

# Android Based Speed Light Implementation of Saq (Speed, Agility and Quickness) Improvements on Futsal Athlete U-16 League AAFI Regional Medan

Dody Yogaswara

Department of Sport  
Post Graduate Program  
Universitas Negeri Medan (UNIMED)  
Medan, Indonesia  
[yogaidyti@gmail.com](mailto:yogaidyti@gmail.com)

Rahma Dewi

Education Department of Sport  
Education  
Post Graduate Program  
Universitas Negeri Medan (UNIMED)  
Medan, Indonesia

Amir Supriadi

Department of Sport Education  
Post Graduate Program  
Universitas Negeri Medan (UNIMED)  
Medan, Indonesia

**Abstract** -The purpose of this research is to produce speed, agility and quickness training which are progressive exercises that lead to the development of the main movement abilities to improve the ability of players or athletes so that they are better (faster) at their skills. Another opinion is that speed, agility and quickness are expected to increase the ability of athletes to use maximum strength during high-speed movements. The subjects in this study are futsal athletes U-16 of the AAFI Regional Medan league. The quasi-experimental design used is the time series design before the treatment of speed, agility and quickness (SAQ), from the initial tests conducted and obtained an SAQ level of 35.35135, then after being treated in the form of speed, agility and quickness (SAQ) with Android the athlete's skill level is 71.324324. So speed, agility and quickness (SAQ) are effective in improving the ability of AAFI Regional Medan athletes. Based on the results of the study it can be concluded that: (1) With speed, agility and quickness (SAQ) for AAFI Regional Medan athletes the evidence of this increase is shown in the test results of the pretest and posttest results of a significant difference between before and after the speed treatment, agility and quickness (SAQ) with Android.

**Keywords:** *speed, agility dan quickness (SAQ), Futsal, Android*

## I. INTRODUCTION

Futsal is one sport that is currently favored by all levels of society, both children, adolescents and even adults. This sport game is easily played by anyone, this game can be done inside and outside the room by requiring the size of the field is not too large. The futsal game so far has been growing rapidly with many tournament events between students and between futsal clubs. Futsal sports games are played by two teams or teams, this sport is very similar to soccer in terms of the rules of the game. Futsal players must be demanded to have good physical condition and a high level of fitness in order to be able to play futsal for 2 x 20 minutes. Futsal players can also take positive advantage from this game, namely in terms of social, entertainment, mental and emotional.

The coaching process in sports cannot be done instantly. This can be started by finding the seeds of talented athletes, then fostered through regular, well-planned and well-planned

training and with mastery of the right techniques and tactics. The existence of the futsal academy has a very large role in supporting efforts to achieve optimal achievement, because through this futsal academy players can be discovered and then nurtured and developed. But the seeds of these athletes also will not develop without a championship, both championships in the region and nationally. In a match whether regional or national championship there are many athletes who can not display their best performance. This is a problem for the trainer concerned.

SAQ is a form of exercise that can develop speed, agility and reaction simultaneously. Johnson and Bajjibabu, 2012 revealed that speed, agility and quickness training can increase speed and agility. The exercise is done by evoking movement quickly on objects that change and are indispensable in almost all sports. Another opinion is that speed, agility and quickness are expected to increase the athlete's ability to use maximum strength during high-speed movements.

So it is considered necessary while SAQ (speed, agility and quickness) is the most important technique for futsal athletes to have. The problems that have been raised above the background of the title of this study, the researchers are interested in conducting research with the title "Implementation of Android-Based Speed Light Against the Increased SAQ (Speed, Agility and Quickness) in Futsal U-16 Athlete League AAFI Regional Medan.

## II. RESEARCH METHODS

Research is basically an activity or a systematic process to solve problems carried out in the application of scientific methods.

The problem examined in this study is "The Implementation of Speed Light Against Increased SAQ (Speed, Agility and Quickness) in Futsal U-16 Athlete League AAFI Regional Medan". The right method in this study is a quasi-experimental research method. Quasi experimental design is a development of true experimental design that is difficult to implement (Sugiyono (2016: 77). The use of this quasi-experimental method is based on consideration so that in

conducting this research learning takes place naturally and athletes do not feel experimented, so that with such situations it is expected to be able contributes to the level of validity of research.

The first thing to do is to establish a group that will be used as an experimental group. In this research design the group used was only one group, so it did not use a control group. Before being given treatment, the experimental group was given a pretest first, then the treatment was carried out to the experimental group with Speed Light. Increased SAQ (Speed, Agility and Quickness) in U-16 athletes of the AAFI Regional Medan league. The treatments given to the experimental class were three treatments (first series, second series, third series). After being treated the experimental group was given a posttest, so that a gain or difference between the pretest and posttest scores can be obtained. Pretest and posttest scores describe the literacy value in athletes before and after being treated using SAQ Speed Light. During the treatment process, an SAQ Speed Light was assessed on the athlete during training using an observation sheet of scientific process skills, scientific thinking skills and scientific attitudes.

The sample is a portion of the population chosen for a research process that is considered to represent the entire population. This is in line with the opinion of Arikunto (2016: 174), the sample is part or representative of the population under study. The sampling technique used in this study was a random sampling technique. Sampling with this technique is done by selecting samples from groups of small units at random. The research sample taken was one class that was taken randomly (randomly).

According to Hadi (2016: 193-194), the methods used in random sampling are: (1) the lottery method, (2) the ordinal method, and (3) the radicity of the random number table. Therefore the sample selection in this study was done by lottery. The type of random sampling technique used in this study is the type of random cluster sampling. Cluster random sampling is used when the population does not consist of individuals, but rather consists of individual groups or clusters (Margono, 2005: 127). Random sampling can only be done if the population is indeed homogeneous (Arikunto, 2016: 181). So before drawing the sample, the researcher does homogeneity testing first by giving a pretest as an initial ability test. The sample in this study is the futsal athlete U-16 X-Trail 14 futsal academy.

**Futsal Description**

According to Justinus Lhaksana, (2011: 5) "futsal (futbol sala) in Spanish means football in the room) is a soccer game that is done indoors." This game itself is done by five players each different from conventional soccer teams there are eleven people in each team. The size of the pitch and the size of the ball are smaller than the size used in grass football. Futsal is a ball game played by two teams, each of which has five members. The goal is to enter the opponent's kegawang ball, by manipulating the ball with his feet. In addition to the five main players, each team is also allowed to have a reserve player. Unlike other indoor soccer games, the futsal court is bounded by lines, not the net or boards. With the various

opinions above, it can be concluded that futsal is a team game that is played five against five in a certain time duration in a relatively small field, the size of the ball and the size of the goal is relatively small compared to football, futsal is very exciting and interesting where the teams that enter the ball the most opponents won, the team won.

**III. RESEARCH METHODOLOGY**

This research will be carried out at the North Sumatra UIN futsal field. Research time is estimated in September 2019. This study uses instruments to collect valid data. In this study, the research instrument used in the form of observation guidelines and data collection techniques used include: 1) Speed using 30 meters running, 2) Agility using 40 meters back and forth. 3) Quicknees using foot reaction speed using the bar (The Nelson Foot Reaction Test) (1) Indicator Variable Description

SAQ (Speed, Agility and Quickness) Performing movements continuously in the same time in the shortest possible time Performing running activities with a distance of 30 meters Perform activities to change the direction and position of the body in certain areas with good coordination Performing running activities back and forth (shuttle run). Doing the action to act as soon as possible in response to stimuli caused through the senses, nerves or other feelings Performing activities foot reaction speed use a ruler (Ruler Drop Test).

Benchmarks for the SAQ (speed, agility and quickness) of athletes are obtained based on the initial ability test activities that are used as a criteria for determining the level based on a predetermined score that is Benchmark Reference Assessment (PAP) (Mansur, Harun Rasyid, & Suratno, 2009: 106) . The time interval to carry out these activities is 10 seconds to 33 seconds. From that time interval will be divided into five criteria that will be used as a benchmark for SAQ (speed, agilty and quikness) in the U-16 futsal athlete AAFI Regional Medan.

To find out the effectiveness of Android-Based Speed Light Against SAQ (Speed, Agility and Quickness) trials that are tested on regional AAFI Medan athletes whether effective or not, then there is data to be collected namely SAQ (Speed, Agility and Quickness) data.

TABLE 1. SAQ INSTRUMENT LATTICE ON U-16 ATHLETES

No.	Nama	Tes keterampilan SAQ	
		Pre Test	Post Test
1	X1	32.43243	62.16216
2	X2	39.18919	58.10811
3	X3	35.13514	68.91892
4	X4	29.72973	66.21622
5	X5	33.78378	59.45946
6	X6	33.78378	68.91892
7	X7	39.18919	64.86486
8	X8	32.43243	64.86486
9	X9	31.08108	66.21622
10	X10	33.78378	66.21622
11	X11	40.54054	67.56757
12	X12	37.83784	70.27027

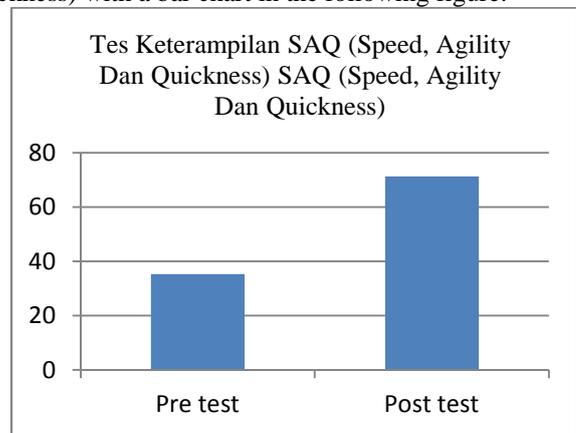
13	X13	35.13514	64.86486
14	X14	36.48649	63.51351
15	X15	33.78378	74.32432
16	X16	36.48649	78.37838
17	X17	35.13514	75.67568
18	X18	36.48649	81.08108
19	X19	32.43243	72.97297
20	X20	40.54054	71.62162
21	X21	35.13514	72.97297
22	X22	33.78378	83.78378
23	X23	32.43243	62.16216
24	X24	31.08108	68.91892
25	X25	40.54054	63.51351
26	X26	32.43243	75.67568
27	X27	35.13514	75.67568
28	X28	31.08108	79.72973
29	X29	36.48649	75.67568
30	X30	32.43243	75.67568
31	X31	39.18919	75.67568
32	X32	37.83784	68.91892
33	X33	39.18919	79.72973
34	X34	37.83784	64.86486
35	X35	37.83784	74.32432
36	X36	33.78378	74.32432
37	X37	37.83784	71.62162
38	X38	36.48649	81.08108
39	X39	37.83784	71.62162
40	X40	33.78378	77.02703
41	X41	33.78378	68.91892
42	X42	37.83784	78.37838
43	X43	32.43243	70.27027
44	X44	35.13514	74.32432
45	X45	29.72973	72.97297
46	X46	35.13514	75.67568
47	X47	35.13514	72.97297
48	X48	35.13514	75.67568
49	X49	37.83784	72.97297
50	X50	37.83784	64.86486
<b>Jumlah</b>		1767.568	3566.216
<b>Rata-rata</b>		35.35135	71.324324

TABEL 2. HASIL PAIRED SAMPLES TEST

Paired Samples Test

	Paired Differences					t	df	Sig. (2-tailed)	
	Mean	Std. Deviation	Std. Error Mean	95% Confidence Interval of the Difference					
				Lower	Upper				
Pair 1	FreeTest - PostTest	3.59730E1	6.68127	.94487	-37.87177	34.07418	-38.072	49	.000

The following comparison of the average level of the SAQ test (Speed, Agility and Quickness) before giving treatment and after giving treatment with SAQ (Speed, Agility and Quickness) with a bar chart in the following figure:



The table above shows the results of the pre-test and post-test athlete test. Pre-test is done after a large group test. Pre test is done before applying SAQ (Speed, Agility and Quickness). Based on the description above, there is a difference in the average results obtained between the pretest and posttest so that it is said to be effective.

Based on the output using SPSS 16 that the average value of the results of SAQ (Speed, Agility and Quickness) before being given SAQ (Speed, Agility and Quickness) is 35.3514 and after being treated with SAQ (Speed, Agility and Quickness) is 71.3243, meaning that the average value of SAQ (Speed, Agility and Quickness) is increasing

In the significance test of the difference with SPSS 16, the result of t-count = -38.072, df = 49 and p-value = 0.00 < 0.05 which means that there is a significant difference in the results of SAQ (Speed, Agility and Quickness) before and after the SAQ (Speed) treatment, Agility and Quickness). Based on this information it can be said that the developed SAQ (Speed, Agility and Quickness) can effectively improve the skills of the Medan regional AAFI Athlete.

In this study, it has been maximally pursued in accordance with the ability of the author, but in the study there are still some limitations that must be recognized and put forward as a material consideration in generalizing the results of the research achieved. The limitations include the following: a) In this study, it is necessary to adjust the tool for athletes who are SAQ (Speed, Agility and Quickness), b) The use of equipment must still pay attention to the comfort and safety of athletes so that they can get more leverage in doing SAQ (Speed, Agility and Quickness), c) Product trials are limited to AAFI Regional Medan athletes, d) Due to limited time and funds, when the treatment is given the sample is not dormant, so it will affect the sample outside of the treatment schedule, which allows it to occur various social contacts in the neighborhood where he lives affect his appearance in training and when data collection is done, which ultimately also affects the data collected.

Psychological factors that are thought to influence research results that cannot be controlled include, interest, confidence, and other psychological factors.

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