

USING SIMPSON INSTRUCTIONAL MODEL TO IMPROVE VOLLEYBALL SKILL OF UNDERGRADUATE STUDENTS



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Abstract

The objectives of this research were 1) to use Simpson Instructional Model to improve volleyball skill of undergraduate students and 2) to compare students' volleyball skill before and after the implementation based on Simpson Instructional Model. The sample group of the study consisted of 30 freshmen at Chongqing Vocational College of Media in China, through cluster random sampling. The research instruments included 1) lesson plans based on Simpson Instructional Model and 2) volleyball skill achievement test. The assessment questions aim to assess two sub-variables within the dependent variable, including: (1) multiple choice test of concept volleyball knowledge and (2) performance assessment. The data were analyzed by mean, and standard deviation and T-test for dependent sample. The results revealed the followings:

1. Using the Simpson Instructional Model to improve volleyball skill of undergraduate students. The researcher has studied the documents and research related on Simpson Instructional Model and synthesized into 7 steps: 1) Perception, 2) Preparation, 3) Guided response, 4) Mechanism, 5) Complex response, 6) Adaptation, and 7) Creation. The data analysis was assessment of the quality of the lesson plan by 3 experts, and the results are shown the quality of the lesson plan by experts overall, the suitability of the research objectives has the most suitable. After 30 students have learned according to the 3 lesson plans, the results are shown, students' achievement of the volleyball skill the average score after learning was 48.97 which was higher than the average score before learning was 28.70.

2. The comparison of students' volleyball skill score before and after learning by using Simpson Instructional Model. The result found overall that students' volleyball skill score after learning higher than before learning statistically significant at the level .01. When considering the results of data analysis classified by content: serving skill, spiking skill, and blocking skill. The result found that students' volleyball skill score after learning higher than before learning statistically significant at the level .01 for all contents. Therefore, learning by using Simpson Instructional Model could improve students' volleyball skill.

Keywords: Simpson Instructional Model, Volleyball Skill, Undergraduate Students

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Introduction

The General Administration of Sport of the People's Republic of China (2023) pointed out in the overall requirements of the "National Fitness Plan (2023)" that sports are an important support for the great rejuvenation of the Chinese nation, and national fitness is the basic sports right of all people, and an important foundation for achieving national strength and people's happiness. As a nationwide popular sport, it is deeply loved by the people of the whole country. Volleyball originated in the United States. In 1895, William G. Morgan invented it in Holyoke, Massachusetts. Around 1900, volleyball was introduced to Canada from the United States. In 1905, volleyball was introduced to countries such as Cuba, Brazil, and China, becoming a popular fashion sport worldwide at that time (Hao Shifeng, 2019). In recent years, due to the increase in the number of volleyball players, the demand for training methods that are both effective and help athletes improve their skills has correspondingly increased. Volleyball course is one of the three major ball courses and also the core course of physical education. But now, the total class hours of volleyball courses have gradually decreased from 72 in the 1970s and 1980s to 48, which is not conducive to improving their teaching quality. According to national policies, the transition from teaching to testing and then to quality education is not easy, and obviously cannot meet the needs of cultivating volleyball professional education talents in the new era. Despite the continuous reduction of class hours, the quality of the curriculum should still be guaranteed, and we must constantly try teaching reform (Huang Xinyun, 2015).

College volleyball courses should be combined with compulsory and elective courses, the class hours and credits can be clearly defined. The teaching goal emphasized skill mastery, the improvement of physical quality, tactical awareness and mental health. The teaching method emphasized the combination of theory and practice, adopted stratified teaching and multimedia teaching. The evaluation system was diversified and paid attention to the process evaluation to ensure the site facilities, improve the level of teachers and encourage curriculum development, such as intramural competitions, inter-school exchanges, etc., in order to comprehensively improve students' volleyball ability (The Ministry of Education of the People's Republic of China, 2023).

There are significant drawbacks to using traditional teaching methods in the field of sports: learning any sports technique requires a lot of repetitive practice, and the process is very difficult. Liu Jian (2009) pointed out in his article "On the Impact of Classical Learning Theory on the Traditional Teacher Centered Teaching Model" that classical learning theories (i.e. behaviorism and cognitive theory) have a significant impact on traditional teaching models. In classical learning theory, he particularly emphasized that Ausubel's "learning and teaching" theory was still the main theoretical support. In addition, initially, due to factors such as a lack of theoretical knowledge and non-standard motor skills, students quickly lost interest in learning and gradually formed a resistance to practice. In modern competitive volleyball, the competition between attack and defense is one of the biggest highlights of the entire game, but behind this exciting attack and defense, there are countless boring technical exercises. In volleyball teaching, each of the five basic skills of passing, padding, dunking, serving, and blocking must be practiced multiple times after learning the movement structure in order to proficiently apply a basic technique. Students' ball sense also needs to be strengthened through continuous practice. Shi Hongyu (2018) proposed that the main role in the teaching process was the teacher. Under the guidance of the teacher, learning was carried out, allowing students to avoid detours and accelerate the learning process. At the same time, they also paid attention to the connection and combination of new and old knowledge and skills, which was economical and timely. Focusing on teachers enabled students to easily and directly acquire knowledge and skills from teachers, which was also an experience that educators extracted from teaching. It was indispensable in the field of physical education teaching and has matured. Therefore, we cannot easily replace the reform of teaching methods with some new teaching methods. What is more important is to absorb the essence of traditional teaching methods and innovate and improve them.

The teaching method was important for volleyball technique. Simpson Instructional Model proposed by Simpson was practical skill that could be developed through practice, it would lead to accuracy, agility, expertise, and durability. Guo Ping (2015) pointed out the Simpson Instructional Model could greatly promote the development and practice of physical education teaching. It was of great significance for enriching and developing sports teaching evaluation theory, establishing the position of sports education evaluation in various aspects of sports teaching, and promoting sports teaching reform and development. Simpson Instructional Model could stimulate students' thirst for knowledge, provide them with a satisfactory and enjoyable learning experience, and enhance their confidence in physical education learning, truly reflect their subjectivity in physical education teaching. Attempting to combine traditional teaching with the Simpson Instructional Model also avoided the monotonous practice of volleyball classes in physical education majors, which helped teachers stimulate the classroom atmosphere and helped students better immerse themselves in the classroom. To improve teaching effectiveness, Simpson Instructional Model complied with the current policy requirements of classroom reform in universities and provide assistance for improving the quality and effectiveness of volleyball compulsory courses. Sun Wenqi (2020) pointed out that college volleyball class could bring many influences, including skill learning, physical quality, tactical awareness, learning attitude and team cooperation. Here's a breakdown of those effects: 1) the influence of skill learning, 2) the impact of physical fitness, 3) the impact of tactical awareness, 4) the influence of learning attitude, and 5) the impact of teamwork. These influences will help students to better master volleyball skills and enjoy the fun brought by volleyball. In addition, Wu Ping (2020) pointed out that Simpson Instructional Model placed students at the center of learning and encouraged students to explore, reflect on themselves and manage themselves. This transformation not only improved students' learning enthusiasm, but also cultivated their independent learning ability, critical thinking and problem-solving ability, and laid a solid foundation for students' lifelong learning. Jiao Siyu (2022) proposed that the Simpson Instructional Model could greatly promote the development and practice of physical education teaching objective evaluation theory, thereby achieving the goal of promoting teaching reform and improving teaching quality. From the perspective of classifying sports action skills, examining and studying teaching evaluation provided new ideas for theoretical research and practical operation of school sports teaching evaluation.

In summary, this research based on the Simpson Instructional Model can systematically improve students' volleyball skills in stages, since perception, preparation to guided response, to complex explicit behavior and adaptation, ensure that students grasp a solid skill base in the process of gradual progress, and cultivate their ability of independent learning and team cooperation, which is conducive to the volleyball skills development of students.

Research Objective

1. To use Simpson Instructional Model to improve volleyball skill of undergraduate students.
2. To compare students' volleyball skill before and after the implementation based on Simpson Instructional Model.

Research Hypotheses

After implementing by using Simpson Instructional Model, the students' volleyball skill was improved obviously.

Literature review

This research was to use Simpson Instructional Model to improve achievement of basic volleyball skill course of undergraduate students. The researcher has reviewed the literature and proposed related theories and research as follows:

The significance of Simpson Instructional Model

The importance of Simpson Instructional Model in teacher training has been emphasized by many scholars and educators.

Wu Ping (2020) pointed out that Simpson Instructional Model placed students at the center of learning and encouraged students to explore, reflect on themselves and manage themselves. This transformation not only improved students' learning enthusiasm, but also cultivated their independent learning ability, critical thinking and problem-solving ability, and laid a solid foundation for students' lifelong learning. 1) The stimulation of intrinsic motivation. Simpson model stimulated students' intrinsic learning motivation by making them clear about their learning goals and expected results. When students realized that they were active participants in the learning process rather than passive recipients, they would become more engaged in the learning activities and develop a greater interest in what they were learning. 2) The accumulation of sense of accomplishment. By achieving small goals in stages, students were able to increase their self-confidence in the process of gaining a continuous sense of accomplishment, thereby maintaining a continuous passion for learning. Every progress and success were an affirmation of their efforts and further stimulated their enthusiasm for learning.

Sun Wenqi (2020) pointed out that Simpson Instructional Model respected individual differences and implemented adaptive teaching. Teachers adjusted the content, method and pace of instruction according to the specific situation of students, ensured that each student could effectively learn at a pace that suited them. This personalized teaching method helped to discover students' specialties and promoted students' all-round development and personal growth. 1) Deeply identify individual differences. Simpson Instructional Model adopted diversified assessment means, not only paid attention to students' academic performance, but also attached importance to their interest, ability, learning attitude and other aspects of performance. Through continuous observation, recording and communication, teachers could fully and accurately identify the individual differences of each student, and establish a personalized learning file for each student to record their learning process, achievements, challenges and growth trajectory. 2) Customization of adaptive teaching content. Teachers designed differentiated course content according to students' learning abilities and interests. For students with weak foundation, teachers provided necessary supplementary materials and guidance; For students who had the ability to learn, teachers would provide further development of learning opportunities. When teaching the same skill or knowledge point, the difficulty and depth of the teaching content could be flexibly adjusted according to the learning progress and understanding ability of the students, so as to ensure that each student could be challenged and improved at their own level.

To sum up, the main significance of Simpson Instructional Model is that it can stimulate students' inner motivation, promote the refined, practical and personalized development of skills, and enhance the interaction and cooperation of teaching to provide strong support for students' all-round development.

The elements of Simpson Instructional Model

Simpson Instructional Model is a step-by-step method designed to guide students from perception to creation through a series of carefully designed steps to fully grasp knowledge and develop their thinking skills. Simpson Instructional Model includes the following components:

Huang Xinyun (2015) pointed out that the steps of Simpson Instructional Model included: Step 1: Perception, the student's primary task was initial exposure and perception of the learning material or situation. Step 2: Preparation, after the perception, the students entered the preparation stage. The goal of this stage was to activate students' prior knowledge,

establish connections between old and new knowledge, and prepare them psychologically and intellectually for the upcoming learning activities. Step 3: Guided response, students engaged in a series of specific and limited activities to explore and practice new knowledge. Step 4: Mechanism, the internal logic and mechanism of the learning content were deeply analyzed to help students understand the principles and laws behind the knowledge and form a systematic knowledge structure. Step 5: Complex response, on the basis of mastering basic knowledge and skills, students were required to face more complex and challenging learning tasks, which could be completed independently or cooperatively to demonstrate their learning results. Step 6: Adaptation, students needed to constantly adjust their learning strategies and methods based on feedback and evaluation results during the learning process to adapt to the changing learning environment and task requirements. And step 7: Creation, students were able to integrate their knowledge, innovate and create, and generate new ideas, works or solutions.

Shi Hongyu (2018) paid attention to the important aspects of Simpson Instructional Model: Step 1: Awareness, the primary task of students was to embark on a journey of exploration. Through various senses such as vision, hearing and touch, students could initially contact and perceive the learning materials or situations. Step 2: Preparation, students entered the preparation stage, students' existing knowledge system, build a bridge between old and new knowledge, build a solid psychological and knowledge foundation for subsequent learning, and ensure that students were in the best state to welcome the learning of new knowledge. Step 3: Instructed reaction, students actively participated in a series of carefully designed and targeted learning activities. Through hands-on operation, thinking and discussion. Step 4: Understanding the fundamentals, focused on in-depth analysis of the essence and core of learning content and revealed the logical chain and operating mechanism behind knowledge. Through case analysis, explanation and other methods, students could build a systematic knowledge framework and deepen their understanding of the inherent laws of knowledge. Step 5: Complex reaction, on the basis of mastering basic knowledge and skills, students would face the challenges on higher level learning. Step 6: Adjustment, during the learning process, students should constantly review their progress and effectiveness based on feedback and evaluation results. And step 7: Innovation, students in this stage would be able to integrate what they had learned, dare to explore unknown areas, and carry out creative thinking and practice. They might come up with new ideas, design original works, develop innovative solutions, etc.

Hu Haiying (2019) mentioned that the seven important aspects of Simpson Instructional Model were interrelated, which together constituted a complete teaching system. These seven areas were as follows: Step 1: Cognizance, create an engaging learning environment and use a variety of media and teaching methods to stimulate students' learning interest and curiosity. Step 2: Preparation, students review prior knowledge related to the current learning content by asking questions, discussing or reviewing old knowledge. Step 3: Managed response, design a series of targeted exercises, experiments or activities to allow students to experience the application of new knowledge in practice. Step 4: Mechanism, using explanations, demonstrations, discussions and other ways to deeply analyze the internal structure and operation mechanism of learning contents. Step 5: Complex reaction, design a series of comprehensive learning tasks or projects, require students to use their knowledge to solve practical problems or complete specific tasks. These tasks might involve knowledge and skills in multiple subject areas. Step 6: Adaptive adjustment, pay attention to students' learning progress and performance and offer timely feedback and guidance. And step 7: Creation, encourage students to use their imagination and creativity, apply what they had learned to new situations or problems, and create new works or solutions with uniqueness and value.

Ma Yingyi (2020) stated that Simpson Instructional Model was a teaching method aimed at training teachers to practice and reflect on their teaching skills by simulating a real class environment. Step 1: Perception, build an attractive learning sailing station, use rich multimedia resources and innovative teaching methods, and ignite students' curiosity and desire to explore the unknown world. Step 2: Readiness, used question guidance, thinking

collision or knowledge context sorting to help students consolidate the previous knowledge closely linked to the content of the new lesson. Step 3: Directed response, designed a series of practical activities, so that students could operate, experience, and feel the practical application of new knowledge. Step 4: In-depth understanding, adopted multi-dimensional teaching strategies, such as in-depth explanation, case analysis, rule summary and model construction, to lead students to dig deeper into the essence and internal logic of the learning content. Step 5: Comprehensive response, designed a series of interdisciplinary and comprehensive learning tasks or projects, required students to flexibly use their knowledge to solve complex problems or complete specific tasks. Step 6: Comprehensive adaptation, the navigators of students' learning journey and paid close attention to each student's growth trajectory and learning effectiveness. And step 7: Invention, stimulated students' infinite creativity and potential, encouraged them to integrate what they had learned into novel situations or problems, and created unique works or solutions with practical application value.

Zhang Ruifei (2022) stated that Simpson Instructional Model was a kind of teaching method for the purpose of teacher training, which was usually used to cultivate and improve teachers' teaching skills. Step 1: Perception, the learning process, which involved receiving and processing external information through their senses from students. Step 2: Preparation, transition from old knowledge to new knowledge. It emphasized the activation of students' existing knowledge system and provided the necessary background and support for the learning of new knowledge. Step 3: Instructed reaction, students began to move from passively receiving information to actively participating in the learning process. Step 4: Mechanism, the mechanism stage in-depth analysis of the internal logic and principles of learning content, helped students understand the deep relationship behind knowledge. Step 5: Complex response, students applied their knowledge to more complex and challenging tasks and demonstrated their learning results through practice. Step 6: Adaptation, students to constantly adjust learning strategies and methods based on feedback and evaluation results during the learning process. It was a dynamic, ongoing process designed. And step 7: Creative, students' comprehensive ability, and also the concentrated embodiment of their innovative spirit and creativity.

The Influence of Simpson Instructional model on volleyball skill was 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 were helpful for students to better master and use volleyball skills and improve their volleyball level. The researcher studied the documents and related research about Simpson Instructional Model from many researchers and synthesized 7 steps to develop lesson plans: Step 1 Perception, Step 2 Preparation, Step 3 Guided response, Step 4 Mechanism, Step 5 Complex response, Step 6 Adaptation, and Step 7 Creation.

The volleyball skill course

This article focused on volleyball serving skill, volleyball spiking skill and volleyball blocking skill. Through explaining the content of these three dimensions, the influence of Simpson Instructional Model on volleyball technical ability is analyzed.

Volleyball serving is a very important technique, which directly affects the outcome of the whole game. Therefore, in the preparation stage, teachers should carefully analyze the purpose, significance and tactical requirements of the game, and do a good job in serving skills training and psychological preparation.

Volleyball spiking is a skill that requires teamwork. The success of spiking is inseparable from the tacit cooperation between passing and passing. The initiator of the spike needs to accurately judge the position and quality of the pass, while the target receiver of the spike needs to accurately understand and grasp the intention and strength of the spike. Through spiking training and competition, teamwork ability and tacit understanding can be enhanced.

Volleyball blocking is one of the most important defensive methods in volleyball match. An accurate and powerful block can effectively block the opponent's attack and reduce

the opponent's chances of scoring. The accuracy and height of blocking directly affects the bounce and path of the ball and determine whether the ball can be stopped successfully.

Research Methodology

The Population

There were 60 freshmen students, majoring in Physical Education with 2 classes from Chongqing Vocational College of Media, Chongqing city, China, in the second semester of the academic year 2023. (There was mixing capacity 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 Physical Education with 1 class from Chongqing Vocational College of Media, Chongqing city, China, in the second semester of the academic year 2023.

Research Instrument

Using Simpson Instructional Model to enhance volleyball skill of undergraduate students. The research instruments are as follows:

1. Lesson plan based on Simpson Instructional Model

1.1 Create 3 lesson plans on the subject, volleyball serving skill (9 hours), volleyball spiking skill (9 hours) and volleyball blocking skill (9 hours), total 27 hours. Each lesson plan includes the following aspects: 1) Content, 2) Objective of Learning, 3) Main point/Concept, 4) Introduction, 5) Learning content, 6) Learning activities, 7) Measurement and Evaluation, and 7) Teaching media.

1.2 Specialize in the proposal on Volleyball Course to serve as a guideline for developing the lesson plan in this research and study guidelines for teaching based on Simpson Instructional Model from many academics: Huang Xinyun (2015), Shi Hongyu (2018), Hu Haiying (2019), Ma Yingyi (2020). By using the Simpson Instructional Model theory, each lesson plan specified the details of the topics as follows: 1) Perception, 2) Preparation, 3) Guided response, 4) Mechanism, 5) Complex response, 6) Adaptation, and 7) Creation.

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.

2. Achievement of Volleyball Course test

The Volleyball Course by using the Simpson Instructional Model improve volleyball skill of undergraduate students: 1) volleyball serving skill; 2) volleyball spiking skill; and 3) volleyball blocking skill. The steps in creating and determining the quality of achievement test are as follows:

2.1 Multiple-choice

2.1.1 Studied 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) volleyball serving skill; 2) volleyball spiking skill; and 3) volleyball blocking skill were totally 23 items to measure the achievement of volleyball skill. The scoring criteria 1 point for correct answer and 0 point for wrong answer. Take the test to 3 experts for measurement and evaluation. Check the content validity and analyze the Index of Item Objective Congruence (IOC) = 1.00 for all questions.

2.1.2 Improve and revise items test that have been verified by experts, and take it to try out with students who were not a sample group for 30 freshmen students, majoring in Physical Education to calculate the quality of the test: difficulty value (p), discrimination power (r) and reliability by Kuder Richardson's method (KR-20). The results of the quality analysis of the questions found that there were 23 questions: 1) Volleyball serving skill, there were 8 questions (p=0.47-0.77, r=0.20-0.53), 2) Volleyball spiking skill, there were 8

questions ($p=0.53-0.80$, $r=0.20-0.47$), and 3) Volleyball blocking skill, there were 7 questions ($p=0.47-0.73$, $r=0.20-0.27$). And reliability (KR-20) at 0.72.

2.2 Volleyball skill performance assessment

The Measures for the Examination and Verification of the performance, which included 3 elements and 13 elements. The specific steps for the creation and quality determination are as follows:

2.2.1 Content analysis, competence and learning objectives consistent with the lesson plan on 1) Volleyball serving skill: float serving, topspin serving, jump serving, jump float serving, and friction serving. 2) Volleyball spiking skill: before spiking, ready to take off, preparing posture, take-off in situ, take-off from back to front, take-off in the air, and 3) Volleyball blocking skill: from the flying direction of the ball, from the time of blocking, from the perspective of blocking, from the coordination of blocking action.

2.2.2 Learned the theories, principles and methods of performance appraisal from literature, teaching materials and related research.

2.2.3 Determine scoring criteria for performance assessment by authentic assessments (holistic rubric) rating on 3 scales. Update and improve the performance assessment that has been verified by experts and analyze the Index of Item Objective Congruence (IOC) = 1.00 for all questions. Then take it to try out with students who were not a sample group for 30 freshmen students and calculated the quality of confidence values in performance assessment by analysis the reliability by Cronbach's Coefficient Alpha method at 0.75.

Data Collection

This research was experimental research according to One Group Pretest Posttest Design, the data collection is as follows:

1. Organize a test prior to the start of the experiment to learn how students learn to evaluate student role learning objectives and the benefits of participating in competency tests and learning activities during the experiment.

2. Test before teaching (Pretest) with 30 freshmen students, which was a sample group, and checked the score record to analyze the data.

3. The course is divided into 3 units, total 27 hours and teaching in July 2024, it's not counting the days of pretest and posttest.

Research Results

The purpose of the research was 1) to use Simpson Instructional Model to improve volleyball skill of undergraduate students and 2) to compare students' volleyball skill before and after the implementation based on Simpson Instructional Model. The researcher presented the research results as follow:

1. Using the Simpson Instructional Model to improve volleyball skill of undergraduate students. The researcher has studied the documents and research related on Simpson Instructional Model and synthesized into 7 steps: 1) Perception, 2) Preparation, 3) Guided response, 4) Mechanism, 5) Complex response, 6) Adaptation, and 7) Creation. The data analysis was assessment of the quality of the lesson plan by 3 experts, and the results are shown the quality of the lesson plan by experts overall, the suitability of the research objectives has the most suitable. After 30 students have learned according to the lesson plans, students' achievement of the volleyball skill score between before and after learning, the average score before learning was 28.70, the average score after learning was 48.97.

2. The comparison of students' volleyball skill score before and after learning by using Simpson Instructional Model 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' volleyball skill score before and after the learning by using Simpson Instructional Model

Volleyball skill	Testing	n	Full score	\bar{X}	SD	df	t	p
Serving skill	pretest	30	23	10.93	2.49	29	23.80**	.00
	posttest	30	23	17.87	1.63			
Spiking skill	pretest	30	26	12.50	1.85	29	37.87**	.00
	posttest	30	26	20.70	1.56			
Blocking skill	pretest	30	13	5.27	1.14	29	23.51**	.00
	posttest	30	13	10.40	1.04			
Total	pretest	30	62	28.70	4.18	29	35.36**	.00
	posttest	30	62	48.97	3.35			

**p<.01

From Table 1, the comparison of students' volleyball skill score before and after learning by using Simpson Instructional Model. The result found that volleyball 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: serving skill, spiking skill, and blocking skill. The result found that volleyball skill score of students after learning higher than before learning statistically significant at the level .01 for all contents. Therefore, learning by using Simpson Instructional Model could improve students' volleyball skill.

Research Discussion

The research resulted on using Simpson Instructional Model to improve volleyball skill course on 30 freshmen from Chongqing Vocational College of Media, China. The researcher could be discussed the volleyball skill as follows:

1. Using the Simpson Instructional Model to improve volleyball skill of undergraduate students. The researcher studied documents and related research on Simpson Instructional Model theory from many researchers and synthesized into 7 steps used for 3 lesson plans. The result showed that the quality of the lesson plans by experts was the most suitable. After students had learned the volleyball skill according to the 3 lesson plans, the average score was 48.97 after learning. which was higher than the average score was 28.70 before learning. It's because Simpson Instructional Model emphasized the importance of practice in motor skill learning. In volleyball technical training, a large number of mechanical exercises and practical operation were essential. Through continuous practice, students could consolidate the techniques they had learned and improve the accuracy and proficiency of their movements. At the same time, teachers needed to give timely feedback to students, point out the shortcomings of technical movements, and provide suggestions for improvement. This combination of practice and feedback helped students to quickly correct mistakes and accelerate the process of skills improvement (Cheng Huo, 2022). Consistent with Chen Bingdong (2020), Simpson Instructional Model emphasized the cultivation of adaptability and creativity in the advanced stage. In the teaching of volleyball technology, this meant encouraging students not only to be satisfied with mastering basic movement skills, but also to be able to flexibly use these skills in the game, to react quickly according to the situation of the opponent and changes on the court. In addition, teachers should also stimulate students' creativity and encourage them to try new tactics and combinations in the competition to achieve better results. This teaching method helped to cultivate students' independent thinking ability and innovation ability, so that they could reach a higher level in volleyball technology. According to the research of Wang Chuanwen (2018), in order to prepare for the regional championship, a high school volleyball team adopted Simpson Instructional Model to carry out a one-month special technical improvement training for the players. According to

Simpson's motor skill target classification, a set of systematic training plan was designed to comprehensively improve the volleyball skill level of the players. Training process: Awareness and Preparation (Weeks 1-2): The coach first through video analysis and explanation, let the players understand the basic principle of volleyball technology, movement structure and key points. The introduction of simple technical imitation exercises, such as the basic hand shape and stance of serving and cushion, cultivated the players' initial perception ability. Guided reaction and mechanical exercise phases (Weeks 3-4): The coach offered one-on-one or group guidance to correct the mistakes of the players in the technical movements and ensure that each player could correctly master the basic techniques. The feedback mechanism was introduced in the process of practice. After each practice, the coach and the players evaluated each other and pointed out the improvement direction. This hierarchical training mode helped players to gradually master volleyball skills and gradually improve from basic to advanced. Moreover, Xu Mengjiao (2024) applied the Simpson Instructional Model in university PE. The research objects of the experimental group were 30 students and control group were 30 students. Personalized instruction: Simpson teaching model encouraged coaches to give personalized instruction according to the actual situation of the players to solve their specific problems in technical learning. This teaching method was helpful to give full play to the potential of each team member and improve the overall training effect. The research result proved that Simpson Instructional Model focused on cultivating team members' initiative and creativity, encouraging them to try new techniques and tactics. This teaching method helped to cultivate the independent thinking ability and innovation ability of the players, which laid a foundation for them to achieve excellent results in the competition.

2. The comparison of students' volleyball skill before and after the implementation based on Simpson Instructional Model. The result found that volleyball 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: serving skill, spiking skill, and blocking skill. The result found that volleyball skill score of students after learning higher than before learning statistically significant at the level .01 for all contents. Therefore, learning by using Simpson Instructional Model could improve students' volleyball skill. It's because Simpson Instructional Model had obvious advantages in volleyball technology improvement, such as clear classification of teaching objectives, the combination of practice and feedback, and stimulated students' initiative and creativity. These advantages helped students to achieve a more comprehensive and in-depth development in volleyball technology. According to the research of Zhou Yufeng (2014) made an experiment on the improvement of spiking skill in the process of applying Simpson Instructional Model. Experimental group: 35 students with similar volleyball foundation were selected to use Simpson Instructional Model for spiking skill training. Control group: Another 35 students with similar volleyball fundamentals were selected to receive spike training by using traditional teaching methods. According to Simpson Instructional Model, spike skill was trained in stages, from basic hand shape and pace exercises to complex jump and spike movements in tandem. After the training, the students' spiking skill was evaluated again and compared with the pre-test data. The result showed that spiking skill was improved remarkable in the process of applying Simpson Instructional Model. Consistent with research of Zhao Meixia (2016) applied Simpson Instructional Model on volleyball serving technique. Experimental group: 30 students with similar volleyball foundation were selected and trained with Simpson Instructional Model. Control group: Another 30 students with similar volleyball foundation were selected for serving technique training using traditional teaching methods. After the training, the two groups of students were tested again on the service technique, and the same index was recorded and compared with the pre-test data. Volleyball serving skill was improved simply. And consistent with research by Tian Yonggang (2021) made an experiment, and applied Simpson Instructional Model to blocking skill. Experimental group: 30 students with similar volleyball foundation were selected to conduct blocking technique training by using Simpson Instructional Model. Control group: Another 30 students with similar volleyball foundation were selected for

blocking technique training by using traditional teaching methods. The teacher evaluated students' blocking techniques, including jump timing, blocking hand type, air judgment and body control. Experimental group: According to Simpson Instructional Model, block technique training was carried out in stages, from basic take-off and landing techniques to complex aerial judgment and coordinated defensive strategies. Control group: Traditional teaching methods were adopted, such as coach demonstration, student imitation, blocking practice in simulated game scenarios. After the training, re-evaluate the students' blocking techniques and compare them with the pre-test data. Simpson Instructional Model had many advantages in improving college students' basketball technical ability, which could help students better grasp and understand basketball technical movements, improve learning effect and learning interest. The research made by Liao Xibi (2022) stated an empirical study on the effect of Simpson Instructional Model on swimming skill learning. By comparing the performance of the experimental group and the control group in the learning process of swimming skills, this study explored the influence of Simpson Instructional Model on the improvement of swimming skills. The experiment period was four weeks, and the research objects were beginners and swimmers with a certain foundation. Experimental design: Experimental group: 20 beginners and 10 swimmers with a certain foundation were selected and trained by Simpson Instructional Model. This model emphasized phased learning and feedback mechanisms. Control group: Another 20 beginners and 10 swimmers with a certain foundation were selected and trained in traditional teaching methods. Before the experiment, the basic swimming skills of the two groups of participants were evaluated, including the mastery of basic swimming strokes such as freestyle and breaststroke. The experimental group was trained in stages according to Simpson Instructional Model, three times a week for 90 minutes each time. The control group was trained according to traditional teaching methods, with the same frequency and duration as the experimental group. After the experiment, the two groups of participants were tested for swimming skills to evaluate the improvement of their skills. Simpson Instructional Model can effectively improve the skill level of swimming participants through phased and targeted training methods. For swimming teaching, this model was a teaching method worth popularizing and applying.

In summary, the Simpson Instructional Model can effectively improve the skill level of various sports through the step-by-step and targeted training method. This teaching method is beneficial to let each player in the team play their best and improve the overall training effect. In addition, cultivating the initiative and creativity of team members, encouraging them to try new techniques and strategies, increase players' independent thinking, after the implementation of Simpson Instructional Model, students' volleyball skill improved remarkably.

Research Suggestion

General suggestion

1. Teachers should keep a keen observation, catch the highlights and shortcomings of students' technical movements, and immediately give preliminary guidance or tips, so that they can adjust in time in the next practice and avoid forming bad habits.
2. After students have just completed an action or set of exercises, their muscle memory and mental state are at their most active stage. Therefore, teachers should be giving feedback at this time, students are able to remember the coach's instructions more clearly and adjust quickly in the following exercises and should be strengthened for students with slow progress, and more difficult exercises should be introduced for students with better mastery.
3. Teachers should be conducting regular technical assessment, the details of the students' technical movements, the quality of completion and the speed of progress were recorded by means of the combination of quantitative scoring and qualitative observation.

Suggestions for further research

1. Integrating Simpson Instructional Model with other teaching methods, which is very important in the process of responding and adapting to the complex teaching model for students.

2. Comparing the results of using Simpson Instructional Model between the experimental group and the control group to develop volleyball skills of students.
3. Studying the management model of volleyball competition by using Simpson Instructional Model.

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