



Effects of SAQ Training on Speed and Agility in Junior High School Students

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Abstract

Objectives:

This study aims to determine the effect of Speed, Agility, and Quickness (SAQ) training on improving the physical components of speed and agility among SMP Budi Mulia extracurricular participants in 2026.

Materials and Methods:

The study employs a quantitative method using a one group pretest posttest design. The population consists of athletes/participants undergoing the training, with a sample size of 16 individuals determined based on research requirements.

Results:

Results regarding speed showed a mean pretest time of 5.878 seconds and a mean posttest time of 5.344 seconds, representing an improvement of 0.534 seconds (9.09%).

Conclusions:

Based on these findings, it can be concluded that Speed, Agility, and Quickness (SAQ) training has an effect on improving the physical components of speed and agility among SMP Budi Mulia extracurricular participants in 2026.

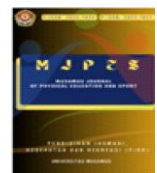
Keywords: Speed; Agility; Quickness (SAQ); training; speed and agility.

Introduction

Sports are not merely games and competitions but also constitute a social phenomenon with meanings that extend beyond scores and performance. One of the phenomena that has recently received considerable attention is futsal. This can be seen from the rapid development of futsal from year to year. The availability of futsal courts, particularly in major cities, demonstrates that this sport is highly popular among the public. Furthermore, the existence of futsal cups and competitions indicates that this sport has gained a significant place in society.

Futsal was created in Montevideo, Uruguay, in 1930 by Juan Carlos Ceriani. The uniqueness of futsal attracted attention throughout South America, particularly in Brazil. The skills developed through this game can be observed in the world renowned playing style demonstrated by Brazilian players on outdoor, full sized fields. Pelé, the famous Brazilian football star, for example, developed his talent through futsal. While Brazil continues to be a major center of world futsal, the sport is now played under the auspices of the Fédération Internationale de Football Association (FIFA) throughout the world, from Europe to Central and North America, as well as Africa, Asia, and Oceania.

The first international competition was held in 1965, when Paraguay won the first South American Futsal Championship. Six subsequent South American Championships were held until 1979, with Brazil winning all of them. Brazil continued its dominance by winning the first Pan American Championship in 1980 and successfully defending the title in 1984. The first Futsal World Championship was held with the assistance of FIFUSA (before its members joined FIFA in 1989) in São Paulo, Brazil, in 1982, with Brazil finishing in first place. Brazil repeated its success by winning the second World Championship in Spain in 1985 but was defeated by Paraguay in the third World Championship in Australia in 1988. The first international futsal match in the United States was held in December 1985 at Sonoma State University in Rohnert Park, California.



As a relatively new sport, futsal has received considerable attention from the Indonesian government through an organization operating under the authority of the Football Association of Indonesia (PSSI), the National Futsal Board (Badan Futsal Nasional/BFN). The BFN was responsible for managing the development of futsal in Indonesia, including organizing national level futsal competitions on a regular basis, such as the Indonesian Futsal League. In 2003, an organized futsal management structure was established under PSSI and chaired by H. Umar Rusdi. This marked the beginning of more serious development and management of Indonesian futsal, similar to conventional football played on full sized fields. All training camp (TC) requirements were fully provided, including equipment and other necessities. Suharjanto and the late Ronni Patti were assigned to develop an appropriate training and development system for Indonesian futsal.

The Indonesian National Futsal Team held training camps for several months in preparation for KL5 in Malaysia, where it finished third, the Asian Cup in Iran during the qualifying stage, and the AFF Championship, where it also finished third. A foreign coach from Iran, Mr. Naser Saleh, was brought in not only to train the national team but also to support the development of Indonesian futsal in various regions. Since then, the Indonesian National Futsal Team has continued to achieve recognition at both the ASEAN and Asian levels. In 2005, Indonesia qualified for the Asian Cup; in 2006, it finished as runner up in the ASEAN Cup; in 2007, it finished third in the SEA Games; and in 2008, it qualified for the Asian Cup. These achievements indicate a positive trend in the development of Indonesian futsal, considering that the sport had only been known and developed in Indonesia for approximately six years at that time.

One of the important factors in achieving success in sports is physical condition, in addition to technical skills, tactics, and mental abilities. The extent to which physical condition contributes to sports performance depends greatly on the specific requirements and demands of each sport. Many sports require a high level of physical fitness, while performance in other sports is determined by a combination of physical condition, technical skills, and mental abilities, such as football, basketball, and other sports. Therefore, to determine the type of physical condition required, the level of physical fitness needed, and how it can be improved through training, a comprehensive understanding of physical condition is necessary.

Physical condition is an integrated whole consisting of components that cannot simply be separated, both in terms of improvement and maintenance. This means that efforts to improve physical condition should involve the development of all components, although priorities may be established according to the condition or status of each component and the specific requirements of the sport. Physical condition must be improved to ensure that players can perform effectively during games. Every coach should improve and develop the physical condition of their players.

Factors affecting physical condition include food and nutrition, sleep and rest, healthy lifestyle habits, environmental factors, and physical activity and exercise, among others. Therefore, to achieve good physical condition, individuals must pay attention to these factors. The importance of athletes' physical condition should be recognized by both coaches and athletes themselves. Coaches should continuously monitor the physical condition of athletes so that any problems can be detected at an early stage, as such problems may affect both performance and competitive achievement. Schools generally have extracurricular football teams. These extracurricular teams provide opportunities for students to develop and improve their abilities. Players who possess good basic techniques tend to perform well in football. The basic techniques that futsal players need to possess include kicking, passing, shooting, stopping, dribbling, throw ins, and goalkeeping. To become a good football player, it is not enough to possess good



technical and tactical skills; players must also have good physical condition. There are four essential elements that need to be developed to achieve optimal performance: physical development (physical build up), technical development (technical build up), mental development (mental build up), and competitive maturity.

Futsal players are required to have good physical condition because they must be able to play or compete for two halves of 20 minutes each (2×20 minutes). In knockout competitions, they may also have to play additional extra time of 2×5 minutes. During both defensive and offensive situations, futsal players may experience strong physical contact (body contact), move and run at full speed, or use agility to evade opponents. They may also need to move or stop suddenly in order to control and play the ball through actions such as kicking, dribbling, heading, catching, and throwing. Good physical condition enables futsal players to maintain stamina throughout a match. In futsal matches, both teams play for two 20 minute periods, consisting of the first and second halves. Because futsal is played on a relatively small field and at a high tempo, players are required to move rapidly and manage their energy efficiently so that it is not exhausted during the first half. Physical fitness is therefore a dominant requirement for futsal players. Because endurance demands tend to be prolonged, players generally rely on aerobic endurance as an important energy system.

The components of physical condition in futsal include strength, endurance, speed, flexibility, agility, reaction, and power. These physical components are highly necessary for futsal players to perform effectively. Based on observations conducted by the researcher, SMP Budi Mulia offers various extracurricular activities, including football, basketball, futsal, karate, badminton, and swimming. However, the provision of facilities and infrastructure remains inadequate. There are shortages of equipment, facilities, and other supporting resources at the school. As a result, the futsal training process has not been conducted optimally. For example, the number of futsal balls is insufficient compared with the number of students participating in the activity. In Medan, futsal extracurricular activities are widespread, and many schools have futsal extracurricular programs. Even when schools have their own futsal courts, many still rent nearby futsal facilities.

One of the extracurricular activities at SMP Budi Mulia is futsal, which is conducted once a week, every Friday from 3:30 p.m. to 5:00 p.m. The physical condition of students participating in the futsal extracurricular activity still appears to be inadequate, as observed when they play futsal during the extracurricular sessions. Many students experience fatigue, while the coach's understanding of drills and methods for physical training is still limited, resulting in students being unable to perform effectively throughout the full 2×20 minute match. In addition, speed and agility, which are the main components of focus, are still relatively poor. This can be observed when students are easily dispossessed by opponents while dribbling. Similarly, in terms of speed, students are often unable to keep up with opposing players when chasing the ball. The extracurricular activities, particularly futsal, have not yet produced optimal results. This is evidenced by the fact that in recent years, SMP Budi Mulia has not achieved championship titles in inter school competitions throughout Medan and has struggled to compete with other schools.

Materials and Methods

Study Design

The research method employed in this study is an experimental approach. Specifically, a one group pretest posttest design was used; this design involves administering a pretest prior to the intervention and a posttest afterward, thereby allowing for a more accurate assessment through a comparison with the pre intervention baseline.

Study Participants



The population consisted of 16 students participating in the futsal extracurricular activity at SMP Budi Mulia. The sample used in this study comprised the same 16 students.

Study Organization

To obtain the data required for this study, tests and measurements were conducted. The research instruments used to gather data regarding speed and agility were the 20 meter sprint test and the 4x5 meter shuttle run agility test.

Statistical Analysis

Data analysis involved descriptive statistics, normality tests, homogeneity tests, and a paired sample t test at a 5%.

Results

Speed test results data

Table 1. Speed Pretest and Posttest Data

No	Sampel	Pretest (second)	Posttest(second)	Improvement
1	S-01	5,82	5,34	0,48
2	S-02	5,71	5,21	0,50
3	S-03	6,05	5,52	0,53
4	S-04	5,64	5,18	0,46
5	S-05	5,93	5,39	0,54
6	S-06	5,76	5,25	0,51
7	S-07	6,12	5,55	0,57
8	S-08	5,88	5,31	0,57
9	S-09	5,69	5,16	0,53
10	S-10	5,97	5,43	0,54
11	S-11	5,81	5,28	0,53
12	S-12	6,08	5,49	0,59
13	S-13	5,73	5,20	0,53
14	S-14	5,91	5,37	0,54
15	S-15	6,16	5,58	0,58
16	S-16	5,79	5,24	0,55
Total		94,05	85,50	8,55
Average		5,878	5,344	0,534

Based on Table 1, the average speed test results showed a decrease in time from 5.878 seconds in the pretest to 5.344 seconds in the posttest. This reduction of 0.534 seconds indicates an improvement in speed ability following SAQ training.

Table 2. Agility Pretest and Posttest Data

No	Sampel	Pretest (second)	Posttest(second)	Improvement
1	S-01	18,42	16,91	1,51
2	S-02	17,85	16,34	1,51
3	S-03	19,16	17,48	1,68
4	S-04	18,21	16,72	1,49
5	S-05	18,73	17,02	1,71
6	S-06	18,04	16,57	1,47
7	S-07	19,38	17,61	1,77
8	S-08	18,61	16,94	1,67
9	S-09	17,92	16,39	1,53
10	S-10	18,87	17,15	1,72
11	S-11	18,36	16,82	1,54
12	S-12	19,24	17,42	1,82



13	S-13	18,15	16,51	1,64
14	S-14	18,58	16,89	1,69
15	S-15	19,52	17,72	1,80
16	S-16	18,27	16,66	1,61
Total		297,31	271,15	26,16
Average		18,582	16,947	1,635

Based on Table 2, the average agility test result showed a decrease in time from 18.582 seconds in the pretest to 16.947 seconds in the posttest. This reduction of 1.635 seconds indicates an improvement in agility following SAQ training.

Discussion

Based on the results of the study involving 16 participants, there was a change in speed performance after the Speed Agility Quickness (SAQ) training was administered. The mean speed test time before the training was 5.878 seconds, which decreased to 5.344 seconds after the SAQ training. This indicates a reduction of 0.534 seconds, representing an improvement of 9.09%. The t test results showed a calculated t value of 61.040, while the t table value at a 5% significance level with 15 degrees of freedom was 2.131. Since the calculated t value was greater than the t table value and the Sig. value was $0.000 < 0.05$, it can be concluded that SAQ training had a significant effect on speed performance.

For the agility component, the mean pretest time was 18.582 seconds, while the mean posttest time was 16.947 seconds. Thus, there was a reduction in time of 1.635 seconds, corresponding to an improvement of 8.80%. The agility t test results showed a calculated t value of 56.780, which was greater than the t table value of 2.131, with a Sig. value of $0.000 < 0.05$. Therefore, SAQ training had a significant effect on improving agility performance. Overall, the results showed that SAQ training produced positive changes in physical components related to speed and agility. Training that combines the elements of speed, agility, and quickness provides stimuli that enhance the ability to move rapidly, change direction, and respond quickly to movement.

Conclusions

There was a significant effect of SAQ training on improving speed, with a t value of $61.040 > 2.131$ and Sig. $0.000 < 0.05$. There was also a significant effect of SAQ training on improving agility, with a t value of $56.780 > 2.131$ and Sig. $0.000 < 0.05$. The percentage increase in speed performance was 9.09%, while the percentage increase in agility performance was 8.80%. Based on these results, the research hypothesis stating that Speed Agility Quickness (SAQ) training has an effect on improving the physical components of speed and agility was accepted.

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Conflict of Interest

The authors declare no conflict of interest.

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