part of microteaching. By collecting feedback from students, colleagues, mentors and other aspects, teachers could understand their own strengths and weaknesses in teaching. This feedback could be verbal, written, or digital. It was important to ensure the timeliness and validity of feedback information so that teachers could adjust their teaching strategies in a timely manner.
- 5. Response and estimation. In microteaching, teaching evaluation was a continuous process. Through the comprehensive evaluation of teaching objectives, teaching skills, teaching behavior and teaching feedback, teachers could understand their own teaching effectiveness and students' learning outcomes. Based on these evaluation results, teachers could make targeted improvement plans to improve their teaching level and effect. At the same time, teaching evaluation also helped to

promote the in-depth development of teaching research and promote the continuous innovation of education and teaching.

Ji Rongrong (2020) pointed out the five important aspects of microteaching methods:

- 1. Preparing instructional materials in advance. Microteaching method emphasized the clarity and specificity of teaching objectives. Teachers needed to know clearly the teaching objectives of each lesson to guide students' learning effectively.
- 2. Facilitating simulated roles. The content of microteaching method was usually selected, so that students could grasp the key points more quickly.
- 3. Videotaping. Microteaching methods encouraged students to actively participate, including questions, discussions and practice activities to enhance students' learning effect.
- 4. Playing back and watching. In microteaching method, teachers would give timely feedback to students, which helped students understand their learning progress.
- 5. Feedback and evaluation. Microteaching method was a process of continuous improvement. Teachers would adjust teaching strategies according to students' feedback and teaching results to optimize teaching results. These five aspects interacted with each other to form an effective teaching system. For example, clear teaching objectives could guide the selection of contents and the design of teaching methods. The active participation of students helped teachers to understand the teaching effect so as to provide targeted feedback. Timely feedback and continuous improvement ensured the quality and effectiveness of teaching.

Wang Hao (2022) stated that microteaching method was a kind of teaching method for the purpose of teacher training, which was usually used to cultivate and improve teachers' teaching skills. Microteaching method consisted of the following five main components:

1. Organizing relevant materials in advance. In the first stage of microteaching, teachers needed to receive relevant theoretical learning. This included the basic principles and theories of pedagogy, psychology, and pedagogy, as well as concepts, principles, and methods of microteaching. Theoretical learning helped teachers build a solid teaching foundation and provided guidance for subsequent skill training and practical operation.

- 2. Orchestrating a role. Skill training was the core part of microteaching. In this stage, teachers would learn and master various teaching skills, such as introduction skills, questioning skills, explaining skills, presentation skills, closing skills, etc. Through training and practice, teachers could gradually get familiar with and master these skills and lay a solid foundation for the subsequent practical operation.
- 3. Capturing on camera. In the practical operation stage of microteaching method, teachers would use the theories and skills they have learned to carry out practical teaching. This included designing teaching programs, preparing teaching materials, organizing teaching activities, and managing classroom discipline. Practical operation aimed to enable teachers to transform theoretical learning and skill training into practical teaching ability and improve teaching effect.
- 4. Repeating and observing. In the microteaching process, teaching feedback was a very important part. After teaching practice, teachers needed to accept feedback from colleagues, tutors or students. These feedback opinions could help teachers understand their own advantages and disadvantages in teaching and provide a basis for the subsequent teaching improvement.
- 5. Response and evaluation. According to the teaching feedback, teachers needed to reflect on and improve their own teaching. This might involve the adjustment of teaching programs, the improvement of teaching methods, the optimization of classroom management and so on. Through continuous improvement and re-teaching, teachers could gradually improve their teaching level and achieve better teaching results. In short, the five components of microteaching method theoretical learning, skill training, practical operation, teaching feedback and improvement and re-teaching, were interrelated and promoted each other to form a complete teaching process. This process was helpful for teachers to continuously improve their teaching skills, teaching quality and effect.

In conclusion, the microteaching method's dimensions were crucial components that affected the efficiency of the methodology in enhancing teachers' teaching abilities. Teachers could design a complete and effective microteaching plan that helped them perfect their teaching skills and become more effective teachers by examining each of these factors.

Table 2.1 The synthesis of microteaching method

Author	Hamad, A. Q. & Saud, L. M. (2015)	Huang Zhihong (2017)	Chen Song & Chen Feng (2018)	Ji Rongrong (2020)	Wang Hao (2022)	In this research
Step 1	Preparing relevant	Organizing teaching	Preparing teaching	Preparing	Organizing relevant	Preparing
	teaching	materials in	aids in advance	instructional	materials in	teaching
	knowledge in	advance		materials in	advance	materials in
	advance			advance		advance
Step 2	Performing a role	Staging a role	Enacting role	Facilitating	Orchestrating a role	Conducting
			modeling	simulated roles		role
						simulation
Step 3	Filming	Capturing on	Recording footage	Videotaping	Capturing on	Recording
		camera			camera	by camera
Step 4	Playing back and	Repeating and	Reliving and	Playing back and	Repeating and	Replaying
	watching	observing	monitoring	watching	observing	and
						observing
Step 5	Response and	Feedback and	Response and	Feedback and	Response and	Feedback
	evaluation	estimation	estimation	evaluation	evaluation	and
_						evaluation

The application of microteaching method in basketball technology ability training can produce remarkable influence. The influence of microteaching method on basketball technical ability is mainly reflected in the aspects of skill decomposition and refinement, improvement of learning effect, timely feedback and adjustment, and establishment of correct technical action concept. These influences are helpful for students to better master and use basketball skills and improve their basketball level.

Step 1: Preparing teaching materials in advance

Clear teaching objectives and contents: Teachers can clearly define the teaching objectives and contents of each lesson by preparing teaching materials in advance. The teacher will make a detailed teaching goal and write down these goals for students to watch and think about. Preparing teaching materials in advance ensures that the students' focus in the learning process is highly focused and clear, thus avoiding ineffective learning. In the specific classroom teaching, teachers should combine different teaching contents to determine the corresponding teaching objectives and specific contents so as to help students form correct learning motivation and in-depth understanding of the knowledge. In basketball technical teaching, clear teaching objectives and contents mean that students can train better according to specific technical movements or tactics, which can improve the pertinence and efficiency of training. It's integrated from the first step of Hamad, A. Q. & Saud, L. M. (2015), Huang Zhihong (2017), Chen Song & Chen Feng (2018), Ji Rongrong (2020), and Wang Hao (2022).

Step 2: Conducting role simulation

Standardized examples: In the teaching process of basketball technology, standardized demonstration is an absolutely necessary link. Teachers should choose appropriate methods and means to demonstrate basketball skills according to different teaching contents and show these contents to students in a standard format. Through pre-prepared teaching materials, students have the opportunity to be exposed to both professional and standardized basketball skills. Teachers can organically combine their understanding of different types of basketball games. Such demonstration not only helps students to establish a correct concept of basketball technology, but also correct incorrect movements during practice, so as to master basketball skills more quickly. It's integrated from the second step of Hamad, A. Q. and Saud, L. M. (2015), Huang Zhihong (2017), Chen Song & Chen Feng (2018), and Wang Hao (2022). In this process, teachers need to learn and master a series of teaching skills, such as explaining skills, questioning skills, and so on. Through

simulated teaching scenarios, teachers could practice these skills and constantly reflect and improve in practice.

Step 3: Recording by camera

Enhancing understanding and memorization: In order to enhance students' understanding and memorization of technical details and key points of basketball, well-designed teaching materials often include detailed explanations, diagrams and animations. In addition, targeted exercises and a variety of activities are needed to enable students to fully master the skills and method. Through repeated observation, learning, and practice, students are able to gain a deeper understanding of basketball skills, build lasting memories, and apply them flexibly in the game. It's integrated from the third step of Hamad, A. Q. and Saud, L. M. (2015), Huang Zhihong (2017), Chen Song & Chen Feng (2018), Ji Rongrong (2020), and Wang Hao (2022).

Step 4: Replaying and observing

Providing targeted training: Teachers can develop targeted practice plans based on in-depth analysis of teaching materials and the real needs of students. According to the specific requirements, the corresponding type of exercise program can be selected for teaching. These proposed programs may include subdivision training of technical movements, practical application of technical combinations, and actual combat simulation in various tactical environments. In this way, each learner can get enough exercise to improve their mastery of basketball skills. Through targeted training, students can improve their basketball skills and abilities more accurately. It's integrated from the fourth step of Hamad, A. Q. & Saud, L. M. (2015), Huang Zhihong (2017), Chen Song & Chen Feng (2018), and Ji Rongrong (2020).

Step 5: Feedback and evaluation

Timely feedback and adjustment: In the microteaching method, students' performance is often provided with immediate feedback and evaluation. Teachers modify and improve their own teaching process according to the feedback information of students. By comparing the examples in the teaching materials with the actual performance of students, students can timely identify their own problems in technical movements, tactical applications and other aspects, and make corresponding adjustments and improvements under the guidance of teachers. In addition, students are able to obtain information from others or peers to gain a more complete and accurate understanding of their mastery of technology. Such immediate feedback and adjustment strategies help students continue to improve during the process of learning, thereby rapidly improve their basketball skills. It's

integrated from the fifth step of Hamad, A. Q. & Saud, L. M. (2015), Huang Zhihong (2017), Chen Song & Chen Feng (2018), Ji Rongrong (2020), and Wang Hao (2022).

In general, preparing teaching materials in advance is the initial step of microteaching mode, which has a significant impact on improving basketball technical ability. Therefore, teachers should choose appropriate teaching materials prepared in advance according to different teaching contents to guide and help students conduct training. Through clear teaching objectives and content, standardized demonstration, strengthening understanding and memory, providing targeted practice programs and timely feedback and adjustment, students can continuously improve their basketball skills in a systematic and efficient learning environment so as to reach a higher level.

Basketball Technical Ability

1. The Meaning of Basketball Technical Ability

The technical ability of basketball is a multi-dimensional concept, in which dribbling, passing and shooting are the three core elements. In the game, all three basic techniques play an important role. These three skills not only reflect the individual technical ability of the players, but also determine the core factor of the team's overall tactical execution effect.

Gao Huafeng (2015) stated that basketball technical ability described the overall skills displayed by players in the game, which included all levels from basic dribbling skills to advanced tactics. Various skills and tactics of basketball players would play a vital role in the whole game, among which offensive skills played a very important position, therefore, improving the shooting percentage was particularly important for an excellent basketball player.

Li Zheming (2016) pointed out that basketball technical ability referred to the comprehensive performance of various skills and abilities required in basketball, including physical quality, special quality, basic technology, basic skills, tactical awareness and organizational command ability and so on. This set of techniques covered everything from basic dribbling, passing and shooting skills to more advanced dribbling penetration, defensive strategy and teamwork. It included many factors such as physical form and quality, psychological state and tactical awareness. An outstanding basketball player or team could show their best performance in the game when they were proficient in these skills.

Huang Zhihong (2017) stated that basketball technical ability was the comprehensive application of basic skills such as dribbling, passing and shooting. Each of these basic techniques had its unique role in the game, but they often did not

exist in isolation, but needed to be combined with each other to form a complete basketball technology system.

Zhao Shaoren (2019) pointed out that the technical strength of basketball really reflected a multi-faceted ability. This skill covered a wide range of areas, such as basic dribbling, accuracy of shooting, penetration and direction change, defense and break, passing and strategic response, quick attack and counterattack, rebounding skills, and teamwork and spirit.

Chen Zhong (2021) pointed out that basketball technical ability referred to the sum of all the skills and abilities that players needed to master and use in basketball. These skills and abilities covered a number of aspects from basic dribbling skills to advanced strategic awareness, which was the key for players to gain an advantage on the court and improve the overall strength of the basketball team.

Li Chao (2021) stated that basketball technical ability was a multidimensional concept that included many aspects from basic dribbling skills to teamwork and team spirit. It included passing technique, catching technique, rebounding technique and shooting technique and so on. The comprehensive strength displayed by the players in the basketball game was shaped by the mutual connection and mutual promotion of their skills and abilities.

In the basketball game, the comprehensive application of technical ability is particularly critical. In order to improve the combat effectiveness of the team, teachers must pay attention to the combination of a variety of technologies. Meantime, if teachers can apply a variety of different technical means, it is possible to respond more effectively to a variety of different game environments, thus create more offensive and defensive opportunities. The comprehensive application of basketball technical ability means that players can use various techniques flexibly and harmoniously in the game to achieve the best effect. Basketball technical ability includes the combination and application of a variety of technical and tactical means as well as the training of physical quality, psychological quality and will quality.

2. The importance of basketball technical ability

The basketball technical ability occupies a crucial position in the whole basketball game. It not only affects the performance and score of the players on the court, but more importantly, it enhances the personal growth and team cooperation ability of the players.

Hal Wissel (2012) the sport of basketball, basketball is the fastest-growing sport in the world. Basketball is tremendously popular spectator sport, particularly on television. The televising of NBA games worldwide and of men's and women's

college games nationally has influenced many young athletes to participate in the sport. The international growth of basketball has created even more excitement and participation. Currently, over 200 countries have basketball federations. And basketball is for everyone. Although it is an extremely youthful sport, with teenage males participation the most, it is played by both sexes of all ages and sizes and also by the physically challenged, including people in wheelchairs. Although there are advantages to being tall, there are also many opportunities for the smaller, skilled player. Participation among older players and female players is growing. More girls play interscholastic high school basketball than any other sport, and women's support groups are building networks that will continue the expansion of female participation.

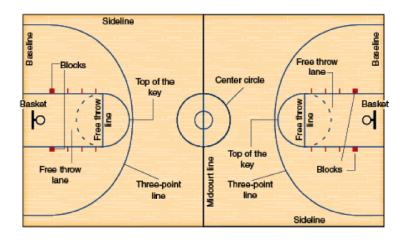


Figure 2.1 The basketball court; (Hal Wissel, 2012).

Xiong Lei (2014) pointed out that basketball skills and abilities played an indispensable role in teamwork. The outcome of a basketball match often depended on the tacit understanding between the players and the skill level. Basketball was a sport that required teamwork. Each player must work closely with his teammates on the court to face each other's challenges. Therefore, good technical and tactical level was very important for the team, it could improve the enjoyment of the game, enhance the spirit of cooperation between athletes and team. The application of technical ability would not only affect the individual performance of players, but also directly affect the combat effectiveness of the whole team. A skilled player had the ability to work more effectively with teammates, create favorable timing on offense and defense, thereby increasing the productivity of the entire team.

Picciano, A. G. (2017) explored that the improvement of basketball technical ability also contributed to the promotion and popularization of basketball. With the popularity and development of basketball around the world, more and more people began to contact and participate in the sport. Having a good basketball technical ability could not only win more honors and attention for the athletes in the game, but also attract more people to join the sport, promote the popularity and development of basketball in the world.

He Yongfei (2017) emphasized that basketball skills and abilities had a positive effect on the growth of individuals. Basketball could not only exercise athletes' physical functions, but also help them master more comprehensive skills. Through the study and improvement of basketball skills, players could not only improve their physical condition, but also enhance the coordination and reaction speed of the body.

Chai Zhiming (2017) stated that players could also use their physical advantages to play a superb tactical level, and bring more opportunities for the team to win. During the process of training, they needed to continuously challenge themselves and overcome various challenges, and strengthen their determination, self-confidence and team spirit. Basketball could also provide a good physical foundation for athletes. Basketball was not only a physical activity, but also an excellent body shape and fitness method, because during the game, the players needed to constantly move, jump and compete, which were effective ways to exercise the muscles of the whole body.

Han Liang (2022) emphasized that the technical strength of basketball played a key role in the performance of the game. Therefore, improving the technical ability of athletes was an important means to enhance the level of basketball competition. During the process of the match, the technical strength of the players was often the key factor in determining their overall performance level. Players and teams with superior technical strength were able to respond more flexibly to various challenges during the game, create more offensive and defensive opportunities, and achieve better performance. Therefore, excellent technical and tactical literacy was one of the important factors to improve the outcome of the game. The skilled application of technology could not only enhance the confidence of players and teams in the game, but also provide a solid backing for them to win the game.

In sum, the improvement of basketball technical ability has far-reaching significance for basketball players. It can not only help athletes get better results in the competition, but also promote their overall development and improve their

comprehensive quality. Therefore, it is very important for basketball players to continuously improve their basketball skills.

3. The Course of Basketball Technical Ability

The basketball technical ability of the players is regarded as the core element of winning. Basketball is a highly technology. Therefore, it is vital for basketball players to continuously improve their technical strength.

3.1 Basketball Dribbling Ability

Introducing the learning objectives of basketball dribbling. The teacher first introduces this lesson's teaching contents and learning objectives to the students and explains the content and importance of the teaching objectives in detail. Students can clearly understand the teaching objectives to achieve the expected teaching effect.

The teacher takes the students to the basketball court to do warm-up activity to ensure that students' physical functions are active.

The teacher explained the concept of basketball dribbling and demonstrate: (1) Dribbling posture and skills; (2) Movements of dribbling; (3) Dribble changes and combinations; and (4) Dribble with offense and defense. The learning contents are as follows:

(1) Dribbling posture and skills: Learn the correct dribbling posture, including body posture, arm and finger posture, etc. Master basic dribbling skills, such as controlling the power of the ball, maintaining the stability of the ball, using fingers and arms to coordinate, etc. Students learn and practice:

Firstly, dribbling the ball and gradually master the power, with the coordinated movement of the fingertips and arms, gently tap the side of the ball to make the ball bounce at a moderate height.

Secondly, a steady rhythm should be maintained when dribbling, which helps to improve dribbling speed and stability.

Thirdly, when dribbling, eyes should be focused on the front, not on the ball. Judge the bouncing direction of the ball by feeling and hearing. At last, when the ball bounces, the palm should move slightly in the direction of the ball's bounce to maintain stability.

(2) Movements of dribbling: Learn the basic movements of basketball dribbling, such as alternating hands dribbling, one-handed dribbling, changing hands dribbling, etc. Through repeated practice and refined training, students gradually master the skills and methods of the basic movements.

Firstly, alternating hands dribbling: This is the most basic way of dribbling. The students touch the ball with hands in turns to help maintain the bounce and control the direction of the ball. Hand-to-hand dribbling helps improve speed and flexibility.

Secondly, one-handed dribbling: One-handed dribbling is a technique used in the game, especially when changing directions or breaking quickly. One-handed dribbling requires more power and stability because it relies on only one hand to control the ball.

Thirdly, changing hands dribbling: Shifting dribble is the act of moving the ball from one hand to the other. This move is very useful when breaking and changing direction, as it helps students change the direction and rhythm of dribble.

In sum, repeated practice will help students familiarize and solidify the basic moves and improve dribbling speed and stability. Refinement training refers to the indepth practice of a specific movement or skill to improve accuracy and efficiency.

(3) Dribble changes and combinations: Learn dribble changes and combinations, such as shifting dribble, changing direction dribble, passing action, etc. Students understand the principles and application scenarios of these changes and combinations, and gradually get familiar with and master the dribbling skills through practice and simulated game situations.

Firstly, dribbling change refers to changing the rhythm and mode of dribbling by adjusting the strength of the hand, the bounce height of the ball, dribbling speed and dribbling direction during the dribbling process. These changes can help students better cope with various situations in the game, such as breaking through the opponent's defense, adjusting their offensive rhythm, and confusing the opponent.

- 1. Moving dribble: Moving dribble refers to the movement of the body while dribbling. This can include moving forward, backward, side to side, and so on. Moving the dribble can help students quickly adjust position during the game, maintain the right distance from the opponent, and create a situation in which the attacker outnumbers the defender.
- 2. Changing direction Dribble: Changing direction dribble refers to changing the direction of travel of the dribble by adjusting the hand and body movements in the process of dribble. This includes rapid direction changes, large turns and other actions. This dribble change can help students break through the opponent's defense and create offensive opportunities.

Secondly, dribble combination.

Dribble combination refers to the combination of multiple dribble movements together to form a coherent dribble sequence. Dribble combination can improve the fluency and variety of dribble, so that players can use dribble technology more freely in the game.

- 1. Dribbling and passing combination: Dribbling and passing combination refers to the sudden passing of the ball to a teammate or your other hand in the process of dribbling. This combination of movements can confuse the opponent, disrupt the opponent's defensive rhythm, and create offensive opportunities.
- 2. Continuous change of the direction: Continuous change of direction refers to the use of multiple consecutive change of direction to break through the opponent's defense. This combination requires students to have high dribbling skills and physical coordination and can quickly and accurately adjust the direction and rhythm of the dribble.

Learning dribble variations and combinations is crucial to improving basketball dribble skills, which can help students master dribbling skills more comprehensively, improve ball control and resilience. At the same time, dribble change and combination are also important means to create offensive opportunities and break through the defense in the game. Through repeated practice and refined training, students can gradually master the skills and methods of various dribbling changes and combinations and lay a solid foundation for better performance in the game.

(4) Dribble with offense and defense: Learn how to combine dribble with offense and defense, such as dribble penetration, dribble passing, dribble defensive turn, etc.

Firstly, offensive dribble.

Offensive dribbling is the use of dribbling techniques to break through the opponent's defense and create offensive opportunities in the process of attacking.

- 1. Dribble breakthrough: Students break through the opponent's defense line through continuous dribble movement and change direction skills to gain offensive space. This requires students to have good dribbling skills and a sense of rhythm, to be able to quickly adjust the direction and speed of the dribble, to confuse and get rid of defenders.
- 2. Dribble pass: In the process of dribbling, the player needs to pass the ball to the appropriate teammate in time according to the position of the teammates on the court and the opponent's defense. Dribble passing requires students to have

accurate passing judgment and stable dribble skills to be able to find the timing and route of passing while keeping the dribble.

Secondly, defensive dribble.

Defensive dribbling refers to the use of dribbling technology in the process of defense to interfere with the opponent's attack and compete for the ball. When the student is facing the opponent with the ball attacking, he can destroy the opponent's offensive rhythm by fast dribble turn action and compete for possession of the ball. This requires students to have agile reaction speed and stable dribbling skills, thus make the right judgment and action in the moment.

In short, offensive and defensive dribbling is an important part of basketball dribbling technology. By learning and practicing offensive and defensive dribbling skills, students can use dribbling skills more comprehensively and efficiently and contribute their strength to the team's victory.

3.2 Basketball Passing Ability

Basketball passing ability is an indispensable key skill in basketball games. It can not only create offensive opportunities, mobilize the offensive enthusiasm of teammates, but also effectively kill the opponent's defensive will and improve the game's enjoyment. Accurate passing not only shows the individual ability of the players, but also reflects the teamwork and wisdom of the whole team, which plays a crucial role in determining the outcome of the game. Therefore, students should pay attention to the practice and improvement of passing skills. (1) Basketball direct pass skill; (2) Basketball slant pass skill; (3) Basketball backhand pass skill.

The teacher takes the students to the basketball court to do warm-up activity to ensure that students' physical functions are active. The three aspects together constitute the basketball passing ability. Through constant practice, students can gradually improve passing ability and contribute to the team's victory.

(1) Basketball direct pass skill: This is the most direct and easiest way to pass the ball. A player passes the ball quickly and accurately from one position to another by passing it directly to a teammate. Straight passes are often used to pass long distances to quickly change the position of the ball and look for scoring opportunities. When playing a straight pass, players need to accurately judge the position and movement of their teammates to ensure that the ball can accurately reach their hands.

First of all, the key to basketball direct pass technique lies in accurate judgment. In the game, players need to always pay attention to the position of teammates and opponents on the field, as well as the rhythm and situation of the

game. When you see a teammate in a good position, make a quick passing decision. At the same time, it is also necessary to accurately judge the strength and angle of the pass to ensure that the ball can smoothly reach the hands of teammates.

Secondly, the direct passing technique requires the player to master the flexible and varied passing methods. Different passing techniques are suitable for different situations and teammates' needs. For example, a one-handed pass can be used when teammates are close; When the teammate is far away or in a tightly guarded area, it is necessary to use a two-handed pass or jump pass to ensure that the ball can pass the defender and reach the teammate safely.

Finally, direct passing also requires players to maintain their balance and vision. In the process of passing, the player should maintain a stable body posture to avoid affecting the accuracy of the passing due to body imbalance. At the same time, it is necessary to always observe and judge the situation on the field in order to adjust the passing strategy at any time. Only in this way, can students really play the power of basketball direct passing technology and create more offensive opportunities for the team.

(2) Basketball slant pass skill: Slant pass refers to passing the ball from one side to the other, but the path of the pass is not a straight line, but a diagonal line. This type of pass can be used to break through the opposing defense, because the diagonal pass line is often able to avoid the opponent's interception.

Firstly, the passing direction. The core of the oblique passing technique is to grasp the passing direction accurately. The passer should reasonably choose the angle and path of the oblique pass according to the position of the teammates on the field and the defensive situation of the opponent. Before passing the ball, the passer should clearly judge the catching ability and direction of movement of the teammate to ensure that the ball can accurately reach the target position.

Secondly, strength and speed control. The oblique pass technique requires precise control of the power and speed of the pass. The passer should adjust the intensity and speed of the pass reasonably according to the distance between the teammate and himself, the reaction speed of the opponent and the situation on the field. Too much or too little force, too fast or too slow can cause a pass to miss or be cut off by the opponent.

Thirdly, the time of the pass. Timing of passing is the key to oblique passing technique. The passer needs to observe the situation on the field and find the best time to pass. This usually happens when there are holes in the opponent's defense.

The passer should seize these opportunities in time to pass decisively and create offensive opportunities for the team.

Fourthly, physical coordination and balance. The oblique pass technique requires the passer to have good coordination and balance. During the passing process, the passer should maintain a stable body posture to avoid affecting the accuracy and stability of the passing due to the imbalance of the body. At the same time, the passer should also use the strength and flexibility of the body to help themselves better control the passing process.

Fifthly, distribution of sight and attention. The line of sight and attention allocation of the passer are crucial to the application of the slant pass technique. The passer should focus mainly on the defensive posture of the target teammate and the opponent while observing other teammates and the overall situation on the field with peripheral vision. This helps the passer to make accurate judgments and find the best passing target and path in time.

Sixthly, defense prediction and response. In the process of diagonal passing, the passer needs to anticipate the opponent's defensive movements and intentions and respond in advance. For example, when detecting that an opponent is about to intercept a pass, the passer can adjust the angle or speed of the pass to get the ball around the opponent's defense. At the same time, the passer should also be alert and ready to deal with the opponent's possible tackling or interference measures.

Seventhly, position and cooperation of teammates. The successful application of oblique passing technology is inseparable from the tacit cooperation with teammates. The passer needs to understand the running habits and receiving abilities of his teammates to pass the ball to them at the right place and time. At the same time, teammates should also actively receive the pass and be ready to attack after receiving the ball. Through good coordination, the team can make full use of the diagonal passing technology to break the opponent's defense and create scoring opportunities.

To sum up, the technical essentials of basketball oblique pass involve many aspects, which require the passer to explore and practice continuously in practice. By mastering these key points, players can better use the oblique passing technology, improve the team's offensive efficiency and scoring ability.

(3) Basketball backhand pass skill: The backhand pass is a technically demanding pass that is usually used in situations where a quick pass is required in tense situations. In a backhand cross, the player needs to place the ball to the side of his body, and then use the backhand motion to pass the ball to the target

teammate. This passing method requires players to have hand coordination and reaction speed, and also needs to master the passing power and angle to ensure the accuracy and speed of the pass. The backhand pass is usually used for passing from close range, or when the opponent's defense is tight, to break through the opponent's defense.

Firstly, preparing the posture. Before throwing a backhand pass, make sure the player is in the right position. The player should stand steadily with feet slightly wider than shoulders and knees slightly bent to lower the center of gravity. Keep hands in front of the body to make a quick passing motion. At the same time, keep the body relaxed so that the player can quickly exert power when passing the ball.

Secondly, observation and judgment. The success of the backhand pass largely depends on the player's ability to observe and judge. Before passing the ball, players should always observe the position, movements and intentions of teammates and opponents on the field. In particular, it is necessary to pay attention to the running and receiving ability of teammates in order to choose the best passing target and time. At the same time, the players also pay attention to the opponent's defensive posture, so that when passing the ball can avoid the other side's interception.

Thirdly, backhand passing action. The key points of backhand passing include palm flip, wrist power and finger dip. First, the player needs to turn the holder's palm up to better control the direction and force of the ball. Then, with a quick flip of the wrist and power, the ball is sent in the direction of the target. During the passing process, the fingers should gently flick the ball so that the ball can reach the hands of teammates more accurately.

Fourthly, passing intensity and direction. The strength and direction of backhand pass are the key factors that affect the passing effect. Too little or too much force can result in missed passes or tackles by the opponent. Therefore, when passing, players should reasonably control the intensity of passing according to the distance between teammates and themselves, the defensive situation of opponents and the situation on the field. At the same time, it is also necessary to accurately judge the direction of the pass according to the position and direction of movement of the teammates to ensure that the ball can smoothly reach the target position.

In short, backhand passing technique is an important and practical skill in basketball game. By mastering the correct preparation posture, observation and judgment, passing movement, players can better use backhand passing technology, improve the team's offensive efficiency and scoring ability.

3.3 Basketball Shooting Ability

Basketball shooting ability plays a very important role in basketball games. Whether it is from the point of view of scoring means, tactical core, confidence building, game rhythm, teamwork, confrontation advantage or skill improvement, shooting ability is one of the necessary core skills for players. Therefore, players need to improve their shooting ability through continuous training and practice in order to achieve better results in the game. 1) Basic shooting skills; 2) Shooting posture and power control; 3) Jump shot and layup technique.

(1) Basic shooting skills: This is the basis of learning basketball shooting, including the correct way to hold the ball, the choice of aiming at the basket point, the coordinated force of the shooting action, the angle and speed of the shot and the rotation of the ball. For students, it is necessary to gradually master and become familiar with these basic skills to ensure the accuracy and stability of shooting.

Firstly, correcting handling of the ball.

- 1. Holding the ball with five fingers: Hold the ball with five fingers, thus make sure the palm of the hand does not touch the ball.
- 2. Coverage area: Try to maximize the surface area of the five fingers to cover the ball to increase the control effect of the ball.
- 3. Elbow position: When holding the ball in both hands, the elbows should be slightly outward and keep the two upper arms, the two forearms, and the two thumbs of the left and right hands in a figure eight.
- 4. Wrist flexibility: When holding the ball with both hands, the wrist should be able to rotate flexibly.
- 5. Activity preparation: Before holding the ball, fingers, wrists, neck, shoulders, waist, elbows, knees, ankles should be moved to prevent injury.

Secondly, basket point selection.

- 1. Target point: Many teachers recommend aiming at the point at the front of the hoop, or behind the hoop, to help players better judge the arc and power of the shot.
- 2. Shot vision: When players see the point behind the basket, they can better judge the position of the ball into the basket, thus improve the shooting percentage.

Thirdly, coordinating force of shooting action.

1. Body comprehensive power: The force of shooting is a comprehensive and coordinated power process of the body, starting from standing posture and body balance.

- 2. Power transferring: Power starts from the lower leg push off and extends the body in the direction of the shot.
- 3. Control and key movements: The flexibility, and consistency of the wrist flip, shake and finger flick action are the key to determining a reasonable hand speed.

Fourthly, angle and speed.

- 1. Shot angle refers to the angle between the tangent line of the ball's center of gravity flight trajectory and the horizontal plane of the shot point when the ball leaves the hand. The best shot angle is usually around 45°, but this also depends on the individual skill of the player and the situation of the match.
- 2. Shooting speed refers to the moment of shooting, the comprehensive muscle strength of all parts of the body through the adjustment of the wrist and fingers, so that the ball from the hand into the space of the initial speed. The longer the shot, the faster the shot.

Fifthly, rotation of the ball.

- 1. Spin produce: When shooting, the spin of the ball mainly relies on the wrist forward bend or flip and the finger flick action.
- 2. Spin effect: The direction and speed of rotation of the ball determine the stability of the ball in the air and the possibility of entering the hoop.

In sum, mastering these basic elements of basketball shooting, and through repeated practice and training, can help players improve the accuracy and stability of shooting so as to achieve better results in the game.

(2) Shooting posture and power control: Shooting posture has an important impact on the shooting effect. The correct shooting posture can not only improve the shooting percentage, but also reduce the physical burden of players in the shooting process. In addition, power control is also an important part of shooting skills. Players need to learn how to adjust the shooting force to adapt to different distances and angles of the shooting needs.

Firstly, basketball shooting position.

Shooting posture refers to the combination of the player's body posture and arm, wrist and finger movements in the process of shooting. The correct shooting posture can improve the accuracy and stability of the shot, reduce the resistance when shooting, and make it easier for the ball to enter the hoop. Shooting posture includes a series of movements such as standing, holding the ball, arm extension, wrist flip and finger dip. When positioning, players need to maintain balance and choose the right angle and distance. When holding the ball, make sure that the five fingers are separated, the palm is not touching the ball, and the finger end and the

base of the palm are controlling the ball. When the arm is extended, make full use of the power of the lower leg to push the ball up from the chest or shoulder position. The wrist flip and finger dip are the keys to the shot, and through these two movements, the player can control the spin and flight of the basketball.

Secondly, basketball power control.

Power control refers to how a player adjusts and uses body power during a shot so that the ball leaves his fingers at the proper speed and angle and enters the hoop. Power control includes lower limb push off, waist and abdomen extension, arm and wrist exertion, etc. When shooting, the player needs to make full use of the strength of the lower limbs to push off the floor and transfer the power to the waist and arms. At the same time, the extension of the waist and abdomen is also important, it can help the player better control the angle and power of the shot. The strength of the arm and wrist is the key to shooting, and the player needs to flip the wrist and dial the finger to make the ball leave the finger at the appropriate speed and angle.

In short, basketball shooting posture and power control are important aspects of basketball shooting technology. With proper posture and proper power control, players can improve the accuracy and consistency of their shots and get better performance in the game.

(3) Jump shot and layup technique: Jump shot, and layup are common shots in basketball games. Jump shots can be used from a distance or tight defense, while layups are more often used for point-blank scoring. Jump shot and layup require mastering the right form, timing, and use of power, as well as maintaining balance and controlling the rhythm of the shot.

Firstly, basketball jump shot technique.

The jump shot is a shooting technique done during a jump, often used for mid-range or long-range shots. The main advantage of the jump shot is the ability to evade the defender's block and create more space to shoot.

The basic steps for a jump shot are as follows:

- 1. Prepare shooting position with the ball in front of chest or waist.
- 2. Bend knees and waist and prepare to jump.
- 3. Push off hard while extending waist and arms and throw the ball from head or shoulder position.
- 4. In the process of jumping, the arm and wrist should coordinate the force to make the ball leave the finger at the appropriate speed and angle.
 - 5. Keep balance when landing and get ready for the next attack or defense.

The jump shot requires correct posture and technique, including the coordinated force of the arms, wrists and fingers, as well as the proper timing of the jump and landing. With repeated practice, players can improve their jump shot accuracy and consistency.

Secondly, basketball layup technique.

The basic steps for a layup are as follows:

- 1. Dribble close to the basket and choose the right angle and route.
- 2. Speed up and drive past the defender, as close to the basket as possible.
- 3. Protect the ball with body while adjusting pace and angle to prepare for the shot.
- 4. Throw the ball from a low angle or a high angle by using coordinated arm and wrist force.
- 5. Pay attention to the position of the basket and the defender and choose the appropriate shot.

Driving a layup requires mastering the correct dribbling and driving skills, as well as the ability to shoot and score under the basket. At the same time, students also need to have good ball control ability and basketball awareness to flexibly use this technology in the game.

In short, basketball jump shot technology and layup technology are two commonly scoring methods in basketball games. By mastering the right techniques and practice methods, players can improve the use of these two techniques and scoring efficiency.

Measurement and Evaluation of Basketball Technical Ability

The process of measurement assessment and evaluation enables the students to make better use of the data available in the daily classroom. It offers learners an understanding of the role of assessment and evaluation in the instructional process. Basketball technical ability evaluation and measurement play a vital role in basketball. It not only has a far-reaching impact on the improvement of players' personal strength, the selection of outstanding talents, and the formulation of game strategies, but also has a positive role in promoting the development of the entire basketball movement, the improvement of the game's enjoyment, and the safety and health of athletes. Many scholars have proposed methods of measurement and evaluation basketball skills as follows:

Han Liang (2022) pointed out the first primary index was set up as dribbling test index, passing test index and shooting test index. On the basis of the first index, the second index was tried to be established. Construction of shooting primary test indicators. A shot was when the ball carrier throws the ball into the basket with one or both hands. Shooting was the key content of offensive tactics, the purpose of all tactics and the core of attack and defense. In the actual practice and competition process, the difficulty of shooting this technology was relatively high. It was necessary to have correct and standardized shooting action stereotyping, and through a certain amount of practice. High school students without professional training were in the initial and improvement stage of shooting skills. Because of the short practice time, not only the stability of shooting was poor, but also the standardization of shooting had certain defects. At this stage, they could standardize the shooting action and carry out standardized training. The first test index of shooting was 10 shots from the free throw line. As a test index of shooting accuracy and shooting accuracy, it was relatively not difficult to complete the test, but it took a certain amount of practice to obtain a high shooting rate. This index was aimed at students in the first and second years of high school. The second index was to test the shooting ability and accuracy of the students' dominant hand and non-dominant hand in the dribbling process. The test index was targeted at the first grade, second grade and third grade. The third indicator is 0°, 45°, 90°, 5-point shooting. Students stood in a fixed position after receiving the pass of others directly shot. The test required students to have a stable shooting hand and accuracy. Relatively speaking, there was a certain degree of difficulty, so the test indexed for the school segment of senior two and senior three. The fourth indicator was the one-minute shot. This indicator was the closest test to the actual situation. This index required students to be proficient in shooting and had a certain degree of shooting stability and accuracy and requires students to have enough physical fitness to complete the test, and the comprehensive requirements for students are relatively high.

Yang Tao, Cong Chen & Yang Weiqun (2019) pointed out basketball passing was divided into many ways, in the college basketball technical teaching, students passed the wall, established some evaluation criteria on the wall. Firstly, determine a circle center on the wall, and then draw a circle with the radius, the passing distance was different between men and women, boys were relatively a few centimeters longer than girls, students passed the way with both hands in front of the wall to throw the circle. The number of passes should be specified, and the standardization of students' passing movements should be evaluated through process evaluation, so

that students could standardize their movements in the process of learning, so that students' movements could reach a higher level. In the exam, pass the ball against the wall, draw a circle with a radius on the wall, and then draw a circle 10cm longer than this radius. The two circles were side by side, and boys and girls passed the ball against the two circles. When passing the ball, the distance between boys and girls was different, and the distance between boys and girls was larger than that between girls. The teacher determined the number of throws and evaluated the position of the thrown ball touching the circle on the wall. The evaluation method was to adopt the process of evaluation standard, so as to promote students' proficiency in passing technology and improved the accuracy rate of students' passing, so as to continuously improve the teaching quality of basketball teachers. College shooting technology was mainly to examine the students to master the standardization of technical movements. In the final assessment, students would be graded in two aspects: whether their movements were standardized and whether they had mastered their skills. A shooting area would be set up outside the basketball circle, and students would be graded according to the number of shots they made. The time limit was 1 minute. The process evaluation divided the technical assessment into two parts, the mid-term and the final assessment. In the mid-term assessment, it was a standardized evaluation of whether the students' movements were standardized, so that the students' movements could be consistent and standardized when shooting.

Chen Zhong (2021) stated that shooting ability was core basketball technology, including long shooting, mid-range shooting and close shooting. A top three-point shooter could space the floor on the perimeter, create offensive opportunities, and even directly determine the outcome of the game. Specifically, a good three-point shooter might maintain a three-point shooting rate of more than 40% during the season, which meant that for every five three-point shots he took, more than two will hit the basket. The middle-distance area between the free throw line and the three-point line was a zone of technology and wisdom on the basketball court. A good middle shooter who could maintain a 45-50% shooting rate in the area would pose a great challenge to the opponent's defense. Shooting near the basket, as the closest way to the basket, was one of the most efficient means of scoring in basketball games. A good finisher at the basket might maintain a shooting rate of more than 60% at the basket during the season, which meant he was efficient at getting the ball to the basket against the defense.

Tian Pengwei (2023) stated two points: (1) Through systematic construction, the evaluation index system of competitive ability of female three-player basketball players in college sports training majors constructed by this research consists of 2 first-level indicators, 8 second-level indicators and 66 third-level indicators. Among them, the first index was the two dimensions of competitive strength and ability to play, the second index of physical form, physical function, physical quality, skills and tactical ability belong to the dimension of competitive strength, and the second index of mental ability, sports intelligence and confrontation ability belong to the dimension of ability to play. The 66 Level 3 indicators were also covered by the two primary indicators. (2) The weight distribution characteristics of each indicator level were as follows: the first-level indicator level gives play to the ability. (0.6667) > Competitive strength (0.3333); Confrontation ability (0.3334) was higher than psychological ability. (0.206) > Athletic intelligence (0.1272) > Skill (0.1222) > Physical form (0.0804) > Physical function (0.0605) > Physical fitness (0.0402) > Tactical ability (0.030); At the level of three indexes, the stability of shooting under the confrontation of the lower index of confrontation ability, the adaptability of the lower index of psychological ability and the lower level of sports intelligence. Among the three indexes, the adaptability, the height in physical fitness, the PWC170 in physical function, the 17 break in physical fitness (anaerobic endurance), the ball-holding breakthrough technology in skills, and the tactical awareness in tactical ability had the greatest influence on the superior index.

In addition, the researchers also studied the objective test form and performance assessment to help teachers clearly check the basketball skills as follows:

1. The objective Test

Jooyong Park (2010) said there are several advantages to multiple choice tests. If item writers are well trained and items are quality assured, it can be a very effective assessment technique. If students are instructed on the way in which the item format works and myths surrounding the tests are corrected, they will perform better on the test. On many assessments, reliability has been shown to improve with larger numbers of items on a test, and with good sampling and care over case specificity, overall test reliability can be further increased. Some multiple-choice questions are given points for correct answers, and 0 points are awarded for incorrect answers or non-answers; Therefore, when students answer questions, 1 point can be awarded for correct answers, and 0 points for incorrect answers.

Li Hui (2015) Single-choice question is one of the main types used in the test, the purpose is to test the student's mastery of the knowledge and the ability to distinguish and analyze. Each question has a correct choice. The other choices are either incorrect or wrong. Students are asked to compare the four choices and choose the one that is correct and conforms to the question. The common types of single choice questions are: best choice, combination choice, fill-in-the-blank choice, material, citation choice, causal choice and so on. No matter how the question type changes, the key is to choose only one item. This term is either the "best term" or the "only term."

2. The authentic assessment

Gulikers J. T., et al. (2004) defined authentic assessment as "an assessment requiring students to use the same competencies, or combinations of knowledge, skills, and attitudes, that they need to apply in the criterion situation in the professional life" more accurately captures the nature of authentic assessment and the characteristics of criterion situations. The physical context, the social environment, the assessment outcome, the assessment criteria, and the actual criterion condition determines the degree of authenticity, With the use of this idea and framework, educators can examine and gauge the authenticity of assessments.

Allen & Tanner (2006) assessment rubrics are "a type of matrix providing scaled levels of achievement or understanding with detailed descriptions for a set of criteria or dimensions of quality and scoring strategy for a given type of performance".

Therefore, applying Microteaching method in basketball technical ability significantly boosts students' practical competencies. The researchers have developed rubric assessment criteria the basketball technical ability for 3 units: 1) Basketball dribbling as shown in table 2.2, 2) Basketball passing as shown in table 2.3, and 3) Basketball shooting as shown in table 2.4

Table 2.2 Developing scoring criteria for basketball dribbling

A consumer to the con-	Criterial of Score		
Assessment Item	3=Good	2=Fair	1=Poor
1. Dribbling posture and skills:	Students are	Students are	Students are
1) dribbling the ball and	most able to	moderate	little able to
controlling the power of the ball	dribble the	able to	dribble the
2) dribbling the ball, a steady	ball correctly	dribble the	ball.
rhythm and maintaining the	and	ball.	
stability of the ball	completely.		
3) using finger and arm			
coordination movement, while			
dribbling.			
4) when dribbling, eyes focused			
on the front, not on the ball.			
5) when the ball bounces, the			
palm moves slightly in the			
direction of the ball's bounce to			
maintain stability.			
2. Movements of dribbling:	Students are	Students are	Students are
1) Alternating hands dribbling:	most able to	moderate	little able to
touch the ball with hands in turns	movements of	able to	movements
to help maintain the bounce and	dribbling the	movements	of dribbling
control the direction of the ball.	ball correctly	of dribbling	the ball.
2) One-handed dribbling: One-	and	the ball.	
handed dribbling to help maintain	completely.		
the bounce and control the			
direction of the ball			
3) Changing hands dribbling: the			
act of moving the ball from one			
hand to the other it helps			
students change the direction and			
rhythm of dribble.			

Table 2.2 (Continue)

A	Criterial of Score		
Assessment Item	3=Good	2=Fair	1=Poor
3. Dribble changes and	Students are	Students are	Students are
combinations:	most able to	moderate	little able to
1) Dribbling change: changing	dribble	able to	dribble
the rhythm and mode of	changes and	dribble	changes and
dribbling by (1) Moving dribble,	combinations	changes and	combinations
moving forward, backward, side to	the ball	combinations	the ball.
side, and so on. It can help	correctly and	the ball.	
students quickly adjust position	completely.		
during the game, maintain the			
right distance from the opponent.			
(2) Changing direction dribble by			
adjusting the hand and body, it			
helps students break through the			
opponent's defense and create			
offensive opportunities.			
2) dribble combination: the			
combination of multiple dribble			
movements together to form a			
coherent dribble sequence, it can			
improve the fluency and variety of			
dribble by (1) Dribbling and passing			
combination: the sudden passing of			
the ball to a teammate. (2)			
Continuous change of the direction:			
the use of multiple consecutive			
change of direction to break			
through the opponent's defense.			

Table 2.2 (Continue)

Assessment Harry	С	riterial of Score	
Assessment Item	3=Good	2=Fair	1=Poor
4. Dribble with offense and	Students are	Students are	Students are
defense:	most able to	moderate	little able to
1) offensive dribble: the use of	dribble with	able to	dribble with
dribbling techniques to break	offense and	dribble with	offense and
through the opponent's defense	defense the	offense and	defense the
and create offensive	ball correctly	defense the	ball.
opportunities in the process of	and	ball.	
attacking by (1) Dribble	completely.		
breakthrough the opponent's			
defense line through continuous			
dribble movement and change			
direction skills to gain offensive			
space. (2) Dribble pass: the player			
needs to pass the ball to the			
appropriate teammate in time by			
accurate passing and stable			
dribble.			
2) defensive dribble: the use			
of dribbling technique in the			
process of defense to interfere with			
the opponent's attack and			
compete for the ball. they can			
destroy the opponent's offensive			
rhythm by fast dribble turn action			
and compete for possession of			
the ball.			

Table 2.3 Developing scoring criteria for basketball passing

Assessment	Criterial of Score		
ltem	3=Good	2=Fair	1=Poor
	Students were able to	Students were able	Students were
	pass basketball	to pass basketball	able to pass
	directly,	directly, straight	basketball directly,
1. Basketball	straight and long-	and long-distance	straight and long-
direct pass skill	distance pass to	pass	distance pass
	teammates	to teammates	to teammates
	is quickly and	is quickly, but little	is slow and
	accurately.	accuracy.	inaccurate.
	Students were able to	Students were able	Students were able
	pass the ball	to pass the ball	to pass the ball
	diagonally	diagonally	diagonally through
2. Basketball	through the	through the	the opponent's
	opponent's	opponent's	defense, but
slant pass skill	defense and	defense, but	teammates cannot
	teammates	teammates	catch the ball.
	can catch the ball	can catch the ball	
	accurately.	little accurately.	
	Students were able to	Students were able	Students were able
	place the ball to the	to place the ball to	to place the ball to
	side of his body, and	the side of his	the side of his body,
3) Basketball	use the backhand	body, and use the	and use the
backhand pass	motion to pass the	backhand motion	backhand motion to
skill.	ball to the target	to pass the ball to	pass the ball to the
	teammate accurately.	the target	target teammate
		teammate little	inaccurately.
		accurately.	

Table 2.4 Developing scoring criteria for basketball shooting

Assessment	Criterial of Score		
ltem	3=Good	2=Fair	1=Poor
1. Basic	Steady ball control,	Moderately steady	Little steady ball
shooting skills	quick basket	ball control, quick	control, quick
	selection, coordinated	basket selection,	basket selection,
	and rotated shooting.	coordinated and	coordinated and
		rotated shooting.	rotated shooting.
2. Shooting	Accurate position and	Moderately	Inaccurate position
posture and	strength.	accurate position	and strength.
power control		and strength.	
3. Jump shot	Accurate jump shot	Moderately	Inaccurate jump
and layup	and layup skills.	accurate jump shot	shot and layup
technique		and layup skills.	skills.

Relevant Research

Gao Huafeng (2015) This paper aimed to explore the effectiveness of microteaching method in improving junior high school students' basketball skills. This studied 20 students in the experimental group and 20 students in the control group. The experimental group received microteaching, and the key movement exercises were strengthened through subdivision skills, repeated video playback and immediate feedback. The control group followed the traditional teaching method. The results showed that the students in the experimental group had significant improvement in the mastery of basketball skills, movement norms and practical application, which provided a new and effective way for junior high school basketball teaching.

Li Fei (2015) researched on competitive performance of China University Basketball Super League, this study set up an experimental group and a control group, with 15 college students in each group. The experimental group adopted the microteaching method to teach basketball dribbling techniques. This method helped students to deeply understand and master the essence of dribbling through subdivision of dribbling skills, real-time video analysis, personalized guidance and repeated practice. After 8 weeks of careful teaching, the experimental results showed that the students in the experimental class had made remarkable progress in the practical application of basketball dribbling technology. The technical movements were more proficient, the stability and creativity of dribbling in the game were greatly

improved. This result fully validated the effectiveness and practicability of microteaching method in improving college students' basketball dribbling technique.

Lai Feng & Chen Gong (2016) an empirical study on the influence of microteaching method on basketball dribbling ability. Experimental group: 20 middle school students with similar basketball foundation were selected, with an average age of 15 and a balanced ratio of male to female. Control group: 20 middle school students with similar basketball foundation were also selected, with an average age of 15 years old, and the ratio of male to female was consistent with that of the experimental group to ensure that there was no significant difference between the two groups under the initial conditions. After four weeks of microteaching training, students in the experimental group significantly improved their basketball dribbling ability (such as dribbling speed, stability, flexibility, etc.), and significantly improved their performance compared with the pre-test. Although students in the control group have improved to a certain extent, the improvement may not be as significant as that in the experimental group due to the lack of key links such as video playback, self-reflection and peer feedback in the microteaching method.

Hao Yuerong (2018) researched on the model of Chinese national competitive basketball team. Starting in this experiment, 10 primary school fifth grade students were selected from the experimental class and the same number of students from the control class. The experimental class used microteaching method to conduct detailed decomposition and intensive training for basketball shooting techniques, and effectively improved the accuracy of shooting through instant feedback and repeated practice. In contrast, the control class continued to use the usual pedagogy throughout the experiment. After 4 weeks of special training, the evaluation results showed that the students' basketball shooting ability had been significantly improved, which confirmed the positive role of microteaching method in improving the students' basketball shooting skills.

Xia Yu (2021) researched aimed to verify the effectiveness of microteaching in improving students' learning effect by comparing the learning initiative and basketball skill level of students in the experimental group and the control group after using microteaching method in the process of basketball learning. It was assumed that students in the experimental group using microteaching method would significantly improve their initiative and basketball skills in learning basketball compared with students in the control group using traditional teaching methods. Experimental group: 30 students from different classes of the same grade were randomly selected to ensure that the students in the experimental group had the

same basic level of basketball. Control group: The same 30 students, set in parallel with the experimental group, from different classes of the same grade, the basic level of basketball was the same, but did not overlap with the experimental group. According to the experimental results, the advantages of microteaching method in improving students' basketball learning initiative and technology were summarized, and suggestions were put forward to extend this teaching mode to other sports teaching or subject teaching.

In summary, the microteaching method can effectively improve students' basketball skills, had significant improvement in the mastery of basketball skills, movement norms and practical application, which provided a new and effective way. This method helped students to deeply understand and master the essence of basketball skills by real-time video analysis, personalized guidance and repeated practice. Teachers can divide basketball skill tasks into several small tasks, such as dribbling, passing, shooting, so that students can gradually achieve their learning goals. Teachers can organize small tasks into an organic whole, so that students can constantly explore, find and solve problems in practice. Teachers give students feedback in time to help them correct mistakes, evaluate students' skill level, understand students' learning situation and skill level, and provide basis for further teaching. Through the application of microteaching method, students can gain more rich and comprehensive learning experience in basketball skills class and improve their learning effect and skill level.

Chapter 3

Research Methodology

The method of this research was developed through microteaching method. This research was divided into 2 phases: 1) to use microteaching method to improve basketball technical ability for undergraduate students and 2) to compare students' basketball technical ability through the implementation based on microteaching method. The contents included the following procedures:

- 1. The population/ The sample group
- 2. Research instruments
- 3. Data collection
- 4. Data analysis

The Population/ The Sample Group

Population

There are 60 freshmen students, majoring in civil engineering at Qingdao Agricultural University, in the second semester of the academic year 2023. Which were divided into two classes with 30 students in each class. (There was mixed ability in each class: high level, medium level and low level.)

The Sample Group

Through a random cluster sampling method, there were 30 freshmen students, majoring in civil engineering at Qingdao Agricultural University, with class 1 in the second semester of the academic year 2023.

Research Instrument

Using microteaching method to improve basketball technical ability for undergraduate students. The research instrument were as follows:

1. A Lesson Plan Based on Microteaching Method

The researcher developed microteaching method course and factors affecting basketball technical ability. Apply the teaching mode based on microteaching method to enhance students' basketball technology in university PE. This study focused solely on the basketball skills training for freshmen majoring in civil engineering. The course was divided into three units, totaling 18 hours:

- 1.1 Study guidelines for microteaching method from many academics: Hamad, A. Q. & Saud, L. M. (2015); Huang Zhihong (2017); Chen Song & Chen Feng (2018); Ji Rongrong (2020); and Wang Hao (2022) design detail in the course.
- 1.2 Create 3 lesson plans on dribbling ability, passing ability and shooting ability, totaling 18 hours. By designing lesson plan using microteaching method, each lesson plan specifies the details of the topics as follows: 1) Preparing teaching materials in advance, 2) Conducting role simulation, 3) Recording by camera, and 4) Replaying and observing. 5) Feedback and evaluation. According to the project teaching theory as follows:

Step 1: Preparing teaching materials in advance

In the microteaching method, the preparation in advance is not only the initial stage, but also a very crucial step. The preparation of microteaching includes two aspects: making plans and selecting materials. In this stage of teaching, teachers need to clearly set teaching objectives and contents, carefully design teaching plans, and prepare the necessary teaching resources and tools. This requires teachers to choose appropriate teaching methods according to the knowledge content of the subject they teach. In addition, teachers also need to have a deep understanding of students' academic background, learning habits and learning needs, so that they can develop teaching strategies that are more in line with students' actual needs.

Step 2: Conducting role simulation

In the process of role playing, the teacher will teach according to the pre-set teaching plan and imitate the real teaching environment. During this period, students are mainly guided to participate in the classroom, and experience the process of knowledge generation, the selection and application of learning methods through the perception of the situation. In this teaching stage, teachers need to pay close attention to their teaching methods, the teaching language and the teaching strategy to achieve the natural flow and effectiveness in the teaching process. Through role-playing, students can understand the teaching methods and the characteristics of the content taught by the teacher in the classroom so as to have a deeper understanding of what they have learned and improve their interests and enthusiasm in learning. In addition, role-playing teaching can also invite other teachers or students to play the role of students, which can more accurately simulate the real teaching scene.

Step 3: Recording by camera

In the microteaching method, video recording is regarded as one of the key steps. Video recordings can be used as objective evidence of the student's learning process and help deepen the understanding of the teaching contents. In this teaching stage, teachers need to use professional camera equipment or recording tools to record the whole teaching process in detail. Video recording includes several steps such as on-site shooting, video recording and editing. The video recording is designed to preserve the teacher's teaching contents for subsequent review, observation and in-depth analysis. When recording the camera, the configuration and angle of the camera equipment must be carefully considered to ensure clear and accurate recording.

Step 4: Replaying and observing

In microteaching, replay observation is considered as another key step. Through playback observation, students can obtain real and comprehensive learning information. In the stage of teaching, teachers have the responsibility to watch their own or others' teaching videos in order to have a deep understanding of their own teaching behavior, teaching language, teaching methods and other aspects of the problems and shortcomings. Through retrospective observation of the teaching process, teachers can evaluate their own teaching methods more objectively and identify their strengths and weaknesses in teaching so as to provide valuable references for future teaching feedback and optimization.

Step 5: Feedback and evaluation

The final step in microteaching is feedback assessment. In this teaching stage, teachers are responsible for in-depth thinking and evaluation of their teaching methods, summarizing the teaching experience and lessons, and formulating corresponding improvement strategies, improving the quality and level of their education. In addition, teachers can also invite other teachers or experts to evaluate and give suggestions on teaching process so as to have a more comprehensive and objective understanding of teaching strengths and weaknesses.

1.3 The completed lesson plan was presented to the thesis advisor to verify the suitability and consistency of the content. Alignment of objectives with learning activities and the possibility of activities. Then improve the method according to the suggestion.

- 1.4 Submit the revised curriculum activity plans to 3 experts for review to assess the correctness and completion of factors that can improve basketball technical ability for undergraduate students by the Index of Item Objective Congruence (IOC).
 - +1 There is an opinion that "consistent to relevant."
 - O There is an opinion that "Not sure it consistent to relevant."
 - -1 There is an opinion that "Inconsistent with relevant."

Each lesson plan had an IOC consistency index greater than or equal to 0.50, so it was considered suitable for use in research. The result of the index of Item Objective Congruence (IOC) analysis of this lesson plan has an IOC=1.00 for all questions. And using microteaching method to assess the suitability of the lesson plans, the result found it is the most suitable for 1) Basketball dribbling; 2) Basketball passing; and 3) Basketball shooting.

- 1.5 Take the lesson plans received from the review, and improve them according to the suggestions of experts to achieve more accuracy before actually applying it to the sample group.
 - 2. Achievement of basketball technical ability

Basketball technical ability by using microteaching method to improve basketball skill of undergraduate students: 1) Basketball dribbling; 2) Basketball passing; and 3) Basketball shooting. The steps in creating and determining the quality of achievement test are as follows:

2.1 Basketball technical ability performance assessment

The procedures for creating the performance assessment, which is a practical test 3 contents, 10 items, with steps to create and find quality as follows:

- 2.1.1 Content analysis, competence and learning objectives consistent with the lesson plan on basketball dribbling ability: 1) Dribbling posture and skills, 2) Movements of dribbling, 3) Dribble changes and combination, and 4) Dribble with offense and defense. Basketball passing ability: 1) Direct pass, 2) Slant pass, and 3) Backhand pass. And basketball shooting ability: 1) Basic shooting skills, 2) Shooting posture and power control, and 3) Jump shot and layup technique.
- 2.1.2 Study the theory, principles, and methods of performance assessment from documents, textbooks, and related research.
- 2.1.3 Determine scoring criteria for performance assessment by authentic assessments rating on 3 scales, as follow in Table 3.1-3.3

Table 3.1 Scoring criteria for basketball dribbling ability

A	Criterial of Score		
Assessment Item	3=Good	2=Fair	1=Poor
1. Dribbling posture and skills: 1) dribbling the ball and controlling the power of the ball 2) dribbling the ball, a steady rhythm and maintaining the stability of the ball 3) using finger and arm coordination movement, while dribbling. 4) when dribbling, eyes focused on the front, not on the ball. 5) when the ball bounces, the palm moves slightly in the direction of the ball's bounce to maintain stability.	Students are most able to dribble the ball correctly and completely.	Students are moderate able to dribble the ball.	Students are little able to dribble the ball.
2. Movements of dribbling: 1) Alternating hands dribbling: touch the ball with hands in turns to help maintain the bounce and control the direction of the ball. 2) One-handed dribbling: One- handed dribbling to help maintain the bounce and control the direction of the ball 3) Changing hands dribbling: the act of moving the ball from one hand to the other it helps students change the direction and rhythm of dribble.	Students are most able to movements of dribbling the ball correctly and completely.	Students are moderate able to movements of dribbling the ball.	Students are little able to movements of dribbling the ball.

Table 3.1 (Continue)

	Criterial of Score		
Assessment Item	3=Good	2=Fair	1=Poor
3. Dribble changes and	Students are	Students are	Students are
combinations:	most able to	moderate	little able to
1) Dribbling change: changing	dribble	able to	dribble
the rhythm and mode of	changes and	dribble	changes and
dribbling by (1) Moving dribble,	combinations	changes and	combinations
moving forward, backward, side to	the ball	combinations	the ball.
side, and so on. It can help	correctly and	the ball.	
students quickly adjust position	completely.		
during the game, maintain the			
right distance from the opponent.			
(2) Changing direction dribble by			
adjusting the hand and body, it			
helps students break through the			
opponent's defense and create			
offensive opportunities.			
2) dribble combination: the			
combination of multiple dribble			
movements together to form a			
coherent dribble sequence, it can			
improve the fluency and variety of			
dribble by (1) Dribbling and passing			
combination: the sudden passing of			
the ball to a teammate. (2)			
Continuous change of the direction:			
the use of multiple consecutive			
change of direction to break			
through the opponent's defense.			

Table 3.1 (Continue)

According to the tree	Criterial of Score		
Assessment Item	3=Good	2=Fair	1=Poor
4. Dribble with offense and	Students are	Students are	Students are
defense:	most able to	moderate	little able to
1) offensive dribble: the use of	dribble with	able to	dribble with
dribbling techniques to break	offense and	dribble with	offense and
through the opponent's defense	defense the	offense and	defense the
and create offensive	ball correctly	defense the	ball.
opportunities in the process of	and	ball.	
attacking by (1) Dribble	completely.		
breakthrough the opponent's			
defense line through continuous			
dribble movement and change			
direction skills to gain offensive			
space. (2) Dribble pass: the player			
needs to pass the ball to the			
appropriate teammate in time by			
accurate passing and stable			
dribble.			
2) defensive dribble: the use			
of dribbling technique in the			
process of defense to interfere with			
the opponent's attack and			
compete for the ball. they can			
destroy the opponent's offensive			
rhythm by fast dribble turn action			
and compete for possession of			
the ball.			

Table 3.2 Scoring criteria for basketball passing ability

Assessment		Criterial of Score	
ltem	3=Good	2=Fair	1=Poor
1. Basketball direct pass skill	Students were able to pass basketball directly, straight and long-distance pass to teammates is quickly and accurately.	Students were able to pass basketball directly, straight and long-distance pass to teammates is quickly, but little accuracy.	Students were able to pass basketball directly, straight and long-distance pass to teammates is slow and inaccurate.
2. Basketball slant pass skill	Students were able to pass the ball diagonally through the opponent's defense and teammates can catch the ball accurately.	Students were able to pass the ball diagonally through the opponent's defense, but teammates can catch the ball little accurately.	Students were able to pass the ball diagonally through the opponent defense, but teammates cannot catch the ball.
3. Basketball backhand pass skill.	Students were able to place the ball to the side of his body, and use the backhand motion to pass the ball to the target teammate accurately.	Students were able to place the ball to the side of his body, and use the backhand motion to pass the ball to the target teammate little accurately.	Students were able to place the ball to the side of his body, and use the backhand motion to pass the bato the target teammat inaccurately.

Assessment		Criterial of Score		
ltem	3=Good	2=Fair	1=Poor	
1. Basic	Steady ball control,	Moderately steady	Little steady ball	
shooting skills	quick basket	ball control, quick	control, quick	
	selection, coordinated	basket selection,	basket selection,	
	and rotated shooting.	coordinated and	coordinated and	
		rotated shooting.	rotated shooting.	
2. Shooting	Accurate position and	Moderately	Inaccurate position	
posture and	strength.	accurate position	and strength.	
power control		and strength.		
3. Jump shot	Accurate jump shot	Moderately	Inaccurate jump	
and layup	and layup skills.	accurate jump shot	shot and layup	
technique		and layup skills.	skills.	

Table 3.3 Scoring criteria for basketball shooting

According to Table 3.1-3.3, the researcher analyzed documents and theory deeply and used the criteria to consider the relevant characteristics.

- 2.1.4 Present the formulated assessment standards to the thesis supervisor, verify their precision, and implement changes.
- 2.1.5 Submit basketball technical ability performance assessment criteria created by three experts for measurement and inspection. The Experts check the content validity and calculate the Index of Item Objective Congruence (IOC). The consistency indicator of each evaluation content is greater than or equal to 0.50 and is considered suitable for research. The result of the IOC at 1.00 for all assessment items.
- 2.1.6 Improve and revise the performance assessment that have been verified by experts. Then take it to try out with students who were non-sample for 30 students to analyze the quality of confidence values in performance assessment by analysis the reliability by Cronbach's Coefficient Alpha method at 0.74.

2.2 Multiple-choice

2.2.1 Study the theory about how to create multiple choice questions test and created multiple choice questions test for 3 lesson plans about the basic knowledge of each content were 1) basketball dribbling ability; 2) basketball passing ability; and 3) basketball shooting ability were totally 26 items to measure

the achievement of basketball technical ability. The scoring criteria 1 point for correct answer and 0 point for wrong answer.

- 2.2.2 Suggest the multiple-choice test to the advisor and check for accuracy and make improvements as suggested.
- 2.2.3 The multiple-choice test is handed over to 3 experts for measurement and evaluation. Check the content validity and calculated the Index of Item Objective Congruence (IOC). The criteria for judging the consistency of the test are as follows:
 - +1. There is an opinion that "consistent to objective of learning."
 - 0. There is an opinion that "Not sure it consistent to objective

of learning"

learning. "

-1. There is an opinion that "Inconsistent with objective of

The IOC consistency index for each question is greater than or equal to 0.50 and is therefore considered suitable for study. Item Objective Congruence Index (IOC) has a result of 1.00 for all questions.

2.2.4 Improve and revise items test that have been verified by experts. Then took it to try out with students who were not a sample group for 30 students to calculate the quality of the test. The difficulty value (p) was selected in the range 0.20–0.80 and discrimination power (r) was selected in the range 0.20–1.00 (Landis, J. R., & Koch, G. G. 1977). The results of the quality analysis of the questions found that there were 26 questions, difficulty value (p), discrimination power (r), and reliability: 1) Basketball dribbling ability, there were 9 questions (p=0.27-0.77, r=0.20-0.47), 2) Basketball passing ability, there were 8 questions (p=0.37-0.77, r=0.20-0.47), and method, the reliability (KR-20) at 0.78.

Data Collection

The data collection was as follows:

- 1. Data collection and verification for test instrument:
- 1.1 Coordinate with 3 professional scholar experts dispense official document from Bansomdejchaopraya Rajabhat University professional scholar experts and give information about data collection process and research tools: instructional model and checklist form about quality of instructional model for consideration (Index of Objective Consistency: IOC).
- 1.2 Collect data from 3 professional scholar experts and analysis data for consideration (Index of Objective Consistency: IOC).

- 2. Data collection and validation for research work.
- 2.1 Pertinent scholarly investigation: Accumulate data pertinent to the literature to ascertain the duration of the research: the official study was scheduled in June 2024, with data gathering occurring post the conclusion of the experimental research.
- 2.2 Pre-teaching and post-teaching examination: This research was experimental research according to One Group Pretest Posttest Design as follow Table 3.4

Table 3.4 Experimental design

Group	Pretest	Experimental	Posttest
R	O_1	X	O ₂

The meaning of the symbols used in the experimental design

R means Random Sampling

X means Experimental

O₁ means Pretest

O₂ means Posttest

This research the data collection was as follows:

- 1. Contact with the graduate school Bansomdejchaopraya Rajabhat University to request an official letter for an expert to inspect research equipment.
- 2. Organize a test before the experiment to understand students how to study student role in the process of evaluation and the benefits will be gained from the test during the experiment.
- 3. Test before teaching (Pretest) with 30 students majoring in civil engineering from Qingdao Agricultural University, Qingdao City, China, which was a sample group, and checked the score record in order to analyze the data.
- 4. The experiment with the sample group to use the lesson plan of basketball technical ability course based on microteaching method. The teaching time was from May to June in 2024, totaling 18 hours in Table 3.5.

Table 3.5 Basketball technical ability based on microteaching method

Contents	Activity Learning
	- Introduction
- Basketball	- Learning content
Dribbling ability	- Learning activity: Microteaching method
- Basketball	Step 1: Preparing teaching materials in advance
Passing ability	Step 2: Conducting role simulation
- Basketball	Step 3: Recording by camera
Shooting ability	Step 4: Replaying and observing
	Step 5: Feedback and evaluation

5. Test again after teaching (Posttest) with 30 students majoring in civil engineering at Qingdao Agriculture University, Qingdao City, China, which was a sample group, and check the score record in order to analyze the data.

Data Analysis

The researchers analyzed the data by program computer, the order in which the data were analyzed was as follows:

- 1. Quantitative data were analyzed through descriptive statistics; means, and standard deviation.
- 2. Quantitative data were analyzed through inferential statistics; then calculate the different score of volleyball technical ability before and after using microteaching method were analyzed through T-test for dependent samples.

Chapter 4

Results of Analysis

The research "Using Microteaching Method to Improve Basketball Technical Ability for Undergraduate students" aims to improve basketball technical ability for undergraduates by using microteaching method. The objectives consist of two parts:

1) To use microteaching method to improve basketball technical ability for Undergraduate students and 2) To compare students' basketball technical ability before and after the implementation based on microteaching method. The data analysis results are as follows:

- 1. Symbol and Abbreviations
- 2. Results of data analysis

The details are as follows:

Symbol and Abbreviations

Represent data analysis results based on symbols and semantics. The details are as follows:

- n means the number of students
- \bar{X} means the average
- SD. means the standard deviation.
- D means the difference in scores between before and after learning.
- df means degree of freedom
- t means the statistical value to be used in the t-test
- p means probability value
- ** means statistical significance at the level .01

Results of Data Analysis

The study used microteaching method to improve basketball technical ability for undergraduate students. The researchers conducted the research in the following order:

Part 1: Using microteaching method to improve basketball technical ability for undergraduate students

With the development of modern educational technology, microteaching model is applied more and more widely in physical education teaching. Especially in basketball teaching, microteaching method, with its unique characteristics and advantages, plays an important role in improving college students' basketball technical ability. The course was divided into three units, totaling 18 hours: Unit 1: Basketball dribbling; Unit 2: Basketball passing; Unit 3: Basketball shooting. Study guidelines for microteaching method from many academics: Hamad, A. Q. & Saud, L. M. (2015); Huang Zhihong (2017); Chen Song & Chen Feng (2018); Ji Rongrong (2020); and Wang Hao (2022). And synthesized for 5 steps were as follows:

Step 1: Preparing teaching materials in advance, In the microteaching method, the preparation in advance is not only its initial stage, but also a very crucial step. The preparation of microteaching includes two aspects: making plans and selecting materials. In this stage of teaching, teachers need to clearly set teaching objectives and contents, carefully design teaching plans, and prepare the necessary teaching resources and tools. This requires teachers to choose appropriate teaching methods according to the knowledge content of the subject they teach. In addition, teachers also need to have a deep understanding of students' academic background, learning habits and learning needs, so that they can develop teaching strategies that are more in line with students' actual needs. It's integrated from the first step of Hamad, A. Q. & Saud, L. M. (2015), Huang Zhihong (2017), Chen Song & Chen Feng (2018), Ji Rongrong (2020), and Wang Hao (2022).

Step 2: Conducting role simulation, In the process of role playing, the teacher will teach according to the pre-set teaching plan and imitate the real teaching environment. During this period, students are mainly guided to participate in the classroom, and experience the process of knowledge generation, the selection and application of learning methods through the perception of the situation. In this teaching stage, teachers need to pay close attention to their teaching methods, the teaching language used and the teaching strategy adopted to achieve the natural flow and effectiveness in the teaching process. Through role-playing, students can understand the teaching methods and the characteristics of the content taught by the teacher in the classroom, so as to have a deeper understanding of what they have learned and improve their interests and enthusiasm in learning. In addition, role-playing teaching can also invite other teachers or students to play the role of students, which can more accurately simulate the real teaching scene. It's integrated

from the second step of Hamad, A. Q. and Saud, L. M. (2015), Huang Zhihong (2017), Chen Song & Chen Feng (2018), and Wang Hao (2022).

Step 3: Recording by camera, In the microteaching method, video recording is regarded as one of the key steps. Video recordings can be used as objective evidence of the student's learning process and help deepen the understanding of the teaching contents. In this teaching stage, teachers need to use professional camera equipment or recording tools to record the whole teaching process in detail. Video recording includes several steps, such as on-site shooting, video recording and editing. The video recording is designed to preserve the teacher's teaching contents for subsequent review, observation and in-depth analysis. When recording the camera, the configuration and angle of the camera equipment must be carefully considered to ensure clear and accurate recording. It's integrated from the third step of Hamad, A. Q. and Saud, L. M. (2015), Huang Zhihong (2017), Chen Song & Chen Feng (2018), Ji Rongrong (2020), and Wang Hao (2022).

Step 4: Replaying and observing, In microteaching, replay observation is considered as another key step. Through playback observation, students can obtain real and comprehensive learning information. In this stage of teaching, teachers have the responsibility to watch their own or others' teaching videos in order to have a deep understanding of their own teaching behavior, the use of teaching language, teaching methods and other aspects of the problems and shortcomings. Through retrospective observation of the teaching process, teachers can evaluate their own teaching methods more objectively and identify their strengths and weaknesses in teaching, so as to provide valuable references for future teaching feedback and optimization. It's integrated from the fourth step of Hamad, A. Q. & Saud, L. M. (2015), Huang Zhihong (2017), Chen Song & Chen Feng (2018), and Ji Rongrong (2020).

Step 5: Feedback and evaluation, The final step in microteaching is feedback assessment. In this teaching stage, teachers are responsible for in-depth thinking and evaluation of their teaching methods, summarizing the teaching experience and lessons, and formulating corresponding improvement strategies, aiming at improving the quality and level of their education. In addition, teachers can also invite other teachers or experts to evaluate and give suggestions on teaching process so as to have a more comprehensive and objective understanding of teaching strengths and weaknesses. It's integrated from the fifth step of Hamad, A. Q. & Saud, L. M. (2015), Huang Zhihong (2017), Chen Song & Chen Feng (2018), Ji Rongrong (2020), and Wang Hao (2022).

Additionally, based on the details of microteaching method, the investigator carried out a study involving 30 students of varying abilities (strong, moderate, and weak) in the first class of undergraduates, utilizing random group sampling.

Secondly, the researcher created three lesson plans with elements: 1) Content, 2) Objective, 3) Main point/Concept, 4) Introduction, 5) Learning contents, 6) Learning activity, 7) Measurement and evaluation, and 8) Instructional media were as follows:

Introduction (20 minutes)

The teacher presented the educational material and goals of the lesson, emphasized the significance and learning objectives of basketball technical ability. It's important that learners have a clear understanding of the teaching objectives to achieve the expected teaching effect. Students can distinctly grasp the educational goals to realize the anticipated instructional impact.

Learning content and Learning activity: Using microteaching method with 5 steps (5 hours and 40 minutes)

The implementation of microteaching methos aims to enhance students' learning motivation and comprehensive abilities, strive for teaching integration, and achieve high-quality teaching objectives. By implementing microteaching method, teachers fully mobilize students' learning initiative.

Step 1: Preparing teaching materials in advance

At this stage, the teacher needs to carefully prepare all the materials related to the teaching of basketball skills. This includes, but is not limited to:

- 1. Technical action demonstration video: Collect or produce high quality basketball technical action video, such as shooting, dribbling, passing, defense, etc., so that students can observe the correct movement posture and technique.
- 2. Technical instructions: Prepare detailed analysis of technical points, including action steps, key points, common errors and correction methods, etc., to help students combine theory with practice.
- 3. Exercise schedule: Design a staged exercise plan to ensure that students can effectively improve at different skill levels.
- 4. Teaching PPT or whiteboard materials: for classroom explanation, through charts, diagrams and other forms of visual display of technical points.

Step 2: Conducting role simulation

Role simulation is a key link in microteaching. Teachers can organize students into groups to simulate different roles and scenes in basketball games:

- 1. Role assignment: Based on skill level and position preference, students are assigned to play the roles of point guard, shooting guard, small forward, power forward and center.
- 2. Scenario simulation: Design a variety of game scenarios, such as fast attack, positional warfare, defensive rotation, etc., so that students can practice the skills learned in the simulation.
- 3. Interactive teaching: Teachers can participate in simulations as coaches or referees, guide students' technical movements in a timely manner, and encourage them to learn and communicate with each other.

Step 3: Recording by camera

Use cameras or mobile phones and other devices to record students' practice and simulated competitions. The key to this step is:

- 1. Multi-angle shooting: Students' technical movements from different angles as much as possible for subsequent comprehensive observation and analysis.
- 2. Videl quality: Make sure the video quality is clear so that details are clearly visible.
- 3. Synchronous recording: If conditions permit, the sound of the scene can be recorded, including teacher guidance and communication between students, so that the context can be understood when reviewing.

Step 4: Replaying and observing

After the recording is completed, the teacher and the students play back the video together for careful observation and analysis:

- 1. Self-observation: Let students watch their own videos and reflect on the shortcomings of technical movements.
- 2. Group discussion: A group discussion is organized to encourage students to share their observations and feelings and jointly point out the problems.
- 3. Technical analysis: The teacher analyzes the students' technical movements one by one and points out the areas that need to be improved.

Step 5: Feedback and evaluation

Based on the results of observation and discussion, the teacher gives the students specific feedback and evaluation:

- 1. Personalized guidance: Provide personalized improvement suggestions and guidance programs according to each student's technical characteristics and existing problems.
- 2. Positive motivation: Affirm students' efforts and progress, and enhance their self-confidence and motivation.

- 3. Comprehensive evaluation: A comprehensive evaluation of the overall performance of the student points out the strengths and direction that needs to continue to work.
- 4. Follow-up plan: According to the feedback and evaluation results of students, adjust the follow-up practice plan and teaching content to enhance the continuity and pertinence of teaching effect.

Through the cyclic implementation of the above five teaching steps, teachers can effectively improve students' basketball skills and promote their all-round development.

Thirdly, after completing 3 lesson plans: 1) basketball dribbling ability, 2) basketball passing ability, and 3) basketball shooting ability were presented to the thesis advisor to verify the suitability and consistency of the contents. According to the suggestion and lesson plans from 3 experts to consider the Index of Item Objective Congruency (IOC). The data analysis was an evaluation of the quality of the lesson plan according to the microteaching method to improve basketball technical ability for undergraduate students. The results were shown in Table 4.1- 4.5.

Table 4.1 Assessment of the quality of basketball dribbling ability lesson plan by experts

Assessment Item	x	SD.	Interpretation		
1. The content is related to the learning objectives.	5.00	0.00	Most suitable		
2. The learning objectives are consistent with the	5.00	0.00	Most suitable		
content.					
3. The learning processes are related to	5.00	0.00	Most suitable		
microteaching method.					
4. The Learning activities are related to	5.00	0.00	Most suitable		
microteaching method.					
5. The assignment of basketball dribbling ability	5.00	0.00	Most suitable		
related to microteaching method.					
6 .There are various assessments related with learning	5.00	0.00	Most suitable		
objectives.					
7. The assessment list related with learning objectives.		0.00	Most suitable		
Total	5.00	0.00	Most suitable		

According to Table 4.1 the assessment of the quality of basketball dribbling ability lesson plan by experts overall, the suitability of the research objectives had the most suitable (\overline{X} =5.00, SD.=0.00). When considering the assessment item, it was found that it was the most suitable (\overline{X} =5.00, SD.=0.00) for every assessment item and could be used for teaching.

Table 4.2 Assessment of the quality of basketball passing ability lesson plan by experts

Assessment Item	x	SD.	Interpretation
1. The content is related to the learning	5.00	0.00	Most suitable
2. The learning objectives are consistent with the content.	5.00	0.00	Most suitable
3. The learning processes are related to microteaching method.	5.00	0.00	Most suitable
4. The learning activities are related to microteaching method.	5.00	0.00	Most suitable
5. The assignment of basketball passing ability related to microteaching method.	5.00	0.00	Most suitable
6. There are various assessments related with learning objectives.	5.00	0.00	Most suitable
7. The assessment list related with learning objectives.		0.00	Most suitable
Total	5.00	0.00	Most suitable

According to Table 4.2 the assessment of the quality of basketball passing ability lesson plan by experts overall, the suitability of the research objectives had the most suitable (\overline{X} =5.00, SD.=0.00). When considering the assessment item, it was found that it was the most suitable (\overline{X} =5.00, SD.=0.00) for every assessment item and could be used for teaching.

Table 4.3 Assessment of the quality of basketball shooting ability lesson plan by Experts

Assessment Item	x	SD.	Interpretation
1. The content is related to the learning	5.00	0.00	Most suitable
2. The learning objectives are consistent with the content.	5.00	0.00	Most suitable
3. The learning processes are related to microteaching method.	5.00	0.00	Most suitable
4. The learning activities are related to microteaching method.	5.00	0.00	Most suitable
5. The assignment of basketball shooting related to microteaching method.	5.00	0.00	Most suitable
6. There are various assessments related with learning objectives.	5.00	0.00	Most suitable
7. The assessment list related with learning objectives.	5.00	0.00	Most suitable
Total	5.00	0.00	Most suitable

According to Table 4.3 the assessment of the quality of basketball shooting ability lesson plan by experts overall, the suitability of the research objectives had the most suitable (\overline{X} =5.00, SD.=0.00). When considering the assessment item, it was found that it was the most suitable (\overline{X} =5.00, SD.=0.00) for every assessment item and could be used for teaching.

Fourthly, the researcher would take the 3 lesson plans: 1) basketball dribbling ability, 2) basketball passing ability, and 3) basketball shooting ability, which based on microteaching method to improve basketball technical ability with 30 students, would be chosen as the sample group to analyze the data by using average statistics and standard deviation. The result of learning achievement score before and after learning are shown in Table 4.4.

Table 4.4 Basketball technical ability score before and after the project based on microteaching method for undergraduate students

Student	Pretest	Posttest	Difference	Student	Pretest	Posttest	Difference
ID	(56)	(56)	Scores (D)	ID	(56)	(56)	Scores (D)
1	24	42	18	16	21	43	22
2	24	41	17	17	31	47	16
3	29	44	15	18	35	52	17
4	28	47	19	19	23	46	23
5	33	49	16	20	27	45	18
6	28	46	18	21	35	49	14
7	25	45	20	22	38	51	13
8	36	52	16	23	31	47	16
9	28	44	16	24	20	43	23
10	27	42	15	25	37	50	13
11	30	45	15	26	21	43	22
12	20	39	19	27	27	47	20
13	32	47	15	28	25	43	18
14	24	44	20	29	25	45	20
15	22	40	18	30	27	44	17
				X	27.77	45.40	17.63
				SD.	5.16	3.34	2.76

According to table 4.4, basketball technical ability score before and after the project based on microteaching method for undergraduate students, the average score before learning was 27.77, the average score after learning was 45.40. The after learning score was found to be higher than the before learning score. It shows that teaching based on microteaching method to improve basketball technical ability for undergraduate students.

Part 2: The comparison of students' basketball technical ability before and after the implementation based on microteaching method.

The researcher implemented basketball technical ability based on microteaching method with 30 students. The comparison of students' basketball technical ability before and after learning to analyze the data using average statistics, standard deviation, and t-test for dependent samples which the data analysis results are shown in table 4.5

Table 4.5 The comparison of students' basketball technical ability before and after implementation based on microteaching method

							n=30
Basketball technical ability	Testing	Full score	x	SD.	df	t	р
Basketball	pretest	56	11.07	3.37	- 20	16.60**	0.00
Dribbling skill	posttest	56	17.10	1.99	- 29		0.00
Basketball	pretest	56	8.73	2.49	- 20	17.77**	0.00
Passing skill	posttest	56	14.17	1.42	- 29		0.00
Basketball	pretest	56	7.97	1.38	- 20	20.07**	0.00
Shooting skill	posttest	56	14.13	1.14	- 29	32.07**	0.00
Total	pretest	56	27.77	5.16	- 20	24.00**	0.00
	posttest	56	45.40	3.34	29	29 34.99**	

^{**}Statistically significant at the level .01(p≤.01)

According to Table 4.5, the comparison of students' basketball technical ability before and after implementation based on microteaching method. The results found that basketball technical ability score of students after learning higher than before learning statistically significant at the .01 level. When considering the results of data analysis classified by contents: 1) basketball dribbling ability, 2) basketball passing ability, and 3) basketball shooting ability. The results found that the basketball technical ability score of students after learning higher than before learning statistically significant at the level .01 for all contents. Therefore, using microteaching method could improve students' basketball technical ability.

Chapter 5

Conclusion Discussion and Recommendations

The purpose of this research was 1) to use microteaching method to improve basketball technical ability for undergraduate students and 2) to compare students' basketball technical ability through the implementation based on microteaching method. Through cluster random sampling, 30 freshmen students, majoring in civil engineering at Qingdao Agricultural University, China, whose would be chosen as the sample group. The instruments of this research are as follows:

- 1. Study basketball technical standards developed by Qingdao Agricultural University. Curriculum Standards for basketball technology was used as a guide for developing a learning program through learning objectives, content, guidelines for organizing measurement and assessment of learning activities, and teacher guidance. In addition, study the concepts, theories related to the theory from documents, textbooks, and related research to create a learning management plan.
- 2. Develop 3 lesson plans using microteaching method to improve basketball technical ability: 1) basketball dribbling, 2) basketball passing, and 3) basketball shooting, total 18 hours. Each lesson plan specifies the details of the elements: 1) Content, 2) Objective, 3) Main point/Concept, 4) Introduction, 5) Learning contents, 6) Learning activity, 7) Measurement and evaluation, and 8) Instructional media and designed leaning schedule for teaching. The researcher has studied the documents and related research about the microteaching method and studied information from many researchers: Hamad, A. Q. & Saud, L. M. (2015), Huang Zhihong (2017), Chen Song & Chen Feng (2018), Ji Rongrong (2020), and Wang Hao (2022). And synthesize into 5 steps used for developing lesson plan: (1) Preparing teaching materials in advance. (2) Conducting role simulation. (3) Recording by camera. (4) Replaying and observing. (5) Feedback and evaluation.
- 3. Create research instrument to evaluate basketball technical ability: 1) performance assessment was 10 assessment items, determine scoring criteria for 3 scales, and 2) multiple-choice were totally 26 questions, the scoring criteria 1 point for correct answer and 0 point for wrong answer.
- 4. After developing the lesson plans using microteaching method and research instrument, take them to 3 experts to consider. By the Index of Item Objective Congruency (IOC) and took the research instrument to try out with 30 students who were not a sample group and calculate the quality of the multiple

choice: difficulty value (p) and discrimination power (r) and the reliability of Kuder Richardson's method (KR-20). In addition, calculate the quality of the performance assessment by analysis the reliability by Cronbach's Coefficient Alpha method.

5. Gather data experimental research one group Pretest-Posttest design and analyzed through statistics; means (\overline{X}), standard deviation (SD.) and t-test for dependent samples.

Conclusion

Using Microteaching Method to Improve Basketball Technical Ability for Undergraduate students. The researchers presented the research results as follow:

- 1. Using microteaching method to improve basketball technical ability for undergraduate students, the researcher has studied guidelines for microteaching method from many academics and synthesized for 5 steps to improve basketball technical ability: 1) Preparing teaching materials in advance, 2) Conducting role simulation, 3) Recording by camera, 4) Replaying and observing, and 5) Feedback and evaluation. The data analyzed the quality of the lesson plan according to 5 steps of microteaching method by 3 experts, and the results are shown overall, the suitability of the research objectives is the most suitable. After 30 students have learned in 5 steps the average score before learning was 27.77, the average score after learning was 45.40. The after learning score was found to be higher than the before learning score. Therefore, using microteaching method, the students' basketball technical ability was improved obviously.
- 2. The comparison of students' basketball technical ability before and after implementation based on microteaching method. The results found that, the results found that basketball technical ability score of students after learning higher than before learning is statistically significant at the .01 level. When considering the results of data analysis classified by contents: 1) basketball dribbling ability, 2) basketball passing ability, and 3) basketball shooting ability. The results found that, the basketball technical ability score of students after learning higher than before learning statistically significant at the level .01 for all contents. Therefore, using microteaching method could improve students' basketball technical ability.

Discussions

Using microteaching method to improve basketball technical ability for undergraduate students and compare students' basketball technical ability before and after the implementation based on microteaching method. The research could be discussed as follows:

1. Using microteaching method to improve basketball technical ability before and after learning, the average score before learning was 27.77 and the average score after learning was 45.40. The after learning score was found to be higher than the before learning score. Therefore, using microteaching method, the students' basketball technical ability was improved obviously. It's because microteaching method was regarded as an efficient and practical way to train teachers in their teaching skills. Microteaching skills training system was a complete and flexible teaching system platform based on human-machine interactive model. The researcher has taken the views of the academic importance of many academics and integrated them to develop 3 lesson plans clearer and synthesize for learning 5 steps: 1) Preparing teaching materials in advance, 2) Conducting role simulation, 3) Recording by camera, 4) Replaying and observing and 5) Feedback and evaluation. Harris, J. & Jones, M. (2014) said that, microteaching could help teachers to plan and prepare their lessons more effectively by identifying potential challenges and areas for improvement. The microteaching process typically involved several stages, including planning, teaching, and reflection. During the planning stage, teachers prepared a lesson plan and identified the specific teaching skills they want to practice. In the teaching stage, they delivered the lesson to a small group of students in a simulated class setting, while being observed by their peers or mentors. As teachers gained experience with microteaching, they developed a deeper understanding of their own teaching style and strengths. After teaching a lesson, teachers were encouraged to reflect on students' performance by considering areas where they succeeded and where they could have improved. Consistent with Tan Chenhong & Tan Gonghao (2017) said that, microteaching method are use of modern audiovisual technology and recording equipment plays a key role in microteaching. These tools allow teachers to record and review their own teaching practices and student skills development, allowing for critical reflection and analysis. Teachers and students can identify areas for improvement accordingly. Huang Zhihong (2017) microteaching method can classify complex teaching skills into simple and tiny single skills according to teaching objectives, so that the teaching objectives are more clear and more specific, and the training is more targeted, which is conducive to students' learning and mastering. For example, in basketball teaching, the basic technical movements such as dribbling, shooting, defensive turning, and fast movement can be broken down and taught to make it easier for students to grasp and understand the gist of each movement. And consistent with Chen Song & Chen Feng (2018) has mentioned, the microteaching method as a kind of teaching method to focus on specific teaching skills through short teaching segments and recording by means of video. Participants could observe, analyze and improve themselves, which was an effective way to improve teaching ability and helped teachers to accurately improve teaching level. Moreover, Zhao Shaoren (2019) microteaching also pays attention to students' selfevaluation and reflection and helps students better understand their shortcomings and progress so as to study and practice harder. Similarly to Xia Yu (2021) said that microteaching pays attention to students' practice and feedback, and teachers can find problems and correct them in time by observing students' practice process. This can help students to correct mistakes faster and improve the accuracy and standardization of technical movements. And consistent with Lin Peiquan (2021) commented that using video or multimedia demonstration, coupled with detailed explanation and explanation, will become a vivid teaching example. In this way, students can see the execution process of each action more clearly so as to better understand and master. Especially after the decomposition of motor skills, the teaching content is simple and easy, and the theme is concentrated, which is conducive to students' repeated practice, in-depth understanding and mastery of the essentials of movement.

2. The comparison of students' basketball technical ability before and after implementation based on microteaching method. The results found that, the results found that basketball technical ability score of students after learning higher than before learning is statistically significant at the .01 level. When considering the results of data analysis classified by contents: 1) basketball dribbling ability, 2) basketball passing ability, and 3) basketball shooting ability. Basketball technical ability score of students after learning higher than before learning statistically significant at the level .01 for all contents. Therefore, using microteaching method could improve students' basketball technical ability. Consistent with Gao Huafeng (2015) This paper aimed to explore the effectiveness of microteaching method in improving junior high school students' basketball skills, this studied 20 students in the experimental group and 20 students in the control group. The experimental group received microteaching, and the key movement exercises were strengthened through subdivision skills, repeated video playback and immediate feedback. The control group followed the

traditional teaching method. The results showed that the students in the experimental group had significant improvement in the mastery of basketball skills, movement norms and practical application, which provided a new and effective way for junior high school basketball teaching. Li Fei (2015) researched on competitive performance of China University Basketball Super League, this study set up an experimental group and a control group, with 15 college students in each group. The experimental group adopted the microteaching method to teach basketball dribbling techniques. This method helped students to deeply understand and master the essence of dribbling through subdivision of dribbling skills, real-time video analysis, personalized guidance and repeated practice. The experimental results showed that the students in the experimental class had made remarkable progress in the practical application of basketball dribbling technology. The technical movements were more proficient, the stability and creativity of dribbling in the game were greatly improved. Lai Feng & Chen Gong (2016) an empirical study on the influence of microteaching method on basketball dribbling ability. The experimental group and the control group, each group of 20 middle school students with similar basketball foundation, with an average age of 15 and a balanced male-female ratio to ensure that there were no significant differences between the two groups under the initial conditions. After using microteaching training, students in the experimental group significantly improved their basketball dribbling ability and significantly improved their performance compared with the pre-test. Although students in the control group have improved to a certain extent, the improvement may not be as significant as that in the experimental group due to the lack of key links such as video playback, selfreflection and peer feedback in the microteaching method. Hao Yuerong (2018) researched on the model of Chinese national competitive basketball team. Starting in this experiment, 10 primary school fifth grade students were selected from the experimental class and the same number of students from the control class. The experimental class used microteaching method to conduct detailed decomposition and intensive training for basketball shooting techniques, and effectively improved the accuracy of shooting through instant feedback and repeated practice. In contrast, the control class continued to use the usual pedagogy throughout the experiment. After 4 weeks of special training, the evaluation results showed that the students' basketball shooting ability had been significantly improved, which confirmed the positive role of microteaching method in improving the students' basketball shooting skills. And consistent with researched Xia Yu (2021) verify the effectiveness of microteaching in improving students' learning effect by comparing the learning

initiative and basketball skill level of students in the experimental group and the control group after using microteaching method in the process of basketball learning. It was assumed that students in the experimental group using microteaching method would significantly improve their initiative and basketball skills in learning basketball compared with students in the control group using traditional teaching methods. Experimental group: 30 students from different classes of the same grade were randomly selected to ensure that the students in the experimental group had the same basic level of basketball.

In summary, the microteaching method can effectively improve students' basketball skills, had significant improvement in the mastery of basketball skills, movement norms and practical application, which provided a new and effective way. This method helped students to deeply understand and master the essence of basketball skills by real-time video analysis, personalized guidance and repeated practice. Teachers can divide basketball skill tasks into several small tasks, such as dribbling, passing, shooting, so that students can gradually achieve their learning goals. Teachers can organize small tasks into an organic whole, so that students can constantly explore, find and solve problems in practice. Teachers give students feedback in time to help them correct mistakes, evaluate students' skill level, understand students' learning situation and skill level, and provide basis for further teaching. Through the application of microteaching method, students can gain more rich and comprehensive learning experience in basketball skills class and improve their learning effect and skill level.

Recommendations

Microteaching method is a teaching method that uses modern audiovisual technology and recording devices to play an important role, allowing teachers to record and monitor their own teaching methods and the development of students' basketball skills. Researchers presented recommendations as follows:

General Recommendation

1. Teachers should prepare supplementary teaching plans for students who lack skills in various areas, such as students who are not stable in dribbling. They can be given special dribbling exercises and have them practice dribbling with different speeds and directions, changing directions, etc. Through targeted training, students can improve their technical level more quickly.

- 2. Divide students into small groups. Teachers should encourage each group of students to help each other strictly and participate in suggesting ways to develop students' basketball skills.
- 3. Teachers should encourage students to practice several times after class and provide students with enough practice time and opportunities in the process of applying microteaching method.
- 4. Video analysis can help students understand technical movements. Teachers should observe and analyze students' technical movements in detail using video analysis technology, so that students can get the shortcomings of their technical movements more clearly.

Suggestions for Future Research

- 1. Combine microteaching method and virtual reality (VR) technology to improve students' basketball technical ability and compare with traditional teaching methods
- 2. Combine big data and artificial intelligence technology to analyze and evaluate basketball movements of students.
- 3. Foster students' competitive awareness and ability to withstand pressure through simulated competition scenarios and adversarial training.
- 4. Development comprehensive basketball technical ability evaluation criteria, including the accuracy, fluency, and practical application of technical movements.
- 5. Using microteaching methods to improve achievement in other practical skills for students at all levels.

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Appendix A List of Specialists and Letters of Specialists Invitation for IOC Verification

List of Specialists and Letters of Specialists Invitation for IOC Verification

- Assistant Professor Dr.Wasan Dueanchaeng
 Ph.D. Program in Program in Educational Measurement and Evaluation
- Assistant Professor Dr.Krongthip Neamthanom
 Ph.D. Program in Research and Statistics in Cognitive Science
- 3. Mrs. Wang Jing Master of PE

Appendix B Official Letter



Ref.No. MHESI 0643.14/160

Bansomdejchaopraya Rajabhat University 1061 Itsaraparb Hirunrujee Thonburi Bangkok 10600

1 May 2023

RE: Invitation to validate research instrument

Dear Assistant Professor Dr. Wasan Dueanchaeng

Mr.Wang Lei is a graduate student in Master of Education Program in Curriculum and Instruction of Bansomdejchaopraya Rajabhat University. He is undertaking research entitled "Using Microteaching Method to improve the basketball competency of Undergraduate Students"

The thesis adversity committee has considered that you are an expert in this topic. Your recommendations would be useful for further improvement of this research instrument.

We respectfully request your assistance in validating a research instrument that is attached to this message. We would be grateful for any help you can provide in this matter. We would like to express our sincere appreciation for your time and expertise. If you have any questions or concerns, please do not hesitate to contact Mr.Wang Lei at ww201051@dingtalk.com

Thank you for considering our request.

Sincerely,

(Dr.Nainapas Injoungjirakit) Vice Dean, For Dean of the Graduate School

Vainapas. I.



Ref.No. MHESI 0643.14/161

Bansomdejchaopraya Rajabhat University 1061 Itsaraparb Hirunrujee Thonburi Bangkok 10600

1 May 2023

RE: Invitation to validate research instrument

Dear Assistant Professor Dr. Krongthip Neamthanom

Mr.Wang Lei is a graduate student in Master of Education Program in Curriculum and Instruction of Bansomdejchaopraya Rajabhat University. He is undertaking research entitled "Using Microteaching Method to improve the basketball competency of Undergraduate Students"

The thesis adversity committee has considered that you are an expert in this topic. Your recommendations would be useful for further improvement of this research instrument.

We respectfully request your assistance in validating a research instrument that is attached to this message. We would be grateful for any help you can provide in this matter. We would like to express our sincere appreciation for your time and expertise. If you have any questions or concerns, please do not hesitate to contact Mr.Wang Lei at ww201051@dingtalk.com

Thank you for considering our request.

Sincerely,

(Dr.Nainapas Injoungjirakit)
Vice Dean, For Dean of the Graduate School

Bansomdejchaopraya Rajabhat University Tel.+662-473-7000 ext. 1814 www.bsru.ac.th



Ref.No. MHESI 0643.14/162

Bansomdejchaopraya Rajabhat University 1061 Itsaraparb Hirunrujee Thonburi Bangkok 10600

1 May 2023

RE: Invitation to validate research instrument

Dear Associate Professor Dr. Wang Jing

Mr. Wang Lei is a graduate student in Master of Education Program in Curriculum and Instruction of Bansomdejchaopraya Rajabhat University. He is undertaking research entitled "Using Microteaching Method to improve the basketball competency of Undergraduate Students"

The thesis adversity committee has considered that you are an expert in this topic. Your recommendations would be useful for further improvement of this research instrument.

We respectfully request your assistance in validating a research instrument that is attached to this message. We would be grateful for any help you can provide in this matter. We would like to express our sincere appreciation for your time and expertise. If you have any questions or concerns, please do not hesitate to contact Mr.Wang Lei at ww201051@dingtalk.com

Thank you for considering our request.

Sincerely,

(Dr.Nainapas Injoungjirakit) Vice Dean, For Dean of the Graduate School

Namapas T.

Bansomdejchaopraya Rajabhat University Tel.+662-473-7000 ext. 1814 www.bsru.ac.th

Appendix C Research Instruments

Lesson Plan I

Contents

Basketball dribbling ability

Objective

- 1. Students understand concept of basketball dribbling.
- 2. Students are able to dribble a basketball.

Main point/concept

Basketball dribbling ability plays an important role in the game. It can not only improve the players' ball control ability, offensive rhythm control and breakthrough defense ability, but also improve the cooperation between players and teammates, guarantee to reduce mistakes. Therefore, students should pay attention to the practice and improvement of dribbling skills: 1) Basic dribbling posture and skills; 2) Basic movements of dribbling; 3) Dribble changes and combinations; 4) Dribble with offense and defense, to lay a solid foundation for better results in the game.

Introduction

Introducing the learning objectives of basketball dribbling. The teacher first introduces this lesson's teaching contents and learning objectives to the students, and explains the content and importance of the teaching objectives in detail. Students can clearly understand the teaching objectives to achieve the expected teaching effect.

Learning contents

The teacher takes the students to the basketball court to do warm-up activity to ensure that students' physical functions are active.

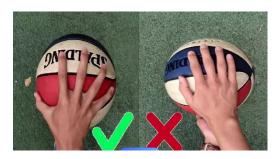
The teacher explained the concept of basketball dribbling and demonstrate: (1) Dribbling posture and skills; (2) Movements of dribbling; (3) Dribble changes and combinations; and (4) Dribble with offense and defense. The learning contents are as follows:

(1) Dribbling posture and skills: Learn the correct dribbling posture, including body posture, arm and finger posture, etc. Master basic dribbling skills, such as controlling the power of the ball, maintaining the stability of the ball, using fingers and arms to coordinate, etc. Students learn and practice:

Firstly, dribbling the ball and gradually master the power, with the coordinated movement of the fingertips and arms, gently tap the side of the ball to make the ball bounce at a moderate height.

Secondly, a steady rhythm should be maintained when dribbling, which helps to improve dribbling speed and stability.

Thirdly, when dribbling, eyes should be focused on the front, not on the ball. Judge the bouncing direction of the ball by feeling and hearing. At last, when the ball bounces, the palm should move slightly in the direction of the ball's bounce to maintain stability.





(2) Movements of dribbling: Learn the basic movements of basketball dribbling, such as alternating hands dribbling, one-handed dribbling, changing hands dribbling, etc. Through repeated practice and refined training, students gradually master the skills and methods of the basic movements.

Firstly, alternating hands dribbling: This is the most basic way of dribbling. The students touch the ball with hands in turns to help maintain the bounce and control the direction of the ball. Hand-to-hand dribbling helps improve speed and flexibility.

Secondly, one-handed dribbling: One-handed dribbling is a technique used in the game, especially when changing directions or breaking quickly. One-handed dribbling requires more power and stability because it relies on only one hand to control the ball.

Thirdly, changing hands dribbling: Shifting dribble is the act of moving the ball from one hand to the other. This move is very useful when breaking and changing direction, as it helps students change the direction and rhythm of dribble.

In sum, repeated practice will help students familiarize and solidify the basic moves and improve dribbling speed and stability. Refinement training refers to the indepth practice of a specific movement or skill in order to improve accuracy and efficiency.





(3) Dribble changes and combinations: Learn dribble changes and combinations, such as shifting dribble, changing direction dribble, passing action, etc. Students understand the principles and application scenarios of these changes and combinations, and gradually get familiar with and master the dribbling skills through practice and simulated game situations.

Firstly, dribbling change refers to changing the rhythm and mode of dribbling by adjusting the strength of the hand, the bounce height of the ball, dribbling speed and dribbling direction during the dribbling process. These changes can help students better cope with various situations in the game, such as breaking through the opponent's defense, adjusting their offensive rhythm, and confusing the opponent.

- 1) Moving dribble: Moving dribble refers to the movement of the body while dribbling. This can include moving forward, backward, side to side, and so on. Moving the dribble can help students quickly adjust position during the game, maintain the right distance from the opponent, and create a situation in which the attacker outnumbers the defender.
- 2) Changing direction Dribble: Changing direction dribble refers to changing the direction of travel of the dribble by adjusting the hand and body movements in the process of dribble. This includes rapid direction changes, large turns and other actions. This dribble change can help students break through the opponent's defense and create offensive opportunities.

Secondly, dribble combination.

Dribble combination refers to the combination of multiple dribble movements together to form a coherent dribble sequence. Dribble combination can improve the fluency and variety of dribble, so that players can use dribble technical more freely in the game.

- 1) Dribbling and passing combination: Dribbling and passing combination refers to the sudden passing of the ball to a teammate or your other hand in the process of dribbling. This combination of movements can confuse the opponent, disrupt the opponent's defensive rhythm, and create offensive opportunities.
- 2) Continuous change of the direction: Continuous change of direction refers to the use of multiple consecutive change of direction to break through the opponent's defense. This combination requires students to have high dribbling skills and physical coordination, and can quickly and accurately adjust the direction and rhythm of the dribble.

Learning dribble variations and combinations is crucial to improving basketball dribble skills, which can help students master dribbling skills more comprehensively, improve ball control and resilience. At the same time, dribble change and combination are also important means to create offensive opportunities and break through the defense in the game. Through repeated practice and refined training, students can gradually master the skills and methods of various dribbling changes and combinations, and lay a solid foundation for better performance in the game.





(4) Dribble with offense and defense: Learn how to combine dribble with offense and defense, such as dribble penetration, dribble passing, dribble defensive turn, etc.

Firstly, offensive dribble.

Offensive dribbling is the use of dribbling techniques to break through the opponent's defense and create offensive opportunities in the process of attacking.

1) Dribble breakthrough: Students break through the opponent's defense line through continuous dribble movement and change direction skills to gain offensive space. This requires students to have good dribbling skills and a sense of rhythm, to be able to quickly adjust the direction and speed of the dribble, to confuse and get rid of defenders.

2) Dribble pass: In the process of dribbling, the player needs to pass the ball to the appropriate teammate in time according to the position of the teammates on the court and the opponent's defense. Dribble passing requires students to have accurate passing judgment and stable dribble skills to be able to find the timing and route of passing while keeping the dribble.

Secondly, defensive dribble.

Defensive dribbling refers to the use of dribbling technical in the process of defense to interfere with the opponent's attack and compete for the ball. When the student is facing the opponent with the ball attacking, he can destroy the opponent's offensive rhythm by fast dribble turn action and compete for possession of the ball. This requires students to have agile reaction speed and stable dribbling skills, thus make the right judgment and action in the moment.

In short, offensive and defensive dribbling is an important part of basketball dribbling technical. By learning and practicing offensive and defensive dribbling skills, students can use dribbling skills more comprehensively and efficiently and contribute their strength to the team's victory.





Teaching activities

The teacher introduces the basketball technical ability as follows: (1) Preparing teaching materials in advance. (2) Conducting role simulation. (3) Recording with a video camera. (4) Replaying and observing. (5) Feedback and evaluation.

Step 1 Preparing teaching materials in advance

In the application of microteaching method to basketball dribbling course, teachers need to prepare the following teaching materials in advance:

1) Basketballs: Make sure every student has a basketball to practice with, which is the basis of dribbling training.

- 2) Teaching plans and objectives: Clarify the specific goals and plans of microteaching, including the skills to be taught, the level to be achieved, and the allocation of training time.
- 3) Video equipment: An important part of microteaching is video playback and analysis. Therefore, teachers need to prepare video recording devices, such as video cameras or smartphones, to record students' dribbling exercises.
- 4) Observation guide forms: Develop an observation guide form to record the performance of students in the dribbling process, including the use of skills, errors, etc. This will help follow up feedback and guidance.
- 5) Demonstration materials: Videos, pictures or the teacher's own demonstration for students' reference and learning.
- 6) Safety equipment: Wrist guards, knee guards, etc., to ensure that students in the training process is low risk of injury.

By preparing the above teaching materials, teachers can effectively guide students' basketball dribbling ability training through the microteaching method, provide timely feedback and guidance, and help students improve their dribbling skills and levels. As the cornerstone of basketball, basketball dribbling is very important for students to improve their basketball skills. In order to ensure the effectiveness and targeting of dribbling training, teachers need to prepare the following teaching materials in advance in order to systematically and comprehensively guide students' dribbling practice.

Step 2 Conducting role simulation

First, the role of the teacher:

- 1) Demonstrate proper dribbling posture and technique: Teachers should first demonstrate proper dribbling posture, including body posture, arm and finger posture, and basic dribbling technique. Make sure the demonstration is clear and accurate so that students can imitate it.
- 2) Explain dribbling skills: The teacher needs to explain in detail the key skills in dribbling, such as how to control the power of the ball, maintain the stability of the ball, and use finger and arm coordination. This helps students understand and apply these skills.
- 3) Observe students' practice and propose feedback: teachers should observe students' practice closely, find out the problems of students in time and correct them. At the same time, positive feedback and encouragement should be given to improve students' self-confidence and learning motivation.

4) Design practice plans: Teachers can design a suitable practice plan according to the level and needs of students. This can include basic exercises, technique improvement exercises, and simulate game scenarios to help students gradually improve their dribbling skills.

Second, the role of students:

- 1) Watch carefully and imitate the teacher's demonstration: Students need to watch the teacher's demonstration carefully and try to imitate the teacher's dribbling posture and technique. In the imitation process, attention should be paid to detail and accuracy.
- 2) Practice actively and accept feedback from the teacher: Students need to be actively engaged in practice and constantly try to apply the dribbling skills they have learned. In the process of practice, students timely adjust their own movements and skills to accept the teacher's feedback and suggestions.
- 3) Self-assess and reflect: Students should self-assess and reflect on their own practice process. This helps to identify shortcomings and develop a plan to further improve dribbling skills.

Step 3 Recording by camera

In the process of applying microteaching method to basketball dribbling ability guidance, video camera plays a vital role. The following is the specific tasks for teachers and students in this session:

First, teacher's task.

- 1) Set up video equipment: The teacher needs to make sure that the camera or other video equipment is set up correctly so that it can clearly capture the student's dribbling motion. This may include adjusting settings, such as the camera's angle, focal length and exposure.
- 2) Guide the video recording process: Teachers need to instruct students how to stand in front of the camera and how to adjust their position to ensure the best shooting results. At the same time, the teacher also needs to ensure that the students remain natural and relaxed during the recording process.
- 3) Monitor video quality: In the video recording process, the teacher needs to monitor the quality of the video to ensure that the picture is clear, stable, and there are not too many interfering factors. If a problem is found, the teacher needs to adjust the camera or other equipment in time.

4) Save and organize video materials. After the video is completed, the teacher needs to save and organize these materials for subsequent analysis and evaluation. This may include storing video files in appropriate locations, naming and classifying them, etc.

Second, students' task.

- 1) Use video: Students need to follow the teacher's guidance, stand in front of the camera, adjust their position and posture, so that they can clearly show their dribbling action.
- 2) Keep natural and relaxed: In the video recording process, students need to keep natural and relaxing state, not be too nervous or deliberate performance. This ensures that the video is more realistic and accurate.
- 3) Participate in assessment: After the video is completed, students are required to participate in a follow-up assessment and feedback process. This may include watching film, analyzing dribbling movements and techniques, and making improvements based on teacher's suggestions.

Through the video recording process, teachers and students can evaluate and analyze students' dribbling ability more objectively, and provide more accurate and specific basis for subsequent guidance and training. At the same time, this kind of video also helps to improve students' self-awareness and self-improvement ability. In the process of dribble training, the camera is used to record the entire training process of the students. Every detail of the student's movements is obvious.

Step 4 Replaying and observing

In the process of applying microteaching method to basketball dribbling ability, guidance, replay and observation are crucial links. The following is the specific tasks for teachers and students in this session:

First, the role of the teacher.

- 1) Prepare playback materials: The teacher needs to prepare the video of the students' dribbling practice in advance to ensure that the picture is clear and the angle is appropriate to fully demonstrate the students' dribbling skills and movements.
- 2) Guide observation: During the replay process, teachers need to guide students to focus on specific skills and movements to help them better understand the essentials and details of dribbling.
- 3) Provide analysis: The teacher needs to analyze the dribbling motion in the video, point out the advantages and disadvantages of the students in the dribbling process, and the areas that need to be improved.

4) Develop training plans: Based on the results of replays and observations, teachers need to develop personalized training plans for students to help them further improve dribbling ability.

Second, the role of students.

- 1) Watch replays: Students need to carefully watch their dribbling practice videos and observe dribbling skills and movements from multiple angles.
- 2) Make self-analysis: Students need to self-analyze dribbling movements to find out the existing problems and shortcomings, as well as possible reasons.
- 3) Receive guidance: Students need to listen to the teacher's analysis and advice to understand where they need to improve in the dribbling process and how to improve.
- 4) Develop improvement plans: According to the teacher's guidance and their own analysis, students need to develop specific improvement plans, clear improvement goals and specific action steps.

Through replay and observation, students can have a clearer understanding of dribbling skills and movements, and find existing problems and shortcomings, so as to make a targeted plan. At the same time, teachers can more accurately assess students' dribbling ability and provide them with more personalized guidance and advice.

Step 5 Feedback and evaluation

In the process of applying microteaching method to basketball dribbling ability, guidance, feedback and evaluation are very critical. The following is the specific tasks for teachers and students in this session:

First, the role of the teacher.

- 1) Observation record: The teacher needs to carefully observe the students' dribbling practice process and record the students' performance, including the correct skills and movements, as well as the existing mistakes and problems.
- 2) Providing feedback: According to the observation record, the teacher needs to give students timely feedback, point out the problems and mistakes they have in the dribbling process.
- 3) Developing a mentoring plan: Based on feedback and evaluation results, teachers need to develop a personalized mentoring plan that provides specific guidance and recommendations for each student's specific situation.
- 4) Guiding self-assessment: Teachers also need to guide students to conduct self-assessment, help them to recognize their own strengths and weaknesses, so as to stimulate their motivation to improve themselves.

Second, the role of students.

- 1) Self-observation: Students need to observe their performance in the dribbling process, pay attention to whether their skills and movements meet the requirements, whether there are mistakes and problems.
- 2) Accepting feedback: Students need to listen carefully to the teacher's feedback and suggestions, understand their own problems and mistakes in the dribbling process, and how to improve routine training.
- 3) Developing an improvement plan: According to the teacher's feedback and suggestions, students need to develop their own improvement plan with clear improvement goals and specific action steps.
- 4) Self-assessment: Students also need to conduct self-assessment, reflect on their performance in the dribbling process, recognize their strengths and weaknesses, so as to adjust and improve themselves.

Through the completion of the above tasks, feedback and evaluation can effectively promote the improvement of students' basketball dribbling ability, and also help them develop self-assessment and self-improvement ability.

Measurement and Evaluation

- 1. Observe student's answers
- 2. Check results while working
- 3. Post-lesson assignments are used to assess students' basketball dribbling ability in this lesson.

Instructional Media

Videos in the web platform-learning.

Learning schedule: Basketball dribbling technical (6 hours)

Date/time	Teaching Process	Time	
Day 1 09:00-09:20	Introduction The teacher introduces this lesson's teaching contents and learning objectives and explains the importance of basketball dribbling. Students can clearly understand the teaching objectives to achieve the expected teaching effect.	20 minutes	
09:20-10:20	Learning content The teacher explained the concept of basketball dribbling and demonstrate: (1) Basic dribbling posture and skills; (2) Basic movements of dribbling; (3) Dribble changes and combinations; and (4) Dribble with offense and defense.	1 hour	
10:20-12:00	Teaching activities: Step 1: Preparing teaching materials in advance Step 2: Conducting role simulation Step 3: Recording with a video camera	1 hour and 40 minutes	
12:00-13:00	Lunch Time		
13:00-15:00	Step 4: Replaying and observing Step 5: Feedback and evaluation	2 hours	
15:00-16:00	Repeat practice The teacher divided students into groups to help those students who lacked basketball dribbling skills and return on step 3 Recording with a video camera for feedback and evaluation on step 5 again. After class, the students lined up to relax their muscles, and the teacher explained the next learning content.	1 hour	

Lesson Plan II

Contents

Basketball passing ability

Objective

- 1. Students understand concept of basketball passing
- 2. Students are able to pass a basketball.

Main point /concept

Basketball passing ability is an indispensable key skill in basketball games. It can not only create offensive opportunities, mobilize the offensive enthusiasm of teammates, but also effectively kill the opponent's defensive will and improve the game's enjoyment. Accurate passing not only shows the individual ability of the players, but also reflects the teamwork and wisdom of the whole team, which plays a crucial role in determining the outcome of the game. Therefore, students should pay attention to the practice and improvement of passing skills. (1) Basketball direct pass skill; (2) Basketball slant pass skill; (3) Basketball backhand pass skill.

Introduction

Presenting the educational goals associated with basketball passing. The teacher presents the educational material and goals of this lesson to the students, and elaborates on the significance and substance of these educational objectives. Students can distinctly grasp the educational goals to realize the instructional impact.

Learning contents

The teacher takes the students to the basketball court to do warm-up activity to ensure that students' physical functions are active.

The teacher explained the concept of basketball passing: (1) Basketball direct pass skill; (2) Basketball slant pass skill; (3) Basketball backhand pass skill.

The three aspects together constitute the basketball passing ability. Through constant practice, students can gradually improve passing ability and contribute to the team's victory.

(1) Basketball direct pass skill: This is the most direct and easiest way to pass the ball. A player passes the ball quickly and accurately from one position to another by passing it directly to a teammate. Straight passes are often used to pass long distances to quickly change the position of the ball and look for scoring opportunities. When playing a straight pass, players need to accurately judge the position and movement of their teammates to ensure that the ball can accurately reach their hands.

First of all, the key to basketball direct pass technique lies in accurate judgment. In the game, players need to always pay attention to the position of teammates and opponents on the field, as well as the rhythm and situation of the game. When you see a teammate in a good position, make a quick passing decision. At the same time, it is also necessary to accurately judge the strength and angle of the pass to ensure that the ball can smoothly reach the hands of teammates.

Secondly, the direct passing technique requires the player to master the flexible and varied passing methods. Different passing techniques are suitable for different situations and teammates' needs. For example, a one-handed pass can be used when teammates are close; When the teammate is far away or in a tightly guarded area, it is necessary to use a two-handed pass or jump pass to ensure that the ball can pass the defender and reach the teammate safely.

Finally, direct passing also requires players to maintain their balance and vision. In the process of passing, the player should maintain a stable body posture to avoid affecting the accuracy of the passing due to body imbalance. At the same time, it is necessary to always observe and judge the situation on the field in order to adjust the passing strategy at any time. Only in this way, can students really play the power of basketball direct passing technical and create more offensive opportunities for the team.





(2) Basketball slant pass skill: Slant pass refers to passing the ball from one side to the other, but the path of the pass is not a straight line, but a diagonal line. This type of pass can be used to break through the opposing defense, because the diagonal pass line is often able to avoid the opponent's interception.

Firstly, the passing direction. The core of the oblique passing technique is to grasp the passing direction accurately. The passer should reasonably choose the angle and path of the oblique pass according to the position of the teammates on the field and the defensive situation of the opponent. Before passing the ball, the passer should clearly judge the catching ability and direction of movement of the teammate to ensure that the ball can accurately reach the target position.

Secondly, strength and speed control. The oblique pass technique requires precise control of the power and speed of the pass. The passer should adjust the intensity and speed of the pass reasonably according to the distance between the teammate and himself, the reaction speed of the opponent and the situation on the field. Too much or too little force, too fast or too slow can cause a pass to miss or be cut off by the opponent.

Thirdly, the time of the pass. Timing of passing is the key to oblique passing technique. The passer needs to observe the situation on the field and find the best time to pass. This usually happens when there are holes in the opponent's defense. The passer should seize these opportunities in time to pass decisively and create offensive opportunities for the team.

Fourthly, physical coordination and balance. The oblique pass technique requires the passer to have good coordination and balance. During the passing process, the passer should maintain a stable body posture to avoid affecting the accuracy and stability of the passing due to the imbalance of the body. At the same time, the passer should also use the strength and flexibility of the body to help themselves better control the passing process.

Fifthly, distribution of sight and attention. The line of sight and attention allocation of the passer are crucial to the application of the slant pass technique. The passer should focus mainly on the defensive posture of the target teammate and the opponent while observing other teammates and the overall situation on the field with peripheral vision. This helps the passer to make accurate judgments and find the best passing target and path in time.

Sixthly, defense prediction and response. In the process of diagonal passing, the passer needs to anticipate the opponent's defensive movements and intentions, and respond in advance. For example, when detecting that an opponent is about to intercept a pass, the passer can adjust the angle or speed of the pass to get the ball around the opponent's defense. At the same time, the passer should also be alert and ready to deal with the opponent's possible tackling or interference measures.

Seventhly, position and cooperation of teammates. The successful application of oblique passing technical is inseparable from the tacit cooperation with teammates. The passer needs to understand the running habits and receiving abilities of his teammates in order to pass the ball to them at the right place and time. At the same time, teammates should also actively receive the pass and be ready to attack after receiving the ball. Through good coordination, the team can make full use of the diagonal passing technical to break the opponent's defense and create scoring opportunities.

To sum up, the technical essentials of basketball oblique pass involve many aspects, which require the passer to explore and practice continuously in practice. By mastering these key points, players can better use the oblique passing technical, improve the team's offensive efficiency and scoring ability.





(3) Basketball backhand pass skill: The backhand pass is a technically demanding pass that is usually used in situations where a quick pass is required in tense situations. In a backhand cross, the player needs to place the ball to the side of his body, and then use the backhand motion to pass the ball to the target teammate. This passing method requires players to have hand coordination and reaction speed, and also needs to master the passing power and angle to ensure the accuracy and speed of the pass. The backhand pass is usually used for passing from close range, or when the opponent's defense is tight, to break through the opponent's defense.

Firstly, preparing the posture. Before throwing a backhand pass, make sure the player is in the right position. The player should stand steadily with feet slightly wider than shoulders and knees slightly bent to lower the center of gravity. Keep hands in

front of the body to make a quick passing motion. At the same time, keep the body relaxed so that the player can quickly exert power when passing the ball.

Secondly, observation and judgment. The success of the backhand pass largely depends on the player's ability to observe and judge. Before passing the ball, players should always observe the position, movements and intentions of teammates and opponents on the field. In particular, it is necessary to pay attention to the running and receiving ability of teammates in order to choose the best passing target and time. At the same time, the players also pay attention to the opponent's defensive posture, so that when passing the ball can avoid the other side's interception.

Thirdly, backhand passing action. The key points of backhand passing include palm flip, wrist power and finger dip. First, the player needs to turn the holder's palm up to better control the direction and force of the ball. Then, with a quick flip of the wrist and power, the ball is sent in the direction of the target. During the passing process, the fingers should gently flick the ball so that the ball can reach the hands of teammates more accurately.

Fourthly, passing intensity and direction. The strength and direction of backhand pass are the key factors that affect the passing effect. Too little or too much force can result in missed passes or tackles by the opponent. Therefore, when passing, players should reasonably control the intensity of passing according to the distance between teammates and themselves, the defensive situation of opponents and the situation on the field. At the same time, it is also necessary to accurately judge the direction of the pass according to the position and direction of movement of the teammates to ensure that the ball can smoothly reach the target position.

In short, backhand passing technique is an important and practical skill in basketball game. By mastering the correct preparation posture, observation and judgment, passing movement, players can better use backhand passing technical, improve the team's offensive efficiency and scoring ability.





Teaching activities

The teacher introduces the basketball technical ability as follows: (1) Preparing teaching materials in advance. (2) Conducting role simulation. (3) Recording with a video camera. (4) Replaying and observing. (5) Feedback and evaluation.

Step 1 Preparing teaching materials in advance

As an indispensable part of basketball, basketball passing plays a vital role in the tacit cooperation between players and the execution of overall tactics. Here are some teaching materials for basketball passing training.

- 1. Basic pass skills.
- 1) Master proper two-handed and one-handed passing form, and learn proper passing power control.
 - 2) Understand finger, wrist and arm coordination when passing the ball.
 - 2. Introduction of passing types
 - 1) Two-handed chest pass: Accurate pass from close range.
 - 2) One-handed shoulder pass: A long pass or quick transfer of possession.
 - 3) Jump pass: Complete the pass while jumping, avoiding the defender.
- 4) Underhand pass: Used when pressing the defense to ensure that the ball can pass through the line.
 - 3. Pass timing analysis
 - 1) Learn quick passing skills when switching from offense to defense.
 - 2) Understand when to play long passes and when to play short passes.
 - 3) Time the pass in the fast break.
 - 4. Pass strength training
- 1) Build arm and wrist strength with specialized passing exercises, such as heavy passes or passing machines.
- 2) Practice gradually increasing the passing distance to improve the power and accuracy of the pass.
 - 5. Pass accuracy
- 1) Practice passing with a target or marked area to improve the accuracy of passing.
 - 2) Practice passing on the move to simulate real situations in the game.

Step 2 Conducting role simulation

In basketball game, passing is not only a technical action, but also a reflection of tactical consciousness and tacit team understanding. In order to improve the players' passing ability more effectively, the teacher introduced the role simulation

training method. This approach allows players to practice passing in different tactical scenarios and role positioning to better adapt to various situations in the game.

- 1. The role of the teacher.
- 1) Set characters and scenes

Point guard (PG): In a fast-paced offense, responsible for quick and accurate passing, looking for an opening.

Shooting guard (SG): Catching and shooting the ball require quick judgment and accurate catching.

Small forward (SF): Used in positional battles as a passing hub, connecting the inside and outside.

Power forward (PF): Players create passing opportunities for teammates.

Center (C): When defending in transition, use height to play and pass.

For each character, set up different tactical scenarios, such as fast attack, position battle, pick and roll, and play.

2) Simulate actual combat

Let the players pass the ball in a simulated real combat environment. This can include confrontation with defenders, decision-making under pressure, quick and accurate passing, etc. This training method can help players better adapt to the pace and intensity of the game and improve the passing ability.

2. The role of students.

In the role simulation training, the importance of teamwork and communication is emphasized. Players need to learn to work with their teammates, understand their intentions and needs, and thus better complete the task of passing. Through the training of teamwork and communication, the overall understanding and execution of the team can be improved.

In conclusion, through the role simulation training method, teachers can help players improve their passing ability in different tactical scenarios and role positioning. This method can not only improve the individual skill level of players, but also enhance the overall strength of the team.

Step 3 Recording by camera

In modern basketball training, the mastery of technical details and accurate analysis become more and more important. Using cameras to record basketball passing drills is an effective way to help players self-correct their movements and improve their passing ability.

- 1. The role of the teacher.
- 1) Basic passing skills

Use the camera to record the player's basic passing skills, such as two-handed chest passing, one-handed shoulder passing and so on. By playing back the video, players can observe their passing posture, finger and wrist coordination, etc., so as to make targeted improvements.

2) Passing speed training

By recording the players' continuous passing practice through the camera, the speed of the passing can be visually seen. Players can gradually increase the frequency of passing while paying attention to maintaining the accuracy and stability of passing.

3) Passing accuracy training

Set up different target areas and let players try to pass at different distances and angles. The camera can capture the drop point of the pass, and help players analyze the accuracy of the pass and adjust accordingly.

- 2. The role of students.
- 1) Different distance passing drills

With the camera recording the players' passing practice at different distances, players can observe the difference in their performance on long and short passes. This helps players to better understand the control of passing power and improve the accuracy of passing.

2) Different passing angle training

The camera can record the players in different angles of passing practice, such as front pass, side pass, back pass and so on. By analyzing the video, players can identify their shortcomings in passing at certain angles and make targeted improvements.

3) Passing route planning

In multi-player passing drills, cameras can help players better plan passing routes. By watching the video, players can discover the best passing path and timing and improve the overall efficiency of the match.

In the multi-person pass drill, the camera can record the whole cooperation process. By playing back the video, the player can analyze the passing timing, running position and tacit cooperation in the match, etc., to provide a basis for subsequent improvement.

To sum up, using cameras to record basketball passing training is a very effective way to improve passing ability. Through the recording and analysis function

of the camera, players can have a more in-depth understanding of their passing performance so as to make targeted improvements. This will help improve the basketball level of the players and contribute to the overall performance of the team.

Step 4 Replaying and observing

In order to improve the passing ability more effectively, replaying and watching video has become an integral part of the training. This training method can help players more intuitively understand their passing performance, identify and correct technical deficiencies, and improve the accuracy, speed and creativity of the passing.

- 1. The role of the teacher.
- 1) Replay and analysis of passing movements

By playing back the video, the teacher helps players watch their passing movements carefully. From the placement of fingers and the flip of the wrist to the coordination of the whole body, every detail can be magnified and carefully analyzed. In this way, players can clearly see their own problems in the passing process, such as fingers are too stiff, wrist action is not smooth enough, so as to make targeted improvements.

2) Observation and optimization of passing routes

When watching the video, the teacher helps players clearly see their passing routes. This helps players find out when to pass, whether to choose the right route and whether to penetrate the defense effectively. By analyzing the video, players can find more reasonable and efficient passing routes, improve the flow of the game and the threat of attack.

- 2. The role of the students.
- 1). Improving passing accuracy

By replaying the video, the player can see if the pass was dropped accurately. This not only improves the player's control of the passing force, but also increases the player's perception of the pace of the game. When players can accurately pass the ball into the hands of teammates, the flow of the game and the efficiency of the offense will be greatly improved.

2). Communication and feedback with teachers and teammates

During the replay and review process, players can communicate and give feedback to teachers and teammates. Teachers can offer professional advice and guidance to students, while teammates can offer opinions from another perspective. This multifaceted feedback helps players get a more complete picture of their passing performance and better improve their technique.

3). Increasing confidence and game intelligence

By replaying and watching the footage, students can see their progress in training. This kind of intuitive feedback can boost players' self-confidence and make them more confident in facing the challenges of the game. At the same time, video can also help students familiarize themselves with various game situations and improve their game intelligence and coping ability.

To sum up, replaying and observing video is a very effective way to improve basketball passing ability. In this way, students can more intuitively understand their passing performance and identify and correct technical deficiencies. At the same time, this training method can also enhance the players' self-confidence and game wisdom, and provide strong support for them to achieve better results in the game.

Step 5 Feedback and evaluation

In basketball games, passing, as the core technical of a team's attack, plays a vital role in improving the team's overall attack efficiency and cooperation. In order to continuously improve the passing ability of players, timely feedback and evaluation are particularly important.

- 1. The role of the teacher.
- 1) Passing accuracy evaluation

Passing accuracy is an important index to evaluate a player's passing ability. In training, the accuracy of the pass can be evaluated by observing the players' passing point and the tacit understanding with the receiver. If the passing accuracy is high, it means that the player can accurately judge the position and movement speed of the receiver when passing the ball, and effectively reduce the passing error.

2) Passing speed analysis

Passing speed plays an important role in improving the team's offensive rhythm and tactical execution efficiency. In training, the passing speed of the players can be analyzed by means of timers and video replays. If the passing speed is faster, it means that the player has a better reaction speed and coordination, and can quickly complete the passing action, thus create more opportunities for the team to attack.

3) Control of passing power

The control of passing power is related to the accuracy and security of passing. In training, attention should be paid to the coordinated power of the fingers, wrists and arms when the player passes. If the player can accurately control the passing force according to different situations and the needs of the receiver, it will help to improve the stability and security of the passing.

- 2. The role of students.
- 1) Evaluation of the receiver

Passing is not only a player's personal skill, but also needs to form a good cooperation with the receiver. In training, teachers can observe the tacit understanding, communication and trust between players and teammates, and evaluate the cooperation of receivers. If a player can form a tacit cooperation with his teammates, it will help to improve the fluency and success rate of passing.

2) Passing variety

In basketball, facing different defensive strategies and scenarios, players need to have a variety of passing abilities. In training, players should be encouraged to try a variety of passing methods, such as straight pass, jump pass, toss pass, etc., to improve the diversity of passing. This can not only increase the enjoyment of the game, but also effectively cope with various defensive strategies.

3) Practicing positive observation

The motivation and attitude of the players in training is also important to improve the passing ability. The teacher should pay attention to the player's level of commitment in training. If a player shows a higher training enthusiasm, he will be more likely to play a good passing ability in the game.

3. The role of the teacher and students

In basketball, passing mistakes is common. However, an in-depth analysis of passing errors and finding out the reasons for them is crucial to improving the passing ability of players. Teachers and students should jointly focus on the types, causes and solutions of passing errors in order to avoid similar problems in subsequent training.

To sum up, for basketball passing training, comprehensive feedback and evaluation can help players find and improve technical shortcomings and improve their passing ability. By focusing on pass accuracy, speed, power control, receiver coordination, variety, motivation, turnover analysis, and tactical application understanding, teachers can develop more targeted training programs for players to help them excel in basketball.

Measurement and evaluation

- 1. Assignment form and checking.
- 2. Observing the practice of basketball passing.

Instructional media

- 1. Teachers' self-testing and self-evaluation.
- 2. Teachers and students use electronic devices to record videos.

Learning schedule: Basketball passing technical (6 hours)

Date/time	Teaching Process	Time
Day 2 9:00-9:20	Introduction: The teacher presented the educational material and goals of the lesson, and emphasized the significance of passing basketball. Students can distinctly grasp the educational goals to realize the instructional impact.	20 minutes
9:20-10:20	Learning content: The teacher explained the concept of basketball passing and demonstrated: (1) Basketball direct pass skill; (2) Basketball slant pass skill; (3) Basketball backhand pass skill.	
10:20-12:00	Teaching activities: Step 1: Preparing teaching materials in advance Step 2: Conducting role simulation Step 3: Recording with a video camera	1 hour and 40 minutes
12:00-13:00	Lunch time	
13:00-15:00	Step 4: Replaying and observing Step 5: Feedback and evaluation	
15:00-16:00	Repeat practice: The teacher divided students into groups to help those students who lacked basketball passing skills and return on step 3 (Recording by camera) for feedback and evaluation on step 5 again. After class, the students lined up to relax their muscles.	1 hour

Lesson Plan III

Contents

Basketball shooting ability

Objective

- 1. Students understand concept of basketball shooting (K)
- 2. Students are able to shoot a basketball (P)

Main point/concept

Basketball shooting ability plays a very important role in basketball games. Whether it is from the point of view of scoring means, tactical core, confidence building, game rhythm, teamwork, confrontation advantage or skill improvement, shooting ability is one of the necessary core skills for players. Therefore, players need to improve their shooting ability through continuous training and practice in order to achieve better results in the game. 1) Basic shooting skills; 2) Shooting posture and power control; 3) Jump shot and layup technique.

Introduction

This paper expounds the purpose of learning basketball shooting skills. On this basis, the corresponding teaching methods are put forward. The teacher elaborates the teaching content and learning objective of this course for the students, and deeply discusses the specific content and importance of the teaching objective. Students can clearly grasp the purpose of teaching and achieve predetermined teaching results.

Learning contents

The teacher takes the students to the basketball court to do warm-up activity to ensure that students' physical functions are active.

The teacher explained the concept of basketball passing: (1) Basic shooting skills; (2) Shooting posture and power control; (3) Jump shot and layup technique. The learning contents are as follows:

(1) Basic shooting skills: This is the basis of learning basketball shooting, including the correct way to hold the ball, the choice of aiming at the basket point, the coordinated force of the shooting action, the angle and speed of the shot and the rotation of the ball. For students, it is necessary to gradually master and become familiar with these basic skills to ensure the accuracy and stability of shooting.

Firstly, correcting handling of the ball.

- 1) Holding the ball with five fingers: Hold the ball with five fingers, thus make sure the palm of the hand does not touch the ball.
- 2) Coverage area: Try to maximize the surface area of the five fingers to cover the ball to increase the control effect of the ball.
- 3) Elbow position: When holding the ball in both hands, the elbows should be slightly outward and keep the two upper arms, the two forearms, and the two thumbs of the left and right hands in a figure eight.
- 4) Wrist flexibility: When holding the ball with both hands, the wrist should be able to rotate flexibly.
- 5) Activity preparation: Before holding the ball, fingers, wrists, neck, shoulders, waist, elbows, knees, ankles should be moved to prevent injury.

Secondly, basket point selection.

- 1) Target point: Many teachers recommend aiming at the point at the front of the hoop, or behind the hoop, to help players better judge the arc and power of the shot.
- 2) Shot vision: When players see the point behind the basket, they can better judge the position of the ball into the basket, thus improve the shooting percentage.

Thirdly, coordinating force of shooting action.

- 1) Body comprehensive power: The force of shooting is a comprehensive and coordinated power process of the body, starting from standing posture and body balance.
- 2) Power transferring: Power starts from the lower leg push off and extends the body in the direction of the shot.
- 3) Control and key movements: The flexibility, and consistency of the wrist flip, shake and finger flick action are the key to determining a reasonable hand speed.

Fourthly, angle and speed.

- 1) Shot angle refers to the angle between the tangent line of the ball's center of gravity flight trajectory and the horizontal plane of the shot point when the ball leaves the hand. The best shot angle is usually around 45°, but this also depends on the individual skill of the player and the situation of the match.
- 2) Shooting speed refers to the moment of shooting, the comprehensive muscle strength of all parts of the body through the adjustment of the wrist and fingers, so that the ball from the hand into the space of the initial speed. The longer the shot, the faster the shot.

Fifthly, rotation of the ball.

- 1) Spin produce: When shooting, the spin of the ball mainly relies on the wrist forward bend or flip and the finger flick action.
- 2) Spin effect: The direction and speed of rotation of the ball determine the stability of the ball in the air and the possibility of entering the hoop.

In sum, mastering these basic elements of basketball shooting, and through repeated practice and training, can help players improve the accuracy and stability of shooting so as to achieve better results in the game.

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(2) Shooting posture and power control: Shooting posture has an important impact on the shooting effect. The correct shooting posture can not only improve the shooting percentage, but also reduce the physical burden of players in the shooting process. In addition, power control is also an important part of shooting skills. Players need to learn how to adjust the shooting force to adapt to different distances and angles of the shooting needs.

Firstly, basketball shooting position.

Shooting posture refers to the combination of the player's body posture and arm, wrist and finger movements in the process of shooting. The correct shooting posture can improve the accuracy and stability of the shot, reduce the resistance when shooting, and make it easier for the ball to enter the hoop. Shooting posture includes a series of movements such as standing, holding the ball, arm extension, wrist flip and finger dip. When positioning, players need to maintain balance and choose the right angle and distance. When holding the ball, make sure that the five fingers are separated, the palm is not touching the ball, and the finger end and the base of the palm are controlling the ball. When the arm is extended, make full use of the power of the lower leg to push the ball up from the chest or shoulder

position. The wrist flip and finger dip are the keys to the shot, and through these two movements, the player can control the spin and flight of the basketball.

Secondly, basketball power control.

Power control refers to how a player adjusts and uses body power during a shot so that the ball leaves his fingers at the proper speed and angle and enters the hoop. Power control includes lower limb push off, waist and abdomen extension, arm and wrist exertion, etc. When shooting, the player needs to make full use of the strength of the lower limbs to push off the floor and transfer the power to the waist and arms. At the same time, the extension of the waist and abdomen is also important, it can help the player better control the angle and power of the shot. The strength of the arm and wrist is the key to shooting, and the player needs to flip the wrist and dial the finger to make the ball leave the finger at the appropriate speed and angle.

In short, basketball shooting posture and power control are important aspects of basketball shooting technical. With proper posture and proper power control, players can improve the accuracy and consistency of their shots, and get better performance in the game.





(3) Jump shot and layup technique: Jump shot and layup are common shots in basketball games. Jump shots can be used from a distance or tight defense, while layups are more often used for point-blank scoring. Jump shot and layup require mastering the right form, timing, and use of power, as well as maintaining balance and controlling the rhythm of the shot.

Firstly, basketball jump shot technique.

The jump shot is a shooting technique done during a jump, often used for midrange or long-range shots. The main advantage of the jump shot is the ability to evade the defender's block, and create more space to shoot.

The basic steps for a jump shot are as follows:

- 1) Prepare shooting position with the ball in front of chest or waist.
- 2) Bend knees and waist and prepare to jump.
- 3) Push off hard while extending waist and arms and throw the ball from head or shoulder position.
- 4) In the process of jumping, the arm and wrist should coordinate the force to make the ball leave the finger at the appropriate speed and angle.
 - 5) Keep balance when landing, and get ready for next attack or defense.

The jump shot requires correct posture and technique, including the coordinated force of the arms, wrists and fingers, as well as the proper timing of the jump and landing. With repeated practice, players can improve their jump shot accuracy and consistency.

Secondly, basketball layup technique.

The basic steps for a layup are as follows:

- 1) Dribble close to the basket and choose the right angle and route.
- 2) Speed up and drive past the defender, as close to the basket as possible.
- 3) Protect the ball with body while adjusting pace and angle to prepare for the shot.
- 4) Throw the ball from a low angle or a high angle by using coordinated arm and wrist force.
- 5) Pay attention to the position of the basket and the defender, and choose the appropriate shot.

Driving a layup requires mastering the correct dribbling and driving skills, as well as the ability to shoot and score under the basket. At the same time, students also need to have good ball control ability and basketball awareness in order to flexibly use this technical in the game.

In short, basketball jump shot technical and layup technical are two commonly scoring methods in basketball games. By mastering the right techniques and practice methods, players can improve the use of these two techniques and scoring efficiency.





Teaching activities

The teacher introduces the basketball technical ability as follows: (1) Preparing teaching materials in advance. (2) Conducting role simulation. (3) Recording with a video camera. (4) Replaying and observing. (5) Feedback and evaluation.

Step 1 Preparing teaching materials in advance

In the application of microteaching method to basketball shooting course, teachers need to prepare the following teaching materials in advance:

- 1) A teaching plan: Formulate clear teaching objectives, determine the technical movements and practice methods, and the corresponding teaching progress and time arrangement.
- 2) Teaching equipment: Prepare enough basketball and shooting equipment to ensure that every student has the opportunity to practice. At the same time, check the integrity and safety of the equipment to ensure that there will be no problems in the process of use.
- 3) Site layout: According to the teaching plan, reasonably plan the site layout to ensure that there is enough space for students to practice and move. At the same time, the appropriate shooting point and basket height are set to adapt to students of different ages and levels.
- 4) Safety preparation: Emphasize safety precautions to avoid collisions and injuries. At the same time, prepare the necessary first aid equipment and medicine to deal with the unexpected situation.
- 5) Teaching demonstration: Be prepared to teach demonstration movements in order to show students correct shooting techniques and posture. At the same time, according to the feedback and performance of students, timely adjust demonstration actions and teaching methods.
- 6) Teaching assessment: Develop assessment criteria and methods in order to understand students' learning and progress in a timely manner. At the same time, based on the evaluation results, teaching plans and methods are adjusted to better meet the needs and expectations of students.

In short, teachers need to make full preparations before the basketball shooting class to ensure the smooth progress of the teaching process, and the safety of students. At the same time, according to the actual situation and needs of students, flexibly adjust the teaching plan and method to improve the teaching effect and promote the all-round development of students.

Step 2 Conducting role simulation

In basketball shooting class, role simulation is an effective teaching method, which can help students better understand and apply shooting skills. In this teaching model, teachers and students play different roles and participate in simulated situations.

First, the role of the teacher.

- 1) Setting the situation: The teacher first needs to set a specific shooting situation such as a key moment in the game, or a technical part of the training that needs to focus on practice.
- 2) Demonstrating skills: Teachers should first demonstrate correct shooting skills, including posture, power control, shooting rhythm, etc., to provide a clear reference for students.
- 3) Guidance and feedback: In the process of role simulation, teachers should always pay attention to students' performance and provide timely guidance and feedback. This helps students adjust their shooting movements in time and improve the accuracy and stability of shooting.
- 4) Adjusting the situation: According to the actual situation and progress of the students, the teacher needs to timely adjust the situation and difficulty of the simulation to ensure the continuous improvement of the teaching effect.

Second, the role of students.

- 1) Active participation: Students need to actively participate in role simulation and shoot the ball according to the situation set by the teacher. This helps students better understand and apply shooting techniques.
- 2) Imitation and learning: Students need to carefully observe the teacher's demonstration actions, and try to imitate and learn. Through repeated practice, students can gradually master the correct shooting skills.
- 3) Self-adjustment: In the process of simulation, students need to adjust their shooting actions in time according to the teacher's guidance and feedback. This helps students improve their shooting skills quickly.
- 4) Asking questions: If students encounter problems or confusion in the simulation process, they need to raise them to the teacher in time to get targeted guidance and help.

Through role simulation, teachers and students can better interact and cooperate, and jointly promote the teaching effect of basketball shooting class. This teaching method can not only improve students' shooting skills, but also help to develop students' teamwork ability and self-confidence.

Step 3 Recording by camera

In basketball shooting class, using cameras to record the teaching process can help teachers and students better analyze and improve shooting techniques. In this process, teachers and students have different tasks and roles.

First, the role of the teacher.

- 1) Set up the recording environment: The teacher needs to ensure that the camera position, angle and height can clearly capture the student's shooting action and details.
- 2) Demonstrate and explain technical moves: Before recording the camera, the teacher should first demonstrate the correct shooting technique to the students and explain the gist and importance of each move.
- 3) Guide shooting practice: In the recording process, the teacher needs to guide the students to do different kinds of shooting practice, including spot shooting, jump shooting, shooting after dribbling, etc.
- 4) Observe and record: The teacher needs to carefully observe the students' shooting movements, pay attention to which movements are done well, which need to be improved.
- 5) Provide feedback: After the practice, the teacher needs to replay the recorded video, analyze the shooting motion with the students, point out the advantages and disadvantages, and provide suggestions for improvement.

Second, the role of students.

- 1) Participate in shooting practice: Students need to practice shooting according to the teacher's guidance, and try their best to achieve accurate and smooth movements.
- 2) Self-observe: In the practice process, students should always pay attention to their shooting actions, try to perceive the muscle force, body coordination, etc.
- 3) Receive feedback: At the end of the practice, students need to watch the recorded video, listen to the teacher's feedback and suggestions, and think about how to improve their shooting technique.
- 4) Practice step by step: Based on the teacher's feedback and their own observations, students need to adjust the shooting motion and try to apply these improvements in the subsequent practice.

By using cameras to record the teaching process, teachers and students can more objectively analyze and improve the shooting technique, improve the teaching effect and the learning effect of students. At the same time, this method also helps to cultivate students' self-observation ability and self-improvement consciousness.

Step 4 Replaying and observing

In the process of replaying and observation training of basketball shooting class, teachers and students each assume different roles and tasks.

First, the role of the teacher.

- 1) Make a plan: The teacher needs to make a clear plan and determine the specific time, place and goal of observation training.
- 2) Observe students' performance: In the training process, teachers need to carefully observe students' shooting movements, technical use and training attitude.
- 3) Record data: Teachers need to record the performance data of students in training such as shooting percentage, technical movement completion degree, etc.
- 4) Provide feedback: After the observation training, the teacher needs to provide feedback to the students in a timely manner, and point out students' strengths and weaknesses in the training, and give specific suggestions for improvement.
- 5) Adjust the training plan: According to the performance and feedback of the students in the training, the teacher needs to adjust the training plan in time to meet the individual needs of the students and improve the training effect.

Second, the role of students.

- 1) Participation in training: Students need to participate in training according to the teacher's guidance and plan, and strive to improve shooting skills and performance.
- 2) Self-observation: In the training process, students need to always pay attention to shooting movements and technical application, and try to find out their shortcomings and problems.
- 3) Accepting feedback: After the training, students need to carefully listen to the teacher's feedback and suggestions, and adjust their own training methods and strategies according to the feedback.
- 4) Continuous practice: Students need to apply the skills and knowledge learned in training to practical practice, and improve their basketball level through continuous practice and reflection.

Through the replay and observation of the training process, teachers can have a more comprehensive understanding of the training situation and needs of students, and provide more targeted guidance and help. Students can also have a clearer understanding of their own shortcomings and problems so as to improve training methods and strategies. This is helpful to improve the teaching effect of basketball shooting class and students' learning effect.

Step 5 Feedback and evaluation

In the process of feedback and evaluation, teachers and students have different tasks and responsibilities.

First, the role of the teacher.

- 1) Set evaluation criteria: Before starting feedback and grading, the teacher needs to set clear evaluation criteria, which should be based on the accuracy, fluency and consistency of the shooting technique.
- 2) Observe and record: In the process of shooting practice, the teacher needs to carefully observe the students' shooting movements, technical use and overall performance, and record key information, such as shooting percentage, movement specification, etc.
- 3) Provide specific feedback: In the feedback session, the teacher needs to provide specific and targeted feedback on the performance of each student. This includes pointing out the student's strengths and weaknesses in shooting technique, as well as offering suggestions and ways to improve.
- 4) Develop follow-up training plans: Based on students' performance and grading results, teachers need to develop personalized follow-up training plans to help students further improve their shooting skills.

Second, the role of students.

- 1) Participate in practice: During shooting practice, students need to actively participate and try their best to show shooting skills and abilities.
- 2) Listen and absorb feedback: In the feedback session, students need to listen carefully to the teacher's feedback and suggestions and try to understand the main points and intentions.
- 3) Develop improvement plans: Based on self-reflection and the teacher's suggestions, students need to develop improvement plans and implement them in subsequent exercises.
- 4) Communicate with the teacher: If there are any questions or do not understand the place, students need to take the initiative to communicate with the teacher for further guidance and help.

Through the feedback and grading process, teachers can have a more comprehensive understanding of students' shooting skills and needs so as to provide more targeted guidance and help. Students can also have a clearer understanding of their shortcomings and problems in order to improve their shooting skills and improve learning results.

Measurement and evaluation

- 1. Assignment form and checking
- 2. Observing the practice of basketball shooting

Instructional media

- 1. Teachers' self-testing and self-evaluation.
- 2. Teachers and students use electronic devices to record videos.

Learning schedule: Basketball shooting technical (6 hours)

Date/time	Teaching Process	Time
Day 3	Introduction:	
9:00-9:20	The teacher outlines the educational material and	
	goals of this lesson, and emphasizes the significance	20 minutes
	of basketball shooting. Students can distinctly grasp	20 minutes
	the educational goals to realize the anticipated	
	instructional impact.	
	Learning content:	
	The teacher explained the concept of basketball	
9:20-10:20	dribbling and demonstrated: (1) Basic shooting skills;	1 hour
	(2) Shooting posture and power control; (3) Jump	
	shot and layup technique.	
	Teaching activities:	
10:20-12:00	Step 1: Preparing teaching materials in advance	1 hour and
10.20-12.00	Step 2: Conducting role simulation	40 minutes
	Step 3: Recording by camera	
12:00-13:00	Lunch Time	
13:00-15:00	Step 4: Replaying and observing	2 hours
15.00-15.00	Step 5: Feedback and evaluation	2 110u13
	Repeat practice	
15:00-16:00	The teacher divided students into groups to help	
	those students who lacked basketball shooting skills	
	and return on step 3 (Recording by camera) for	1 hour
	feedback and evaluation on step 5 again.	
	After class, the students lined up to relax their	
	muscles.	

The Objective Test

Students understand basic knowledge and operational steps of basketball dribbling.(k)

Leaning Content	The Item Questions			
The concept	1) Which of the following dribbling positions is correct on the			
of basketball	basketball court?			
dribbling.	A. When dribbling behind the back, the student leans forward and			
	taps the ball with the palm of his hand.			
	B. The student looks down at the ball while dribbling between his			
	legs.			
	C. Students move the ball with their fingertips while dribbling high and low.			
	D. When the student dribbles in a hurry to stop, he lowers his			
	center of gravity and becomes a low dribble position. 2) Which of the techniques is correct arm, when dribbling in			
	basketball? A. Arm completely straight, palms parallel to the floor.			
	B. Bend your arms and keep your palms perpendicular to the floor.			
	C. Relax your arms and hang down naturally, with your palms at an angle to the floor.			
	D. Keep your arms at your sides with your palms parallel to the			
	floor.			
	3) Which of the techniques is correct when dribbling with one hand			
	in basketball?			
	A. Separate fingers and control the ball with fingers and palms			
	together.			
	B. Keep your fingers together and pat the ball with your palms.			
	C. Bend your fingers and move the ball with your fingertips.			
	D. Palm up and move the ball with your fingers.			

Leaning Content	The Item Questions		
The concept	4) When dribbling with one hand, where should the eye focus be?		
of basketball	A. Keep your eyes on your hands at all times		
dribbling.	B. Look up and observe the situation on the field, such as the		
	position of your teammates and opponents		
	C. Look up. Keep your head down and focus only on the		
	basketball		
	D. Look at random, without fixed fixation point		
	5) How to control the bounce of the basketball when dribbling		
	with both hands?		
	A. Rely entirely on the strength of the palm		
	B. Use the softness and strength of the fingers		
	C. Relying solely on arm strength		
	D. Hit the basketball hard to increase the bounce height		
	6) What is the main purpose of dribbling behind the back?		
	A. Protect the basketball from being stolen		
	B. Increase the enjoyment of dribbling		
	C. Change the direction and rhythm of dribbling		
	D. Show the skill level of the player		
	7) In basketball dribbling, which of the following is correct when		
	changing directions?		
	A. Stop dribbling suddenly and then start dribbling again in a		
	direction.		
	B. While dribbling, change the direction of the ball with the same		
	hand while the body follows the turn.		
	C. When dribbling, change the direction of the ball by dribbling		
	between the legs, while the body follows the turn.		
	D. Directly change the direction of the ball with the non-dribbling		
	hand while turning the body.		

eaning Content	The Item Questions		
Students	8) Which of the following actions is the key to a breakthrough?		
understand	A. Keep your balance		
the concept	B. push the defender hard		
of basketball	C. change the direction of the dribble quickly		
dribbling.	D. Keep your eyes on the basketball at all times		
	9) Which of the following is wrong when defending the dribble?		
	A. Maintain proper hand movements to avoid fouls		
	B. Keep close to the ball holder and do not give him space		
	C. See with your eyes, not with your body.		
	D. Communicate with your teammates and work together on		
	defense		

The Objective Test

Students understand the concept of basketball passing. (K)

Leaning Content	The Item Questions			
The concept	1) What is the main purpose of the direct pass in basketball?			
of basketball	A. To demonstrate a player's skill			
passing.	B. To pass the ball quickly to a teammate to advance an attack			
	C. Consumption of game time			
	D. Increase the enjoyment of the game			
	2) Which of the following factors is most important when playing a			
	direct pass?			
	A. Power of the pass			
	B. Accuracy of the pass			
	C. Speed of the pass			
	D. Passing form			
	3) Which of the following passes is better for using a diagonal pass			
	in a crowded interior?			
	A. Jump pass			
	B. Ground roll pass			
	C. High drop pass			
	D. Chest pass			
	4) What is the function of the slant pass in the tactical system of			
	basketball?			
	A. The main means of scoring			
	B. The basic ball handling technique			
	C. The bridge that breaks the defense and connects the			
	offense			
	D. A way to show off a player's individual abilities			

Leaning Content	The Item Questions			
The concept	5) What are the main advantages of the backhand pass over other			
of basketball	passing styles?			
passing.	A. Pass fast			
	B. Pass far			
	C. Confuse the defender			
	D. It's easy for you to control the ball			
	6) Which of the following skills is key when playing a backhand			
	pass?			
	A. Swing your arms vigorously			
	B. Keep your balance			
	C. judge your teammate's position accurately			
	D. Adjust the angle of the pass quickly			
	7) How should players adjust their body position when passir			
	backhand?			
	A. Keep your body upright and still			
	B. Bend your knees slightly and keep your weight stable			
	C. Turn your body completely to the passing direction			
	D. Place your weight completely on the passing arm.			
	8) Which of the following is the key to a basketball backhand pass?			
	A. The palm of the hand is completely attached to the basketball			
	with the five fingers closed			
	B. The rebound of the basketball is controlled by the fingers			
	C. The rebound of the basketball is controlled by the fingers. Throw			
	the ball hard with your arms completely straight.			
	D. Turn your body quickly to increase your passing power.			

The Objective Test

Students understand the concept of basketball shooting. (K)

Leaning Content	The Item Questions
The concept	2) Which of the following is the correct body position during
of basketball	shooting?
shooting.	A. The body is completely relaxed and not balanced
	B. Keep your knees straight and your feet wider than shoulder
	width apart
	C. Keep your upper body steady and jump up slightly
	D. Throw your arms out forcefully, regardless of body position
	Answer
	4) What is the importance of controlling the pace of shooting
	against a tight defense?
	A. Move quickly to avoid the defense
	B. Move slowly to watch the defense
	C. Maintain a consistent shooting speed, not affected by defense
	D. Shooting speed is not an important factor
	5) Which part of the body should be stable during shooting?
	A. Head
	B. Waist
	C. Legs
	D. Arms
	7) Which movement is the key to controlling the stability of the
	force during the shooting process?
	A. Leg push off
	B. Waist rotation
	C. Arm straight
	D. Finger pull

Leaning Content	The Item Questions			
The concept	8) How should I adjust my power control when shooting from a			
of basketball	long distance?			
shooting.	A. Increase the power of the arm and wrist			
	B. Strengthen the push off of the leg			
	C. Improve the height of the shot			
	D. Comprehensively adjust the strength of all parts of the			
	body			
	9) When shooting a jump shot, which part of the body should be			
	kept upright to ensure consistency?			
	A. Back			
	B. Waist			
	C. Neck			
	D. Legs10) Which of the following jump shot techniques works better			
	against taller or stronger bounces?			
	A. Low hand jump step			
	B. Dominant jump shot (over the top)			
	C. Fadeaway jump shot			
	D. Stop the jump shot			
	11) After the jump shot is completed, how should I keep my			
	balance when landing?			
	A. Both feet on the ground at the same time, knees slightly			
	bent			
	B. Land on one foot first, then quickly switch to the other foot			
C. Stand up immediately after heel strike				
	D. Landing at will, regardless of balance			

Leaning Content	The Item Questions	
The concept	12) Which of the following techniques is commonly used to	
of basketball	create a scoring opportunity on a layup?	
shooting.	A. Fake action	
	B. Direct jump	
	C. Fast running	
	D. Strong breakthrough	

The Performance Assessment

Students are able to dribble a basketball. (P)

A	Criterial of score		
Assessment item	3	2	1
1.Dribbling posture and	Students are	Students are	Students are
skills.	most able to	moderate able	little able to
(1) body posture, arm and	dribble the ball	to dribble the	dribble the ball.
finger posture, etc.	correctly and	ball.	
(2) controlling the power	completely.		
of the ball.			
(3) maintaining the			
stability of the ball.			
(4) using fingers and arms			
to coordinate.			
2. Movements of	Students are	Students are	Students are
dribbling.	most able to	moderate able	little able to
(1) alternating hands	movements of	to movements	movements of
dribbling.	dribbling the	of dribbling	dribbling the
(2) one-handed dribbling.	ball correctly	the ball.	ball.
(3) changing hands	and completely.		
dribbling.			
3. Dribble changes and	Students are	Students are	Students are
combinations.	most able to	moderate able	little able to
(1) shifting dribble.	dribble changes	to dribble	dribble changes
(2) changing direction	and	changes and	and
dribble, passing action,	combinations	combinations	combinations
etc.	the ball	the ball.	the ball.
	correctly and		
	completely.		

A	Criterial of score		
Assessment item	3	2	1
4. Dribble with offense	Students are	Students are	Students are
and defense.	most able to	moderate able	little able to
(1) dribble penetration.	dribble with	to dribble with	dribble with
(2) dribble passing.	offense and	offense and	offense and
(3) dribble defensive turn,	defense the ball	defense the ball.	defense the ball.
etc.	correctly and		
	completely.		

The Performance Assessment

Students are able to pass a basketball. (P)

Assessment item	Criterial of score		
	3	2	1
1.Direct pass.	Students were	Students were	Students were
(1) judge the position of	able to pass	able to pass	able to pass
their teammates	basketball	basketball	basketball
(2) judge the movement	directly, straight	directly, straight	directly, straight
of their teammates	and long-	and	and
	distance pass	long-distance	long-distance
	accurately.	pass, but little	pass, but slow
		accuracy.	and inaccurate.
2. Slant pass.	Students were	Students were	Students were
(1) break through the	able to pass the	able to pass the	able to pass the
opposing defense.	ball diagonally	ball diagonally	ball diagonally
(2) judge the diagonal	through the	through the	through the
pass line.	opponent's	opponent's	opponent's
	defense and	defense, but	defense, but
	teammates can	teammates can	teammates
	catch the ball	catch the ball	cannot catch
	accurately.	little accurately.	the ball.
3. Backhand pass	Students were	Students were	Students were
(1) hand coordination and	able to place	able to place	able to place
reaction speed.	balls to the side	the ball to the	the ball to the
(2) master the passing	of his body, and	side of his body,	side of his body,
power and angle.	use backhand	and use the	and use the
	motion to pass	backhand	backhand
	the ball	motion to pass	motion to pass
	accurately.	the ball little	inaccurately.
		accurately.	

The Performance Assessment

2. Students are able to shoot a basketball (P)

Assessment item	Criterial of score			
	3	2	1	
1. Basic shooting skills.	Steady ball	Moderately	Little steady ball	
(1) the correct way to	control, quick	steady ball	control, quick	
hold the ball.	basket selection,	control, quick	basket selection,	
(2) the choice of aiming at	coordinated and	basket selection,	coordinated and	
the basket point.	rotated shooting.	coordinated and	rotated shooting.	
(3) the coordinated force		rotated shooting.		
of the shooting action.				
(4) the angle and speed				
of the shot and the				
rotation of the ball.				
2. Shooting posture and	Accurate	Moderately	Inaccurate	
power control.	position and	accurate	position and	
(1) adjust the shooting	strength.	position and	strength.	
force to adapt to different		strength.		
distances				
(2) shooting angles				
3. Jump shot and layup	Accurate jump	Moderately	Inaccurate jump	
technique.	shot and layup	accurate jump	shot and layup	
(1) mastering the right	skills.	shot and layup	skills.	
form, timing, and use of		skills.		
power.				
(2) maintaining balance				
and controlling the				
rhythm of the shot.				

Appendix D The Results of the Quality Analysis of Research Instruments

Index of congruence (IOC) analysis of teaching course using microteaching method to improve achievement of basketball course of undergraduate students

	A		Exper	t	- T. ()	100	la tamanata ti an	
	Assessment Item	1	2	3	Total	IOC	Interpretation	
Les	son plan I: Basketball dribblin	g abil	ity					
1	The content is related to	+1	+1	+1	3	1.00	Most suitable	
	learning objectives.	71	Τ1	+1		1.00	MOST SUITABLE	
2	The learning processes are	+1	+1	+1	3	1.00	Most suitable	
	related to teaching.	71	71	Т1		1.00	MOSt suitable	
3	The learning objectives are							
	consistent with the subject	+1	+1	+1	3	1.00	Most suitable	
	matter.							
4	The learning activities are							
	related with using	+1	+1	+1	3	1.00	Most suitable	
	microteaching method.							
5	The assignment of practicing							
	basketball dribbling ability is	+1	+1	+1	3	1.00	Most suitable	
	related to the contents.							
6	There are various							
	assessments related to	+1	+1	+1	3	1.00	Most suitable	
	learning objectives.							
7	The measurement and							
	evaluation are related to	+1	+1	+1	3	1.00	Most suitable	
	learning objectives.							

	A		Exper	t			
	Assessment Item	1	2	3	Total	IOC	Interpretation
Les	son plan II: Basketball passing	abilit	У				
1	The content is related to	+1	+1	+1	3	1.00	Most suitable
	learning objectives.	1.1	11	1 1		1.00	MOSt Suitable
2	The learning processes are	+1	+1	+1	3	1.00	Most suitable
	related to teaching.	1 1	1.1	11		1.00	- Wost suitable
3	The learning objectives are						
	consistent with the subject	+1	+1	+1	3	1.00	Most suitable
	matter.						
4	The learning activities are						
	related to using	+1	+1	+1	3	1.00	Most suitable
	microteaching method.						
5	The assignment of practicing						
	basketball passing ability is	+1	+1	+1	3	1.00	Most suitable
	related to the contents.						
6	There are various						
	assessments related to	+1	+1	+1	3	1.00	Most suitable
	learning objectives.						
7	The measurement and						
	evaluation are related to	+1	+1	+1	3	1.00	Most suitable
	learning objectives.						

	A		Exper	t			
	Assessment Item	1	2	3	Total	IOC	Interpretation
Less	son plan III: Basketball shootir	ng abi	lity				
1	The content is related to	+1	+1	+1	3	1.00	Most suitable
	learning objectives.	1.1	11	1 1		1.00	MOSt Suitable
2	The learning processes are	+1	+1	+1	3	1.00	Most suitable
	related to teaching.	1 1	' 1	1 1		1.00	MOSt Suitable
3	The learning objectives are						
	consistent with the subject	+1	+1	+1	3	1.00	Most suitable
	matter.						
4	The learning activities are						
	related to using	+1	+1	+1	3	1.00	Most suitable
	microteaching method.						
5	The assignment of practicing						
	basketball shooting ability is	+1	+1	+1	3	1.00	Most suitable
	related to the contents.						
6	There are various						
	assessments related to	+1	+1	+1	3	1.00	Most suitable
	learning objectives.						
7	The measurement and						
	evaluation are related to	+1	+1	+1	3	1.00	Most suitable
	learning objectives.						

Analysis of difficulty value (p) and discrimination power (r) of the objective test to improve basketball technical ability by non-sample students

Dribbling ability	Difficulty value (p)	Discrimination power (r)	Consideration
ltem1	0.27	0.27	selected
ltem2	0.53	0.27	selected
Item3	0.80	0.13	cut off
ltem4	0.80	-0.13	cut off
ltem5	0.43	0.47	selected
ltem6	0.77	0.20	selected
ltem7	0.53	0.27	selected
ltem8	0.90	0.07	cut off
ltem9	0.57	0.07	cut off
ltem10	0.50	0.33	selected
ltem11	0.97	0.07	cut off
ltem12	0.70	0.33	selected
ltem13	0.57	0.07	cut off
ltem14	0.73	0.40	selected
ltem15	0.30	0.07	cut off
ltem16	0.57	0.20	selected

From the table analyzing the difficulty value (p) and the discrimination power (r) of the objective test to improve basketball technical ability, it was found that out of the 16 items of microteaching method. There were 9 quality items selected to be used for testing with the sample group. A difficulty value of between 0.27-0.77 and the discrimination power between 0.14-0.47, namely items 1, 2, 5, 6, 7, 10, 12, 14, and 16.

Passing ability	Difficulty value (p)	Discrimination power (r)	Consideration
ltem1	0.83	0.20	cut off
Item2	0.93	0.13	cut off
Item3	0.77	0.20	selected
Item4	0.37	0.33	selected
Item5	0.93	0.13	cut off
Item6	0.77	0.20	selected
Item7	0.77	0.07	cut off
Item8	0.67	0.27	selected
Item9	0.40	0.40	selected
Item10	0.70	0.33	selected
ltem11	0.70	0.47	selected
ltem12	0.63	0.33	selected

From the table analyzing the difficulty value (p) and the discrimination power (r) of the objective test to improve basketball technical ability, it was found that out of the 12 items of microteaching method. There were 8 quality items selected to be used for testing with the sample group. A difficulty value of between 0.37-0.77 and the discrimination power between 0.20-0.47, namely items 3, 4, 6, 8, 9, 10, 11, and 12.

Shooting ability	Difficulty value (p)	Discrimination power (r)	Consideration
ltem1	0.73	0.00	cut off
ltem2	0.73	0.53	selected
Item3	0.87	0.27	cut off
Item4	0.67	0.40	selected
ltem5	0.57	0.60	selected
ltem6	0.83	0.20	cut off
Item7	0.73	0.40	selected
Item8	0.67	0.67	selected
Item9	0.80	0.27	selected
Item10	0.80	0.27	selected
ltem11	0.80	0.27	selected
ltem12	0.67	0.53	selected

From the table analyzing the difficulty value (p) and the discrimination power (r) of the objective test to improve basketball technical ability, it was found that out of the 12 items of microteaching method. There were 9 quality items selected to be used for testing with the sample group. A difficulty value of between 0.57-0.80 and the discrimination power between 0.20-0.67, namely items 2, 4, 5, 7, 8, 9, 10, 11, and 12.

Index of Suitable Analysis of Teaching Course Based on Microteaching Method to Improve Basketball Technical Ability for Undergraduate students

Assessment Item	Ехр	oert Pe	rson	x	SD.	Interpretation	
	1	2	3				
Lesson plan I: Basketball dribb							
1.The content is related to the learning objectives.	5	5	5	5.00	0.00	Most suitable	
2.The learning objectives are consistent with the content.	5	5	5	5.00	0.00	Most suitable	
3.The learning processes are related to microteaching method.	5	5	5	5.00	0.00	Most suitable	
4.The Learning activities are related to microteaching method.	5	5	5	5.00	0.00	Most suitable	
5.The assignment of basketball dribbling ability related to microteaching method.	5	5	5	5.00	0.00	Most suitable	
6.There are various assessments related with learning objectives.	5	5	5	5.00	0.00	Most suitable	
7.The assessment list related with learning objectives.	5	5	5	5.00	0.00	Most suitable	

Assessment Item			x	SD.	Interpretation	
	1	2	3			
Lesson plan II: Basketball passi	ng					
1.The content is related to the learning objectives.	5	5	5	5.00	0.00	Most suitable
2.The learning objectives are consistent with the content.	5	5	5	5.00	0.00	Most suitable
3.The learning processes are related to microteaching method.	5	5	5	5.00	0.00	Most suitable
4.The Learning activities are related to microteaching method.	5	5	5	5.00	0.00	Most suitable
5.The assignment of basketball dribbling ability related to microteaching method.	5	5	5	5.00	0.00	Most suitable
6.There are various assessments related with learning objectives.	5	5	5	5.00	0.00	Most suitable
7.The assessment list related with learning objectives.	5	5	5	5.00	0.00	Most suitable

Assessment Item			x	SD.	Interpretation	
	1	2	3			
Lesson plan III: Basketball shoo						
1.The content is related to the learning objectives.	5	5	5	5.00	0.00	Most suitable
2.The learning objectives are consistent with the content.	5	5	5	5.00	0.00	Most suitable
3.The learning processes are related to microteaching method.	5	5	5	5.00	0.00	Most suitable
4.The Learning activities are related to microteaching method.	5	5	5	5.00	0.00	Most suitable
5.The assignment of basketball dribbling ability related to microteaching method.	5	5	5	5.00	0.00	Most suitable
6.There are various assessments related with learning objectives.	5	5	5	5.00	0.00	Most suitable
7.The assessment list related with learning objectives.	5	5	5	5.00	0.00	Most suitable

Basketball technical ability score before and after the project based on microteaching method for undergraduates

Objective			Post-t		•	Difference
test (26)	Performance test (30)	Total	Objective test (26)	Performance test (30)	Total	Score
9	15	24	19	23	42	18
8	16	24	18	23	41	17
16	13	29	22	22	44	15
16	12	28	23	24	47	19
17	16	33	25	24	49	16
17	11	28	24	22	46	18
15	10	25	23	22	45	20
18	18	36	23	29	52	16
11	17	28	21	23	44	16
15	12	27	21	21	42	15
12	18	30	18	27	45	15
7	13	20	17	22	39	19
19	13	32	23	24	47	15
10	14	24	20	24	44	20
7	15	22	16	24	40	18
11	10	21	20	23	43	22
19	12	31	24	23	47	16
18	17	35	26	26	52	17
5	18	23	18	28	46	23
9	18	27	19	26	45	18
19	16	35	24	25	49	14
19	19	38	23	28	51	13
13	18	31	22	25	47	16
10	10	20	20	23	43	23
19	18	37	24	26	50	13
10	11	21	19	24	43	22
9	18	27	21	26	47	20
	9 8 16 16 17 17 15 18 11 15 12 7 19 10 7 11 19 18 5 9 19 19 19 19 10 19	9 15 8 16 16 13 16 12 17 16 17 11 15 10 18 18 11 17 15 12 12 18 7 13 19 13 10 14 7 15 11 10 19 12 18 17 5 18 9 18 19 19 13 18 10 10 19 18 10 11	9 15 24 8 16 24 16 13 29 16 12 28 17 16 33 17 11 28 15 10 25 18 18 36 11 17 28 15 12 27 12 18 30 7 13 20 19 13 32 10 14 24 7 15 22 11 10 21 19 12 31 18 17 35 5 18 23 9 18 27 19 16 35 19 19 38 13 18 31 10 10 20 19 18 37 10 11 21	9 15 24 19 8 16 24 18 16 13 29 22 16 12 28 23 17 16 33 25 17 11 28 24 15 10 25 23 18 18 36 23 11 17 28 21 15 12 27 21 12 18 30 18 7 13 20 17 19 13 32 23 10 14 24 20 7 15 22 16 11 10 21 20 19 12 31 24 18 17 35 26 5 18 23 18 9 18 27 19 19 16 35 24 19 19 38 23 13 1	9 15 24 19 23 8 16 24 18 23 16 13 29 22 22 16 12 28 23 24 17 16 33 25 24 17 11 28 24 22 15 10 25 23 22 18 18 36 23 29 11 17 28 21 23 15 12 27 21 21 12 18 30 18 27 7 13 20 17 22 19 13 32 23 24 10 14 24 20 24 7 15 22 16 24 11 10 21 20 23 19 12 31 24 23 18 17 35 26 26 5 18 23 18 </td <td>9 15 24 19 23 42 8 16 24 18 23 41 16 13 29 22 22 44 16 12 28 23 24 47 17 16 33 25 24 49 17 11 28 24 22 46 15 10 25 23 22 45 18 18 36 23 29 52 11 17 28 21 23 44 15 12 27 21 21 42 11 17 28 21 23 44 15 12 27 21 21 42 12 18 30 18 27 45 7 13 20 17 22 39 19 13 32 23 24 47 10 14 24 20 24 44 <</td>	9 15 24 19 23 42 8 16 24 18 23 41 16 13 29 22 22 44 16 12 28 23 24 47 17 16 33 25 24 49 17 11 28 24 22 46 15 10 25 23 22 45 18 18 36 23 29 52 11 17 28 21 23 44 15 12 27 21 21 42 11 17 28 21 23 44 15 12 27 21 21 42 12 18 30 18 27 45 7 13 20 17 22 39 19 13 32 23 24 47 10 14 24 20 24 44 <

Student _	Pre-to	est scores (56	5)	Post-t	Difference		
number	Objective test (26)	Performance test (30)	Total	Objective test (26)	Performance test (30)	Total	Score
28	14	11	25	21	22	43	18
29	13	12	25	20	25	45	20
30	14	13	27	22	22	44	17
X	13.30	14.47	27.77	21.20	24.20	45.40	17.63
SD.	4.28	2.98	5.16	2.51	2.06	3.34	2.76

Appendix E Certificate of English



Appendix F Turnitin Plagiarism Check Report

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The Editorial Department of the Journal of MCU Ubon Review (TCI) of MCU, Ubon Ratchathani Campus has considered the article.

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USING MICROTEACHING METHOD TO IMPROVE BASKETBALL TECHNOLOGY ABILITY FOR UNDERGRADUATE STUDENTS

¹Wang Lei, ²Supaporn Srihamee, and ³Phenporn Thongkamsuk Bansomdejchaophaya Rajabhat University, Bangkok, Thailand ¹hdhq366@163.com

Abstract

The objectives of this research were 1) to use microteaching method to improve basketball technology ability, and 2) to compare students' basketball technology ability before and after the implementation based on microteaching method. The sample group consists of 30 undergraduate students, at Qingdao Agricultural University in China, through cluster random sampling. The research instruments were 1) lesson plans by using microteaching method, and 2) basketball technology ability achievement test. The assessment questions aimed to assess two sub-variables within the dependent variable, including: (1) multiple choice test of concept basketball knowledge and (2) performance assessment. The research was analyzed by mean, standard deviation and T-test for dependent sample. The results were as followings:

- 1. Using microteaching method to improve basketball technology ability of undergraduate students. The researcher has studied the documents and research related the microteaching method and synthesized into 5 steps: 1) Preparing teaching materials in advance, 2) Conducting role simulation, 3) Recording by camera, 4) Replaying and observing, and 5) Feedback and evaluation. The data analyzed the quality of the lesson plan by 3 experts, the results are shown overall, the suitability of the research objectives is the most suitable. After 30 students have learned in 5 steps the average score before learning was 27.77, the average score after learning was 45.40. The after learning score was found to be higher than the before learning score. Therefore, using microteaching method, the students' basketball technology ability was improved obviously.
- 2. The comparison of students' basketball technology ability before and after implementation based on microteaching method. The results found that, the results found that basketball technology ability score of students after learning higher than before learning is statistically significant at the .01 level. When considering the results of data analysis classified by contents: 1) basketball dribbling ability, 2) basketball passing ability, and 3) basketball shooting ability. The results found that, the basketball technology ability score of students after learning higher than before learning statistically significant at the level .01 for all contents. Therefore, using microteaching method could improve students' basketball technology ability.

Keywords: Microteaching Method, Basketball Technology Ability, Undergraduate Students

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Introduction

The Ministry of Education (2002) issued Notice of the Ministry of Education on the Issuance of the National Physical Education Teaching Guidelines for Colleges and Universities. The evaluation of physical education curriculum covered three areas: students' learning experience, teachers' teaching methods and the overall construction of the curriculum. Among them, students' learning evaluation was an important link, which ran through the whole physical education activities. Students' learning assessment should be a comprehensive evaluation of their learning outcomes and processes, which mainly covered physical and athletic skills, cognitive ability, learning attitude and behavior, interpersonal communication and cooperative spirit, as well as emotional expression, etc. In the specific evaluation, universities or colleges should adhere to the "three-dimensional" objective as the basis, pay attention to the combination of formative assessment and final test, evaluate peacetime training effect and extracurricular practice activities, and integrate other educational means for comprehensive evaluation. The main content of teacher teaching evaluation covered the professional quality of teachers and classroom teaching (The Ministry of Education, 2002).

The sport of basketball, basketball is the fastest-growing sport in the world. Basketball is a tremendously popular spectator sport, particularly on television. The televising of NBA games worldwide and of men's and women's college games nationally has influenced many young athletes to participate in the sport. The international growth of basketball has created even more excitement and participation. Currently, over 200 countries have basketball federations. And basketball is for everyone (Hal Wissel, 2012). Xiong Lei (2014) pointed out that basketball skills and abilities played an indispensable role in teamwork. The outcome of a basketball match often depended on the tacit understanding between the players and the skill level. Basketball was a sport that required teamwork. Each player must work closely with his teammates on the court to face each other's challenges. The application of technical ability would not only affect the individual performance of players, but also directly affect the combat effectiveness of the whole team. Gao Huafeng (2015) emphasized the constituent elements of basketball technology ability, and deeply discussed and studied the three key indexes of dribbling ability, passing ability and shooting ability in the competitive ability system.

Performance in high-level basketball is a very complex process to understand, mainly due to its dependency on a substantial number of dynamical interactions between technical, tactical, fitness and anthropometric characteristics of players. Chai Zhiming (2017) stated that basketball could also strengthen their determination, self-confidence and team spirit. Basketball could also provide a good physical foundation for athletes. Basketball was not only a physical activity, but also an excellent body shape and fitness method, because during the game, the players needed to constantly move, jump and compete, which were effective ways to exercise the muscles of the whole body. Sampaio J., et al. (2018) pointed out that basketball was a team sport where

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box-score statistics were often used to help identify the reasons that explained the game's outcome. However, the box scores only contained information that described the frequency of actions performed by players of both teams in a game. Player-tracking technology was one of the most recent technological advances in basketball. In all professional and developmental basketball leagues, the data-gathering process was standardized and regulated by the operational definitions and criteria published in the Basketball Statisticians Manual. Liu Pengfei (2019) pointed out the effectiveness of basketball technology could also be influenced by the employment of diverse technological instruments. He carried out studies to assess how technology influenced the lesson planning process. It was found that applying basketball technology enhanced the planning process's overall quality and simultaneously boosted effectiveness.

The teaching method is important for basketball technique. The microteaching method, with the emphasis on controlled practice, audio-visual technology, and peer observation, is an effective tool for teaching development. It improves teaching skills and fosters a collaborative and reflective teaching community. Kolb, D. A. (1984) stated that microteaching provided teachers with the opportunity to experiment with different teaching strategies and received feedback from their peers and mentors. This, in turn, helped them to improve their teaching skills and become more effective educators. Kolb's statement underscored the value of microteaching as a professional development tool for teachers. By providing a controlled environment in which teachers could experiment with various teaching strategies, microteaching offered a unique opportunity for teachers to gain practical experience and refine their techniques. Microteaching method offered teachers a controlled environment to experiment, learn from feedback, and refine their teaching practices, ultimately leading to better outcomes for students and the teachers. Which is consistent with Stiggins, R. J. (2004) pointed out that as a modern teaching mode, microteaching method emphasized on achieving the best teaching effects within a limited time. In this process, planned teaching was particularly important. Firstly, set up clear teaching objectives, teachers could clearly determine the specific goals and expected effects of each lesson, and make the teaching more targeted and directional. This not only helped teachers to prepare teaching contents in a targeted way, but also clarify their learning direction and improve their learning efficiency. Secondly, improve teaching efficiency. With the reasonable arrangement of teaching contents and time management, teachers could ensure that teaching tasks were completed in limited time and avoided the waste of class time. Thirdly, ensure the quality of teaching. By carefully designing and planning the teaching process, planned teaching could also promote teachers to reflect on and optimize the teaching methods and strategies in order to continuously improve the teaching quality. Fourthly, optimize teaching methods. Teachers needed to constantly try and explore new teaching methods and strategies to adapt to different teaching contents and students' needs. Through practice and summary, teachers could gradually optimize the teaching method, improve the teaching effect and students' learning experience. This process of continuous exploration and optimization helped to promote teaching innovation and development.

To sum up, the success of basketball technology ability is influenced by multiple elements, such as variations in personal learning and teaching approaches, environmental conditions, and technological usage can influence the efficiency of basketball training techniques. This research is based on microteaching method to improve basketball technology ability for undergraduate students, the application of microteaching method could significantly improve students' skills in dribbling, passing and shooting are the basic skills that basketball players must master. The proficiency of these skills directly affects the performance of the players on the field and the overall strength of the team. And this teaching can help them better understand the key points and difficulties of movement, so as to grasp and understand faster the teaching contents in class.

Research Objective

- 1. To use microteaching method to improve basketball technology ability for undergraduate students.
- To compare students' basketball technology ability before and after the implementation based on microteaching method.

Research Hypotheses

After implementing microteaching method, the students' basketball technology ability was improved obviously.

Literature review

This research was to use microteaching method to improve achievement of basic basketball skill course of undergraduate students. The researcher has reviewed the literature and proposed related theories and research as follows:

1. The significance of microteaching method

The importance of microteaching method in teacher training has been emphasized by many scholars and educators.

Kolb, D. A. (1984) stated that microteaching provided teachers with the opportunity to experiment with different teaching strategies and received feedback from their peers and mentors. This, in turn, helped them to improve their teaching skills and become more effective educators. Kolb's statement underscored the value of microteaching method as a professional development tool for teachers. By providing a controlled environment in which teachers could experiment with various teaching strategies, microteaching method offered a unique opportunity for teachers to gain practical experience and refine their techniques. This experimental phase was crucial, as it allowed teachers to test new approaches and identify which strategies were most effective in engaging students and achieving educational objectives. The feedback mechanism within microteaching was equally important. By receiving feedback from

peers, mentors provided teachers with valuable insights into their performance. This feedback often highlighted strengths and weaknesses in teaching styles, enabled teachers to identify areas for improvement. Moreover, the iterative nature of microteaching—trying out new strategies, receiving feedback, and then adjusting approach—promoted continuous professional growth and development. Microteaching offered teachers a controlled environment to experiment, learn from feedback, and refine their teaching practices, ultimately leading to better outcomes for students and the teachers.

Harris, J. & Jones, M. (2014) highlighted that microteaching could help teachers to plan and prepare their lessons more effectively by identifying potential challenges and areas for improvement. The microteaching process typically involved several stages, including planning, teaching, and reflection. During the planning stage, teachers prepared a lesson plan and identified the specific teaching skills they want to practice. In the teaching stage, they delivered the lesson to a small group of students in a simulated class setting, while being observed by their peers or mentors. After the teaching session, they received feedback on their performance and reflected on their teaching practice to identify areas for improvement. During the planning stage of microteaching, teachers prepared a lesson plan and identified the specific teaching skills they wanted to focus on. This planning process was crucial because it allowed teachers to anticipate potential challenges and areas for improvement in their teaching practice. By planning and preparing lessons effectively, microteaching method could also help teachers to become more confident in their abilities. As teachers gained experience with microteaching, they developed a deeper understanding of their own teaching style and strengths. Additionally, the reflection stage of microteaching was an important component of the process. After teaching a lesson, teachers were encouraged to reflect on their performance by considering areas where they succeeded and where they could have improved. This reflection helped teachers to gain valuable insights into their teaching practice and to identify areas for future professional development.

2. The elements of Simpson Instructional Model

Hamad, A. Q. & Saud, L. M. (2015) pointed out that the five steps of microteaching method included: 1) Preparing relevant teaching knowledge in advance. Before conducting microteaching, teachers should learn basic theories, teaching objectives, teaching skills, teaching design and other relevant knowledge of microteaching, so as to form a certain cognitive structure and improve the perceptibility and transmission efficiency of teaching skills. 2) Performing a role. The teacher should clarify the training objectives and requirements of the teaching skills, as well as the types, functions, roles and methods of teaching skills, so that students had a clear understanding of the training objectives. 3) Filming. In order to enhance students' perception of teaching skills, they could watch vivid microteaching demonstration films or on-site demonstrations by teachers to help students form a preliminary understanding of teaching skills. 4) Playing back and watching. According to the teaching objectives, teaching contents, teaching methods, teaching steps, etc., to guide microteaching practice.

5) Response and evaluation. Teachers performed role playing and micro-practice according to the written teaching plan, simulated real teaching scenes, applied the teaching skills, and received evaluation and feedback from other participants.

Huang Zhihong (2017) mentioned that the five important aspects of microteaching methods were interrelated, which together constituted a complete teaching system. These five areas included: 1) Organizing teaching materials in advance. Clear, specific and measurable teaching objectives were the cornerstone of microteaching method, which provided clear direction and expected outcomes for teachers and students. 2) Staging a role. Choosing appropriate teaching contents and organizing it in a logical order according to students' cognitive characteristics and students' understanding. 3) Capturing on camera. Use a variety of teaching methods and skills, such as explanation, demonstration, discussion, practice, etc., to meet the learning needs from different students by camera. 4) Repeating and observing. Timely acquisition of student feedback and evaluation of teaching process would help teachers adjust teaching strategies and improve teaching effects. 5) Feedback and estimation. Teachers constantly reflected on their own teaching practice in the process of microteaching method, summed up experiences and lessons, and improved their teaching ability and professional quality.

Chen Song & Chen Feng (2018) stated that microteaching was a teaching method aimed at training teachers to practice and reflect on their teaching skills by simulating a real class environment: 1) Preparing teaching aids in advance. Objectives should be set in line with the overall objectives of the course by considering the actual situation and needs of the students. Clear teaching objectives helped to ensure the pertinence and effectiveness of the teaching process. 2) Enacting role modeling. The core of microteaching was to cultivate teachers' teaching skills. In this process, teachers need to learn and master a series of teaching skills, such as explaining skills, questioning skills, and so on. 3) Recording footage. In microteaching method, teaching behavior analysis was an important link. By videotaping and playing back teachers' teaching behaviors, teachers could observe their own performance in class. 4) Reliving and monitoring. Teaching feedback mechanism was an indispensable part of microteaching. By collecting feedback from students, colleagues, mentors and other aspects, teachers could understand their own strengths and weaknesses in teaching. 5) Response and estimation. In microteaching, teaching evaluation was a continuous process. Through the comprehensive evaluation of teaching objectives, teaching skills, teaching behavior and teaching feedback, teachers could understand their own teaching effectiveness and students' learning outcomes. Based on these evaluation results, teachers could make targeted improvement plans to improve their teaching level and effect.

Ji Rongrong (2020) pointed out the five important aspects of microteaching methods: 1) Preparing instructional materials in advance. Microteaching method emphasized the clarity and specificity of teaching objectives. 2) Facilitating simulated roles. The content of microteaching method was usually selected, so that students could grasp the key points more quickly. 3) Videotaping. Microteaching methods encouraged students to actively participate, including questions, discussions and practice activities

to enhance students' learning effect. 4) Playing back and watching. In microteaching method, teachers would give timely feedback to students, which helped students understand their learning progress. 5) Feedback and evaluation. Microteaching method was a process of continuous improvement. Teachers would adjust teaching strategies according to students' feedback and teaching results to optimize teaching results.

Wang Hao (2022) stated that microteaching method was a kind of teaching method for the purpose of teacher training, which was usually used to cultivate and improve teachers' teaching skills. Microteaching method consisted of the following five main components: 1) Organizing relevant materials in advance. In the first stage of microteaching, teachers needed to receive relevant theoretical learning. This included the basic principles and theories of pedagogy, psychology, and pedagogy, as well as concepts, principles, and methods of microteaching. 2) Orchestrating a role. In this stage, teachers would learn and master various teaching skills, such as introduction skills, questioning skills, explaining skills, presentation skills, closing skills, etc. Through training and practice, teachers could gradually get familiar with and master these skills and lay a solid foundation for the subsequent practical operation. 3) Capturing on camera, teachers would use the theories and skills they have learned to carry out practical teaching. This included designing teaching programs, preparing teaching materials, organizing teaching activities, and managing classroom discipline. Practical operation aimed to enable teachers to transform theoretical learning and skill training into practical teaching ability and improve teaching effect. 4) Repeating and observing. In the microteaching process, teaching feedback was a very important part. After teaching practice, teachers needed to accept feedback from colleagues, tutors or students. The feedback could help teachers understand their own advantages and disadvantages in teaching and provide a basis for the subsequent teaching improvement. 5) Response and evaluation. According to the teaching feedback, teachers needed to reflect on and improve their own teaching. This might involve the adjustment of teaching programs, the improvement of teaching methods, the optimization of classroom management and so on.

In conclusion, the microteaching method's dimensions were crucial components that affected the efficiency of the methodology in enhancing teachers' teaching abilities. Teachers could design a complete and effective microteaching plan that helped them perfect their teaching skills and become more effective teachers by examining each of these factors. The researcher had synthesized from many academics and synthesized for 5 steps to improve basketball technology ability: 1) Preparing teaching materials in advance, 2) Conducting role simulation, 3) Recording by camera, 4) Replaying and observing, and 5) Feedback and evaluation.

3. Basketball technology ability course

The basketball technology ability of the players is regarded as the core element of winning. Basketball is a highly technology. Therefore, it is vital for basketball players to continuously improve their technical strength.

3.1 Basketball dribbling ability

Introducing the learning objectives of basketball dribbling. The teacher first introduces this lesson's teaching contents and learning objectives to the students and explains the content and importance of the teaching objectives in detail. Students can clearly understand the teaching objectives to achieve the expected teaching effect. (1) Basic dribbling posture and skills; (2) Basic movements of dribbling; (3) Dribble changes and combinations; (4) Dribble with offense and defense

3.2 Basketball passing ability

Basketball passing ability is an indispensable key skill in basketball games. It can not only create offensive opportunities, mobilize the offensive enthusiasm of teammates, but also effectively kill the opponent's defensive will and improve the game's enjoyment. Accurate passing not only shows the individual ability of the players, but also reflects the teamwork and wisdom of the whole team, which plays a crucial role in determining the outcome of the game. Therefore, students should pay attention to the practice and improvement of passing skills. (1) Basketball direct pass skill; (2) Basketball slant pass skill; (3) Basketball backhand pass skill.

3.3 Basketball shooting ability

Basketball shooting ability plays a very important role in basketball games. Whether it is from the point of view of scoring means, tactical core, confidence building, game rhythm, teamwork, confrontation advantage or skill improvement, shooting ability is one of the necessary core skills for players. Therefore, players need to improve their shooting ability through continuous training and practice in order to achieve better results in the game. (1) Basic shooting skills; (2) Shooting posture and power control; (3) Jump shot and layup technique.

Research Methodology

The Population

There are 60 freshmen students, majoring in civil engineering at Qingdao Agricultural University, in the second semester of the academic year 2023. There were 30 students in each class. (There was mixed ability in each class: high level, medium level and low level.)

The Sample groups

Through a random cluster sampling method, there were 30 freshmen students, majoring in civil engineering at Qingdao Agricultural University, with class 1 in the second semester of the academic year 2023.

Research Instrument

Using microteaching method to enhance basketball skill of undergraduate students. The research instruments are as follows:

1. Lesson plan based on microteaching method

1.1 Study guidelines for microteaching method from many academics: Hamad, A. Q. & Saud, L. M. (2015); Huang Zhihong (2017); Chen Song & Chen Feng (2018); Ji Rongrong (2020); and Wang Hao (2022) design detail in the course.

- 1.2 Create 3 lesson plans on dribbling ability, passing ability and shooting ability, totaling 18 hours. By designing lesson plan using microteaching method, each lesson plan specifies the following aspects: 1) Preparing teaching materials in advance, 2) Conducting role simulation, 3) Recording by camera, 4) Replaying and observing, and 5) Feedback and evaluation.
- 1.3 The finished lesson plan was submitted to the thesis advisor to verify the suitability and consistency of the content. Then improve the teaching effect according to the suggestion. After revising lesson plans, the researcher took them to 3 experts to detect the accuracy of the content and completeness of the lesson plan and calculate the Index of Item Objective Congruence (IOC). The result of lesson plan had an IOC=1.00 for all contents.
- 1.4 The finished lesson plan was presented to the expert to verify the suitability and consistency of the content. Alignment of objectives with learning activities and the possibility of activities. Then enhance the method according to the suggestion.

2. Achievement of basketball course test

Basketball technology ability by using microteaching method to improve basketball skill of undergraduate students: 1) Basketball dribbling; 2) Basketball passing; and 3) Basketball shooting. The steps in creating and determining the quality of achievement test are as follows:

- 2.1 Basketball technology ability performance assessment
- 2.1.1 The procedures for creating the performance assessment, which is a practical test 3 contents, 10 items, with steps to create and find quality as follows: Content analysis, competence and learning objectives consistent with the lesson plan on basketball dribbling ability: 1) Dribbling posture and skills, 2) Movements of dribbling, 3) Dribble changes and combination, and 4) Dribble with offense and defense. Basketball passing ability: 1) Direct pass, 2) Slant pass, and 3) Backhand pass. And basketball shooting ability: 1) Basic shooting skills, 2) Shooting posture and power control, and 3) Jump shot and layup technique.
- 2.1.2 Submit basketball technology ability performance assessment criteria created by three experts for measurement and inspection. The Experts check the content validity and calculate the Index of Item Objective Congruence (IOC). The consistency indicator of each evaluation content is greater than or equal to 0.50 and is considered suitable for research. The result of the IOC at 1.00 for all assessment items. After that, try out with students who were non-sample for 30 students to analyze the quality of confidence values in performance assessment by analysis the reliability by Cronbach's Coefficient Alpha method at 0.74.

2.2 Multiple-choice

2.2.1 Study the theory about how to create multiple choice questions test and created multiple choice questions test for 3 lesson plans about the basic knowledge of each content were 1) basketball dribbling ability; 2) basketball passing ability; and 3) basketball shooting ability were totally 26 items to measure the achievement of

basketball technology ability. The scoring criteria 1 point for correct answer and 0 point for wrong answer.

2.2.2 Improve and revise items test that have been verified by experts. Then took it to try out with students who were not a sample group for 30 students to calculate the quality of the test. The results of the quality analysis of the questions found that there were 26 questions, difficulty value (p), discrimination power (r), and reliability: 1) Basketball dribbling ability, there were 9 questions (p=0.27-0.77, r=0.20-0.47), 2) Basketball passing ability, there were 8 questions (p=0.37-0.77, r=0.20-0.47), and 3) Basketball shooting ability, there were 9 questions (p=0.57-0.80, r=0.27-0.67). And checking the quality of basketball technology ability, which was determined by Kuder Richardson's method, the reliability (KR-20) at 0.78.

Data Collection

- 1. Data collection and verification for test instrument:
- 1) Collaborate with three expert scholars to distribute an official paper from Bansomdejchaopraya Rejabhat University's professionals, providing details on the data gathering procedure and research instruments, including an instructional model and a checklist for evaluating its quality (Index of Objective Consistency: IOC).
- 2) Gather information and analytical data from three expert scholars for evaluation (Index of Objective Consistency: IOC).
 - 2. Data collection and validation for research work.
- 1) Pertinent scholarly investigation: Accumulate data pertinent to the literature to ascertain the duration of the research: the official study was scheduled in June 2024, with data gathering occurring post the conclusion of the experimental research.
- 2) Pre-teaching and post-teaching examination: This research was experimental research according to One Group Pretest Posttest Design

Research Results

- 1. Using microteaching method to improve basketball technology ability for undergraduate students, the researcher has studied guidelines for microteaching method from many academics and synthesized for 5 steps to improve basketball technology ability: 1) Preparing teaching materials in advance, 2) Conducting role simulation, 3) Recording by camera, 4) Replaying and observing, and 5) Feedback and evaluation. The quality of the lesson plan by 3 experts, and the results are shown overall, the suitability of the research objectives is the most suitable. After 30 students have learned in 5 steps the average score before learning was 27.77, the average score after learning was 45.40. The after learning score was found to be higher than the before learning score. Therefore, using microteaching method, the students' basketball technology ability was improved obviously.
- 2. The comparison of students' basketball technology ability before and after the implementation based on microteaching method. The researcher implemented basketball technology ability based on microteaching method with 30 students. The comparison of students' basketball technology ability before and after learning to analyze the data using average statistics, standard deviation, and t-test for dependent samples which the data analysis results are shown in table 1.

Table 1 The comparison of students' basketball skill score before and after the learning by using microteaching method

Basketball skill	Testing	n	Full score	$\overline{\mathbf{X}}$	SD	df	t	р
Dribbling	pretest	30	21	11.07	3.37	29	16.60**	0.00
skill	posttest	30	21	17.10	1.99	29	10.00.	
Passing	pretest	30	17	8.73	2.49	20	17.77**	0.00
skill	posttest	30	17	14.17	1.42	29		
Shooting	pretest	30	18	7.97	1.38	29	32.07**	0.00
skill	posttest	30	18	14.13	1.14	29	32.07	0.00
Total	pretest	30	56	27.77	5.16	29	34.99**	0.00
	posttest	30	56	45.40	3.34	29	34.99	

^{**}p<.01

From Table 1, the comparison of students' basketball skill score before and after learning by using microteaching method The result found that basketball skill score of students after learning higher than before learning statistically significant at the level .01. When considering the results of data analysis classified by content: dribbling skill, passing skill, and shooting skill. The result found that basketball skill score of students after learning higher than before learning statistically significant at the level .01 for all contents. Therefore, learning by using microteaching method could improve students' basketball skill.

Research Discussion

Using microteaching method to improve basketball technology ability for undergraduate students and compare students' basketball technology ability before and after the implementation based on microteaching method. The research could be discussed as follows:

1. Using microteaching method to improve basketball technology ability before and after learning, the average score before learning was 27.77 and the average score after learning was 45.40. The after learning score was found to be higher than the before learning score. Therefore, using microteaching method, the students' basketball technology ability was improved obviously. It's because microteaching method was regarded as an efficient and practical way to train teachers in their teaching skills. Microteaching skills training system was a complete and flexible teaching system platform based on human-machine interactive model. The researcher has taken the views of the academic importance of many academics and integrated them to develop 3 lesson plans clearer and synthesize for learning 5 steps: 1) Preparing teaching materials in advance, 2) Conducting role simulation, 3) Recording by camera, 4) Replaying and observing, and 5) Feedback and evaluation. Harris, J. & Jones, M. (2014) said that, microteaching could help teachers to plan and prepare their lessons more effectively by identifying potential challenges and areas for improvement. The microteaching process typically involved several stages, including planning, teaching, and reflection. During the planning stage, teachers prepared a lesson plan and identified the specific teaching skills they want to practice. In the teaching stage, they delivered the lesson to a small group of students in a simulated class setting, while being observed by their peers or mentors. As teachers gained experience with microteaching, they developed a deeper understanding of their own teaching style and strengths. After teaching a lesson, teachers were encouraged to reflect on students' performance by considering areas where they succeeded and where they could have improved. Consistent with Tan Chenhong & Tan Gonghao (2017) said that, microteaching method were use of modern audiovisual technology and recording equipment. These tools allowed teachers to record and review their own teaching practices and student skills development, and allowed for critical reflection and analysis. Teachers and students could identify areas for improvement accordingly. Huang Zhihong (2017) stated that microteaching method could classify complex teaching skills into simple and tiny single skills according to teaching objectives, so that the teaching objectives were more clear and more specific, and the training was more targeted, which was conducive to students' learning and mastering. For example, in basketball teaching, the basic technical movements such as dribbling, shooting, defensive turning, and fast movement could be broken down and taught to make it easier for students to grasp and understand the gist of each movement. And consistent with Chen Song & Chen Feng (2018) mentioned, the microteaching method focused on specific teaching skills through short teaching segments and recording by means of video. Participants could observe, analyze and improve themselves, which was an effective way to improve teaching ability and helped teachers to accurately improve teaching level. Moreover, Zhao Shaoren (2019) pointed out that microteaching also paid attention to students' selfevaluation and reflection and helped students better understand their shortcomings and progress so as to study and practice harder. Xia Yu (2021) said that microteaching paid attention to students' practice and feedback, and teachers could find problems and correct them in time by observing students' practice process. This could help students to correct mistakes faster and improve the accuracy and standardization of technical movements. Lin Peiquan (2021) commented that using video or multimedia demonstration, coupled with detailed explanation and explanation, would become a vivid teaching example. In this way, students could see the execution process of each action more clearly so as to better understand and master. Especially after the decomposition of motor skills, the teaching content was simple and easy, and the theme was concentrated, which was conducive to students' repeated practice, in-depth understanding and mastery of the essentials of movement.

2. The comparison of students' basketball technology ability before and after implementation based on microteaching method. The results found that, the results found that basketball technology ability score of students was statistically significant at the .01 level. When considering the results of data analysis classified by contents: 1) basketball dribbling ability, 2) basketball passing ability, and 3) basketball shooting ability. Basketball technology ability score of students after learning higher than before learning statistically significant at the level .01 for all contents. Therefore, using

microteaching method could improve students' basketball technology ability. Gao Huafeng (2015) aimed to explore the effectiveness of microteaching method in improving junior high school students' basketball skills, this studied 20 students in the experimental group and 20 students in the control group. The experimental group received microteaching, and the key movement exercises were strengthened through subdivision skills, repeated video playback and immediate feedback. The control group followed the traditional teaching method. The results showed that the students in the experimental group had significant improvement in the mastery of basketball skills, movement norms and practical application, which provided a new and effective way for junior high school basketball teaching. Li Fei (2015) researched on competitive performance of China University Basketball Super League, this study set up an experimental group and a control group, with 15 college students in each group. The experimental group adopted the microteaching method to teach basketball dribbling techniques. This method helped students to deeply understand and master the essence of dribbling through subdivision of dribbling skills, real-time video analysis, personalized guidance and repeated practice. The experimental results showed that the students in the experimental class had made remarkable progress in the practical application of basketball dribbling technology. The technical movements were more proficient, the stability and creativity of dribbling in the game were greatly improved. Lai Feng & Chen Gong (2016) an empirical study on the influence of microteaching method on basketball dribbling ability. The experimental group and the control group, each group of 20 middle school students with similar basketball foundation, with an average age of 15 and a balanced male-female ratio to ensure that there were no significant differences between the two groups under the initial conditions. After using microteaching training, students in the experimental group significantly improved their basketball dribbling ability and significantly improved their performance compared with the pre-test. Although students in the control group have improved to a certain extent, the improvement may not be as significant as that in the experimental group due to the lack of key links such as video playback, self-reflection and peer feedback in the microteaching method. Hao Yuerong (2018) researched on the model of Chinese national competitive basketball team. Starting in this experiment, 10 primary school fifth grade students were selected from the experimental class and the same number of students from the control class. The experimental class used microteaching method to conduct detailed decomposition and intensive training for basketball shooting techniques, and effectively improved the accuracy of shooting through instant feedback and repeated practice. In contrast, the control class continued to use the usual pedagogy throughout the experiment. After 4 weeks of special training, the evaluation results showed that the students' basketball shooting ability had been significantly improved, which confirmed the positive role of microteaching method in improving the students' basketball shooting skills. And Xia Yu (2021) verified the effectiveness of microteaching in improving students' learning effect by comparing the learning initiative and basketball skill level of students in the experimental group and the control group after using microteaching method in the process of basketball learning. It was assumed that students in the experimental group using microteaching method would significantly improve their initiative and basketball skills in learning basketball compared with students in the control group using traditional teaching methods. Experimental group: 30 students from different classes of the same grade were randomly selected to ensure that the students in the experimental group had the same basic level of basketball.

In summary, the microteaching method can effectively improve students' basketball skills in the mastery of basketball skills, movement norms and practical application, which provided a new and effective way. This method helped students to deeply understand and master the essence of basketball skills by real-time video analysis, personalized guidance and repeated practice. Teachers can divide basketball skill tasks into several small tasks, such as dribbling, passing, shooting, so that students can gradually achieve their learning goals. Teachers can organize small tasks into an organic whole, so that students can constantly explore, find and solve problems in practice. Teachers give students feedback in time to help them correct mistakes, evaluate students' skill level, understand students' learning situation and skill level, and provide basis for further teaching. Through the application of microteaching method, students can gain more rich and comprehensive learning experience in basketball skills class and improve their learning effect and skill level.

Research Suggestion

Microteaching method is a teaching method that uses modern audiovisual technology and recording devices to play an important role, allowing teachers to record and monitor their own teaching methods and the development of students' basketball skills. Researchers presented recommendations as follows:

General recommendation

- 1. Teachers should prepare supplementary teaching plans for students who lack skills in various areas, such as students who are not stable in dribbling. They can be given special dribbling exercises and have them practice dribbling with different speeds and directions, changing directions, etc. Through targeted training, students can improve their technical level more quickly.
- Divide students into small groups. Teachers should encourage each group of students to help each other strictly and participate in suggesting ways to develop students' basketball skills.
- 3. Teachers should encourage students to practice several times after class, and provide students with enough practice time and opportunities in the process of applying microteaching method.
- 4. Video analysis can help students understand technical movements. Teachers should observe and analyze students' technical movements, so that students can get the shortcomings of their technical movements more clearly.

Suggestions for future research

- Combine microteaching method and virtual reality (VR) technology to improve students' basketball technology ability and compare with traditional teaching methods
- Combine big data and artificial intelligence technology to analyze and evaluate basketball movements of students.
- Foster students' competitive awareness and ability to withstand pressure through simulated competition scenarios and adversarial training.
- 4. Develop comprehensive basketball technology ability evaluation criteria, including the accuracy, fluency, and practical application of technical movements.
- 5. Use microteaching methods to improve achievement in other practical skills for students at all levels.

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