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An Experimental Study of SAQ Training on the Agility and Quality of Young Wushu Students

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Abstract

This paper analyzes and demonstrates whether SAQ training in martial arts training is more conducive to improving the sensitivity and competitive performance of martial arts players, and uses spss27 software for data processing. The general teaching material of the Department of Physical Education of Wushu puts forward that Wushu takes offensive and defensive fights such as kicking, hitting, throwing, holding, striking, and stabbing as action materials, and compiles various unarmed and equipment routines according to the contradictory laws of offensive and defensive advance and retreat, movement and static slowness, hardness and softness, emptiness and reality. He represents a national form of sport designed to strengthen the physique, cultivate will, and train fighting skills (Wu Dong, 2020). Sensitivity, also referred to as 'body IQ,' is crucial and closely related to all sports. Therefore, we should expand innovative training means according to the needs of the times and the principle of adapting to social needs. This paper uses the method of literature, experiment, expert interview, spss27 software analysis expounds the influence of SAQ training methods on the physical sensitivity, which has a great guarantee for the competitive performance of the martial arts majors. Facing the physical and mental health of young people, based on the theory of multiple sources, this paper puts forward the perfect path of wushu training it aims to provide theoretical reference and reference for the scientific training of Chinese teenagers in martial arts, so as to let flowers blossom and the trees grow. In the general provisions of the new Sports Law, the new concepts of "priority development", "integration of sports and education" and "comprehensive development" of youth and school sports are also proposed, and the chapter name of "Youth and School sports" is used to replace the original "school sports", filling the gap in youth sports legislation and achieving a qualitative leap forward (Tian Siyuan & Song Yaxin, 2023).

Keywords: SAQ training, martial arts, agility and quality, multi-source flow theory, youth

1. Introduction

Since the 18th National Congress of the Communist Party of China, the Party Central Committee with Comrade Xi Jinping at its core attaches great importance to the healthy growth of teenagers and the development of school sports. The Party and the state have issued a series of laws, regulations and policies and measures to promote the development of school

sports. Standing in the national strategy, they attach great importance to China's school sports cause and help students enjoy it in physical exercise. Have fun, enhance physique, improve personality, exercise will, and cultivate socialist successors with all-round development of morality, intelligence, physique, beauty and labor. School sports bear the historical mission of cultivating socialist successors with all-round development of morality, intelligence, physis, beauty and labor, and should attach great importance to (Zheng Shumei, 2023). The development of school Wushu education has an important position and far-reaching significance in Wushu as a whole. Qiu Pixiang (2006) pointed out that the most convenient and effective way to inherit martial arts is campus dissemination, and school is the best martial arts inheritance position. Only when martial arts is based on campus and passed on and developed by young people, can we better fulfill the historical responsibility and mission of carrying forward the Chinese national spirit and inheriting the excellent traditional culture of China. The gradual formation and establishment of values in youth is crucial to personal development, but they will face various contradictions and confusion, and need to be correctly guided and educated. School martial arts education, a vital component of the educational system, is increasingly valued for its role in building a harmonious society, promoting the national spirit, enhancing youth physical fitness, and strengthening ideological and moral construction, especially in response to the new era's demand for a stronger sports culture and a stronger China (Wang Xiaochen, Qiao Yuanyuan & Zhang Feng, 2020). Then, the trend of studying the modernization of martial arts education and governance is unstoppable. The basic skills training of martial arts is very monotonous and boring, and the technical actions can achieve good performance results only after a lot of practice. If teenagers are not enthusiastic about martial arts, it is difficult to persist in the boring training. Interest is the best teacher. And martial art is a skill oriented event. After watching a large number of competition videos, we found that in martial arts competitions, Sanda athletes not only need to maintain a high degree of concentration, but also quickly make defense and counterattack according to the competition environment. The role of agile quality cannot be underestimated. Martial arts have offensive and defensive skills, and it is necessary to jump, rise and fall, flash and move when practicing, and pay attention to the norms of movement and body. Martial arts demand precise control of 'fine, qi, and spirit' with movements that require the body to first stretch, then flex, move left before right, and open before closing. It involves alternating between attack and defense, integrating punches, palms, elbows, and numerous leg movements. Additionally, various combinations of jumps, rotations, and turns impose high demands on the practitioner's agility. The faster the reaction, the faster the speed, and the more advantageous the competition is, the level of athletes' sensitivity affects the speed of the routine, body shape and footwork, and plays an important role in the competition results. In contrast, SAQ training method is a new type of physical training method popular in the United States, Australia, which has been Europe and popularized and used in foreign football training. Through training methods to improve athletes' speed, agility and fast starting ability, its training methods and purposes are suitable for most ball games. A comprehensive training method in sports training, which combines speed, agility and quick reaction ability. Through various training, players' enthusiasm, physical quality and technical ability are improved, so that they can perform better in the competition (Zhang Feng, Wang Boli, Shi Meng & Zhang Deliang, 2017). Therefore, whether campus Wushu training is scientific and effective will not only affect the future of students, but also affect the development of Chinese Wushu. At present, few SAQ training research papers have been published in the database. In a word, this research is of great practical value.

The multi-source theory has been widely used in foreign countries. With the introduction and localization of the theory by domestic scholars, it has been adapted in combination with the national system with Chinese characteristics, and has been applied in various fields, such as school sports policy, and the research results are encouraging. The revision of the new Sports Law requires a strict legal amendment process, which itself sets the policy agenda. Therefore, with the multi-source theory as an analytical perspective, combined with the context of China's public policy agenda, the close relationship between the three sources is

clarified, the leading position of the Communist Party of China in the policy agenda is highlighted, and the development and improvement of school sports and youth sports in China under the background of the revision of the new "Sports Law" is interpreted and adapted from an international perspective (Wang Tao, 2023).

2. The Object and Methodology of the Study

2.1 Purpose of the Study

According to the data comparison between SAQ training and traditional training on the changes of the sensitive quality of college martial arts students, this paper analyzes and concludes that SAQ training is more suitable for improving the sensitive quality of students, and provides reference for other project exercises.

2.2 Research Subjects

Research object: SAQ training changes the sensitive quality of martial arts college students.

Subjects: 10 male students of Anhui Polytechnic University Wushu Team.

Grouping of experimental objects: Before the experiment, 10 male players of the same level were selected by coaches and experts, and there was no significant difference in their height, weight and age(P>0.05). Then 10 male students were randomly divided into control group and experimental group, with 5 in each group. According to the National Fitness Guide and experts' opinions, the experimental group and the control group were given cross quadrant jump, Illinois sensitive quality and push ups. The push ups were based on the standard of good/30to test the length of time students reached good needs. Based on the evaluation of three indicators, the unit is second and two decimal places are reserved. After eight weeks of intervention training, five times a week, the results before and after the experiment were compared between traditional martial arts sensitive quality training and SAQ training. During this period, strictly control variables, such as athletes' weight, diet training time, training environment, training load, etc., and confirm that the selected students have no injuries and diseases 6 months before the experiment and can participate in the experiment.

2.3 Research Innovations

(1) Summarize the SAQ training methods for martial arts students, and screen the test indicators corresponding to the characteristics of martial arts. Through teaching experiments, this study explores the effect of SAQ training methods in the special training of young martial arts students, which has a certain optimization effect on the training of other projects.

(2) The previous research on SAQ training mostly focused on volleyball, football and other sports. This paper chose martial arts to promote the spread and application of SAQ training methods in martial arts and create a better sports training atmosphere.

2.4 Experimental Program

By selecting Wushu players from Anhui University of Engineering as the experimental objects, and according to the teaching materials such as Sports Training, Sports Physiology, Basic Training of Wushu and the characteristics of people's physical mental voung and development, the contents of the experimental program and the control program are designed. It can be summarized as the adaptation stage, the improvement stage, and the consolidation stage. The experimental period is 8 weeks, with 5 training sessions per week, 2 hours per class. The first 30 minutes are the experimental training time, and the rest of the time is for routine exercises. See Table 1 and Table 2 for the sensitive quality training contents of the control group and the experimental group respectively. Keep the data collection results before and after the test, and then use SPSS27 software to process, analyze the significance of test indicators before and after the test, to judge whether SAQ training improves the sensitive quality of Wushu players.

Table 1. Control group traditional agility quality phase training program

Phase of training	Training content	Teaching aims
Adaptation stage (1-3weeks)	Trot, cross run, power flexibility exercise, wheel run, push-ups, basic leg technique of martial arts	Through the combination of strength quality, coordination ability and flexibility quality,
Improvement	Return run, fast rise run, hip jump, belly jump,	the students' sensitivity quality

stage (4-7weeks)	dynamic flexibility exercise, Wushu basic leg method, fast and irregular boxing	can be enhanced to improve the control and adjustment ability
Consolidation stage (week 8)	Side-cross running, wheel running, imitation exercises, fast and irregular boxing, side-sliding, 100-meter sprint	of the subjects' body center of gravity

Table 2. SAQ agility and diathesthesia training program of the experimental group

Phase of training	Training content	Teaching aims
Adaptation stage (1-3weeks)	Trot, jump across repeatedly, double elastic band resistance running, lower limb fast stride frequency, "M" shape step forward and forward	1) At the initial stage, through a single training content, students can master the basic exercise methods in the initial exercise process and improve
Improvement stage (4-7weeks)	100-meter sprints with elastic belt, jumps forward and back on one leg, knee lift jump, hip turn back and forth, "line" movement, "s" shape running	their physical quality to a certain extent; 2) Let the trainer change the direction of the body accurately and quickly when running and jumping quickly and accumulate 3) The
Consolidation stage (week 8)	Weight deep squat, side slide exercises, multi-direction jumps, hand passes, foot target exercises, "V" "L" "S" "M" shape run	students' interest and enthusiasm in SAQ training have been improved, thus achieving ideal training results.

3. The Content of the Indicators of the Sensitivity Test and the Arrangements for the Test

All the test indexes were divided into two days, the first day morning cross quadrant jump, afternoon Illinois sensitivity test, the second day morning push-up test, following the principle of scientific training load, to prevent exercise fatigue affecting the performance of the test. During the training period, we strictly followed the long-term nature of human biological adaptation, the instability of sports training, and the periodicity of biological adaptation, and the experimental training phase was based on interval training, supplemented by change training, to ensure that the efficacy of the basic methods of sports training was maximized.

3.1 Cross Quadrant Jump Sensitivity Quality Test

Equipment: gymnasium, stopwatch, mats, whistles.

Test scheme: as shown in Figure 1, the square field with the length and width of one meter is divided into four quadrants. At the beginning, the subjects should be required to stand at A, and after hearing the "start" command, complete A-B-C-D-A in sequence as shown in Figure 1. This is a complete group. During the test, the subjects need to pay attention to the simultaneous take-off and landing of both feet. Do not tread the line during the process, and stop the watch for 10 times. The score record is in seconds, with two decimal places, two tests, and the best score (Liu Yaojia & Si Xingwei, 2023).

Test Requirements: The subject must have a tight core and not step on the line, out of bounds will be invalid.



Figure 1. Cross-quadrant jump sensitivity quality test (Figure source literature (Liu Yaojia & Si Xingwei, 2023))

Table 3 shows the performance records of the two groups of students before and after the intervention, in seconds. Then the scores of the experimental group and the control group were tested by sample t test, and the p value was obtained. (Table 4)

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Groups	Pre-intervention	Post-intervention
The experimental group	22.95	20
The experimental group	21.13	19.22
The experimental group	21.78	18.61
The experimental group	20.65	17.82
The experimental group	20.34	16.23
Control group	21.35	19.21
Control group	22.16	21.72
Control group	20.75	19.93
Control group	22.12	22
Control group	21.24	19.41

Table 3.

Table 4.

Indicators	Groups	Before the experiment	After the experiment	р
Groups-quadrant	The experimental group	21.37±1.04	18.37 ± 1.44	< 0.01
jumps	Control group	21.52 ± 0.61	20.45±1.31	0.053

3.2 Illinois Agility Qualities Test

Equipment: Athletic field, stopwatch, whistle, tape, markers, tape measure, etc.

Test method: as shown in Figure 2, prepare for the test at marker A. The athletes were asked to prepare for the start in a prone position. When the coach gives the start command. Quickly get up and run along the A/B/C/D/E/F-E/D/C/G/H route, return to the marker Hand stop timing. Test twice and get the best score (Qi Wenchao, 2022).

Test Requirements: Throughout the test, no part of the body of the10 subjects may touch the markers or change the route, otherwise the results will be considered invalid and the test will have to be repeated. The test will be repeated.



Figure 2. Illinois Agility Run test route (photo source: Baidu)

Record the Illinois scores of the experimental group and the control group, (Table 5) to

facilitate the analysis of spss data and obtain significant values. (Table 6)

Groups	Pre-intervention	Post-intervention
The experimental group	20.11	16.68
The experimental group	21.32	17.23
The experimental group	20.68	17.12
The experimental group	19.71	16.67
The experimental group	18.90	16.45
Control group	20.12	18.79
Control group	21.32	20.69
Control group	21.17	21.08
Control group	20.09	19.63
Control group	19.05	19

Table 5.

Table 6.

Indicators	Groups	Before the experiment	After the experiment	р
IIIinois Agility Test	The experimental group	20.14 ± 0.92	16.83 ± 0.33	< 0.001
	Control group	20.35 ± 0.92	19.83 ± 1.01	0.092

3.3 Push-Up Strength Test

Field equipment: gymnasium, whistles, stopwatch.

Test Method: Test the time it takes students to 30 push-ups. Push-ups were complete standardized as follows: arms straight, shoulder-width apart, hands on the ground, five fingers extended, torso, legs straight, from the shoulders to the ankles into a straight line, bending the arms to make the body fall straight down to the shoulders and elbows at the same level, chin to keep the neck and spine in the same straight line, and then the body straight up, the statistics of the time required to complete the 30.

Test Requirements: Throughout the process, the torso is required to be in a straight line, the abdomen can not stick to the ground, the hips can not be buckled, to complete 30 consecutive push-ups, can not stand or lie on the ground in the middle of the process, or stop the clock.

The following is the statistical table of subjects' scores before and after the test and the results of significant differences.

Groups	Pre-intervention	Post-intervention
The experimental group	45.69	38.34
The experimental group	43.78	39.51
The experimental group	47.73	40.35
The experimental group	49.32	42.41
The experimental group	50.12	44.72

Table 7.

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Control group	46.45	46.07
Control group	44.78	44.34
Control group	48.95	46.41
Control group	50.16	48.92
Control group	44.11	43.71

Table 8.

Indicators	Groups	Before the experiment	After the experiment	р
The push-up test	The experimental group	47.33±2.61	41.07±2.53	< 0.01
	Control group	46.89±2.61	46.89±2.66	0.075

4. Results and Analysis

1) The students of the experimental group and the control group are new members of the team in March 2023. Before the experiment, the physical coaches tested their strength, endurance, flexibility, agility, speed and martial arts specific skills, and there was no injury or disease six months before the experiment, and signed the commitment rules for participating in the experiment. It can be seen from Table 4 that the cross quadrant jump performance of five college Wushu players in the experimental group after SAQ training is P<0.01, and the significant value of Wushu players in traditional training is P=0.053. The difference between the two is obvious. The average speed of each student in the experimental group increased by 2.3 seconds, and the average speed of each student in the control group increased by 1.07 seconds, which confirmed that the SAQ training method has significantly improved the speed quality and sensitivity quality of the martial arts team members. In martial arts, it is the ability to move quickly and move in a short time; 2) It can be seen from Table 6 that, through independent sample T test, although the score of the control group students in Illinois has improved by 0.51 seconds, the score of the experimental group students in Illinois has improved more significantly, with an average of 3.31 seconds faster per person, making greater progress. The experimental group p<0.01, that is, SAQ training is more effective than traditional training in improving the sensitive quality of students. 3) It can be seen from Table 8 that the average score of students in the experimental group increased by 6.26 seconds after intervention (p<0.01), and the difference was very significant. The students in the control group increased by 1 second on average, p=0.075, with no significant difference. SAQ training can really make martial arts students perform better in their sensitive quality. 4) From the comparison between the two groups, we can see that the performance of the experimental group is significantly better than that of the control group. It is conducive to proving that the exercise means, methods, props and contents of SAQ training are novel, unique, flexible, simple and easy to learn, and more convenient for students to accept. The speed, agility and quick start training methods used in conventional martial arts classes are fixed and the content is single. Compared with the latter, the former has a more significant effect on stimulating students' interest in martial arts learning, and has a better effect on mobilizing students' enthusiasm for participating in exercises. It is also worth mentioning that the five students in the experimental group all won the top eight in the National University Martial Arts Championship in October 2023.

5. Conclusion

Chen Xiaoping once said: "In the competitive sports training, if we can not accurately understand the sports characteristics of the project, the sports training will lose the goal and direction; Without a correct grasp of the rules of training, it is impossible to ensure efficient and sustainable development of sports training." Coaches fully understand and control the special characteristics of sports events, not only can quickly improve the technical level of athletes, but also contribute to the long-term development of the sports. For competitive wushu Sanda, we should also grasp its special technical characteristics. However, there is still a lack of awareness of the sport. Only with a clearer understanding of the core elements of

wushu Sanda, tactical skills and training methods, can we tailor training plans and technical guidance for athletes more accurately. In the Opinions on Strengthening and Improving Ideological and Political Work in the New Era issued by the Central Committee of the Communist Party of China and the State Council, it was proposed to "implement the project of cultivating new people in the era". General Secretary stressed in the report to the Twentieth National Congress of the Communist Party of China that "efforts should be made to cultivate new people in the era who assume the responsibility of national rejuvenation". Young people are an important new force in China's social development and a strong reserve force for realizing the Chinese dream of great national renewal. For a long time, the whole Party and society have paid great attention to the healthy growth of young people. The level of personality development of college students not only affects and determines their personal growth, but also is closely related to social progress and national development. It has become the sacred mission of colleges and universities in the new era to cultivate new people with healthy personality (Hua Rui, 2023). Wushu is the treasure of Chinese traditional culture, which is conducive to promoting the physical and mental health of young people. Only by establishing a scientific and reasonable youth Wushu training system, can Wushu truly play its role in educating people. Then the coaches add SAQ training methods in training, and the scientific training system can effectively avoid sports injuries, but also make the curriculum more innovative and efficient, improve the concentration of students' training, not only enhance the popularity of teachers, but also help to mobilize the enthusiasm of college students to choose martial arts development courses. So as to promote college students to participate in physical exercise, strengthen their physique, develop morally, intellectually, physically, aesthetically and physically, and implement the fundamental task of building morality and cultivating people.

6. Recommendation

6.1 Effective Integration of Martial Arts and SAQ Training

(1) The addition of SAQ training in martial arts training is not to worship foreign things, but to replace new things and destroy old things, complying with the basic law of things' development. The addition of SAQ training

method sublimates the content of martial arts training. It is suggested that in the future, physical education teaching and training in colleges and universities must be considered comprehensively, and appropriate training content should be selected according to the development of students' physical and mental health at different stages, so as to achieve scientific training, reduce the risk of injury, pay attention to recovery after training, organically combine SAQ training with physical education teaching, and innovate and develop. (2) Research on SAQ training methods is relatively mature in foreign research systems, but relatively lacking in China. It is suggested that future research should expand the thinking, start from the research objects, people in different regions, ages, different functions, and relevant laws and regulations, carry out research, and speed up the promotion and application of SAQ training methods in China. (3) As we all know, the essence of martial arts is technical attack, and the core value of martial arts lies in its offensive and defensive characteristics. The "routine" teaching that blindly pursues "formalism" is similar to the western gymnastics and modern primary and secondary school students' radio exercises, and has lost the unique charm of martial arts". Therefore, school Wushu teaching must have its own characteristics, inject cultural connotation, and meet the needs of students for Wushu (Zhang Peng & Wang Guozhi, 2024). (4) Promote the development of campus martial arts platform and introduce talents. The relationship economic foundation between and superstructure is familiar. To carry out a good martial arts curriculum, we must have strong teachers. Behind it is the investment of school funds. The two are in direct proportion. And on the basis of the original, the school should "bring in, go out", build its own martial arts brand, not only to participate in the competition, but also to build links with the society, let participate in practice, students promote students' employment, and cultivate application-oriented talents. (5) Due to the limited research conditions, this study only selected 10 students from one university. The sample size is small, which may have caused a slight deviation to their own results. Future research should expand the sample size to ensure that their research conclusions have sufficient persuasiveness.

6.2 The Perfect Path of School Martial Arts Based on Multi-Source Theory

(1) Focusing on the source of problems, The Martial Arts Industry Development Plan (2019-2025) proposes to stimulate the vitality of the martial arts industry, carry forward the traditional culture of martial arts. and popularize martial arts projects. As the main body responsible for campus sports, the school must improve and revise the Regulations on School sports Work in time to meet the development of school sports and realize the scientific management of martial arts. (2) Enrich the policy source and clarify the national martial arts policy direction. Actively build the intelligent dialogue platform between the school and the Ministry of Education and the Ministry of Sports, strengthen the scientific effectiveness of martial arts training, the reliability of martial arts talent development, and seek the well-being of the majority of students. (3) Strengthen the political source, improve the rule of law awareness of school sports subjects, follow the Party Central Committee, and improve their own awareness of rule of law. Usually carry out more legal topic dialogue, martial arts lectures, so that martial arts injury accidents do not happen, to create a good training atmosphere.

Fund Projects

2022 Anhui Provincial Scientific Research Program: Major Project on Scientific Research — A Study on the Mechanism of Improving Sleep Quality through Aerobic Exercise Based on Behavior Change Theory. (2022AH040132)

Key Project at Anhui University of Technology: A Survey of the Current Status of Physical Activity among College Students in Wuhu City and Its Influencing Factors. (xjky13201907)

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