

The effect of nine squares to play Takraw sports with the inside of the foot of students in Nakhon Pathom Rajabhat University

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Abstract

The purposes of this study were 1) to study the result of Nine Squares Practice on the Takraw inside of the foot performance 2) to compare the result of the Nine Squares Practice along with the inside of the foot practice to the result of the inside of the foot practice only. The sample group is the 40 freshmen of Nakhon Pathom Rajabhat University. This group is divided in to 2 groups by randomized assignment method. The control group is 20 male – female students and the experimental group is another 20 male – female students. The tools are 1) the Nine Squares Practice program 2) the inside of the foot practice program 3) the inside of the foot test 4) the striking Takraw ball against the wall with the inside of the foot test. The process happened 3 days a week for 8 weeks (Monday, Wednesday and Friday) and it took 60 minutes each day. The control group practices on the inside of the foot practices program and the experimental group practices on the Nine Squares Practice along with the inside of the foot practice program, after that they have to take the inside of the foot test and the striking Takraw ball against the wall test. After week 4, 6 and 8 the analyze includes the mean, the standard deviation, t-test. The results show that the experimental group perform significantly better after using the Nine Squares Practice than the control group at the level $p \leq 0.05$.

Keywords: Takraw sports, Nine Squares Practice

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1. Introduction

Takraw is the popular sport in nowadays. It has many competition including to the domestic and international. It doesn't require much space to play and the price of equipment that use to play is inexpensive [1]. In the playing and the competitions, players should practice their skill to be expert and they can join with the playing and the competitions. The basic skills of Takraw are the playing by the inside of the foot, The playing by head, The playing by back feet, The playing by knees and the playing by outside of the foot. The playing Takraw is useful for health and the nervous system. Takraw has the efficacy to organ function [2] and that the body activation is the effect of strength, endurance, speed, flexibility and coordination. There is important configuration to determine the ability of body activation [3].

The playing Takraw by inside of the foot uses the neurological recognition, motor system and muscular to working [4]. In the study and the experience that the step of the playing Takraw by inside of the foot has the complex procedure more than other skills and the Nine Squares Practice is developed for the learning interaction and recognition. According to Charoen Khrabuanrat that the nine squares is the development of learning interaction and the brain recognition, help the coordinate between nerves and muscular to motivate and develop the speed in activation,

the speed of thinking, the deciding to the better efficacy [5]. The teaching or training to learning the principle of coordination is necessary and important to develop the activation skill and coordinate, the activation especially the types of sport to learning and develop the interaction in thinking and the activation skill [6]. The body systematic activation has common pattern that it determine the condition in which difference children or the body is natural activated [7]. The feedback is the result of the learning and the factual evaluation. According to basic pattern of the activation in nine squares is use for determining the steps from easy activation to hard activation with the Takraw training by the inside of the foot of the student and the athlete including to determine the structure to develop the brain system for better activation.

The researcher is interests to study the effect of Nine Squares Practice to play Takraw by the inside of the foot by adapt the nine squares activation training for train the inside of the foot skill. It helps the students, the athlete and the beginners to acquire the skill and take less time to train to be expert than the ordinary training.

2. Research objectives

2.1 To study the effect of training by Nine Squares Practice to play Takraw by inside of the foot.

2.2 To compare the effect of training by Nine Squares Practice with training by inside of the foot of experimental group and the effect of training by of the foot only of control group.

3. Hypothesis of the research

3.1 After the experiment, the experimental group train by Nine Squares with the Inside of the Foot has the better skill than train by the Inside of the Foot only before the experiment.

3.2 The experimental group which train by Nine Squares with the inside of the foot and the control group which train by the inside of the foot only has the different for playing Takraw by the inside of the foot.

4. Methods

4.1 Population

The population in the research is the freshmen who are enroll in Sport Science for health in academic year 2559 between 19-20 years old amount 200 people.

4.2 The choosing of sample

In the research use the volunteer from the student amount 170 people and choose 40 student who didn't have the experience in training by Nine Squares Practice and never play Takraw before. Sample were ranked and divided into two groups, 20 people in each groups by using the point from the test of the inside of the foot. Each group has the average of the ability before training and the amount of gender. Each group has male amount 10 people and female amount 10 people.

The divide of sample use the matching between the sample for divide to control and experimental group by the test for training the skill of playing Takraw by inside of the foot including to sort by descending and divide group (Table 1).

4.3 The equipment to use in research

The equipment to use in research was divided to 2 types;

- 1) The equipment for experiment:
The Nine Squares Practice.

The training of playing Takraw by the inside of the foot program.

- 2) The equipment for collecting data:

The test for the playing Takraw by the inside of the foot skill [8].

The test for the transfer and swash Takraw skill [9].

4.4 How to find the quality of equipment

1) Take the Nine Squares Practice Program, the training of playing Takraw by the inside of the foot program, the test for the playing Takraw by the inside of the foot skill, and the test for the transfer and swash Takraw skill present to advisor to proof and correct to better than.

2) Adjust the programs and the test to 5 professional person's comments to consider and concordance with the aims of research by index of item objective congruence and definite not less than 0.5.

3) Take the program which approved by professional person to experiment with the freshmen in the Physical Education major of Nakhon Pathom Rajabhat University who never study Takraw amount 15 people between 19-20 years old for 4 weeks to study the possibility in using the program for the sample.

4) Take the test to find the reliability by test-retest with the freshmen in the Physical Education major of Nakhon Pathom Rajabhat University who never study Takraw amount 15 people between 19-20 years old have the point of reliability from the test for the playing Takraw by the inside of the foot skill as 0.99 and the test for the transfer and swash Takraw skill as 0.98.

5) Take the test to find the reliability using 2 assessors and use the Pearson Correlation Coefficient. Between the first assessor and the second assessor get the objectivity from the test for the playing Takraw by the inside of the foot skill as 0.99 and the test for the transfer and swash Takraw skill as 0.98.

6) Take the programs and tests use with the sample to collect data for analyzes and conclude.

4.5 Data collection

The pattern experiment is The Pretest-Posttest Control Group Design. The sample were ranked and divided into two groups. The group was experimental trained by Nine Squares Practice with the inside of the foot and the control group was trained by inside of the foot only for 8 weeks and have test before and after training by the same equipment:

Table 1 The divide of sample from the point by the test training to playing Takraw by the inside of the foot

Control Group	Experimental Group
1	2
4	3
5	6
8	7
9	10
12	11
13	14
16	15
17	18
20	19
-	-

1) Determine the method of experiment

Group	Before Test	Independent Variable	After Test Week 4, 6, 8
E (R)	O ₁	X -	O ₂
C (R)	O ₁	-	O ₂

E is the demonstrated group

C is the controlled group

R is randomized assignment

O₁ is test before experiment

O₂ is test after experiment in week 4, 6 and 8

X is Nine Squares Training by experimental group

- is the inside of the foot training

2) Experiment and collect data

This research has the process for collect data;

- Coordinate with head of Physical Education major and lecturer who teach in Sport Science for Health to assist the student to the sample in the

research. When the researcher was allowed all of process and begins the process of research. During the experiment, the researcher prepare the student for faculty of nursing to always care for when have an accident, response the student when hurt and move to the hospital including to look after to heal.

- Orientation with intent to experiment and explain the process to the sample and the coaching.

- Test the sample before training by the inside of the foot to divide the group.

- 2 groups train following program for 8 week, 3 days a week e.g. Monday, Wednesday and Friday (5 pm. - 6 pm.) by divide training;

- The experimental group was trained by Nine Squares Practice and play with the inside of the foot and the control group was trained by inside of the foot only.

1) Warm up 15 minutes;

- Activate around court 5 minutes.

- Stretching 10 minutes.

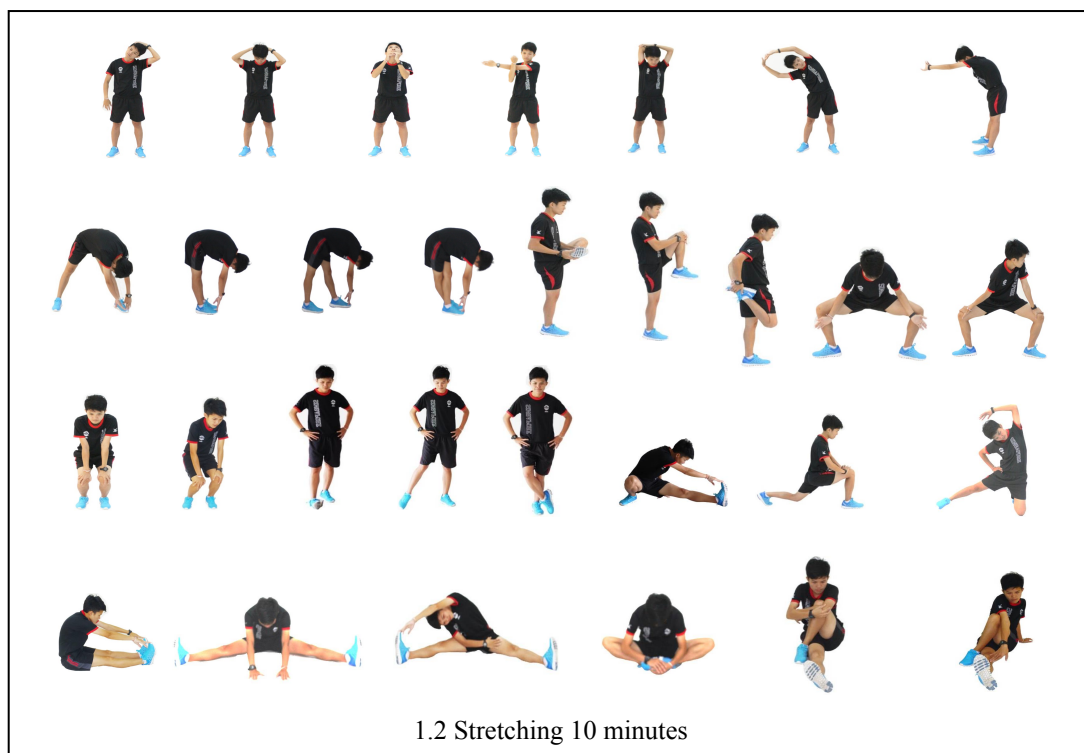


Figure 1 Warm up 15 minutes

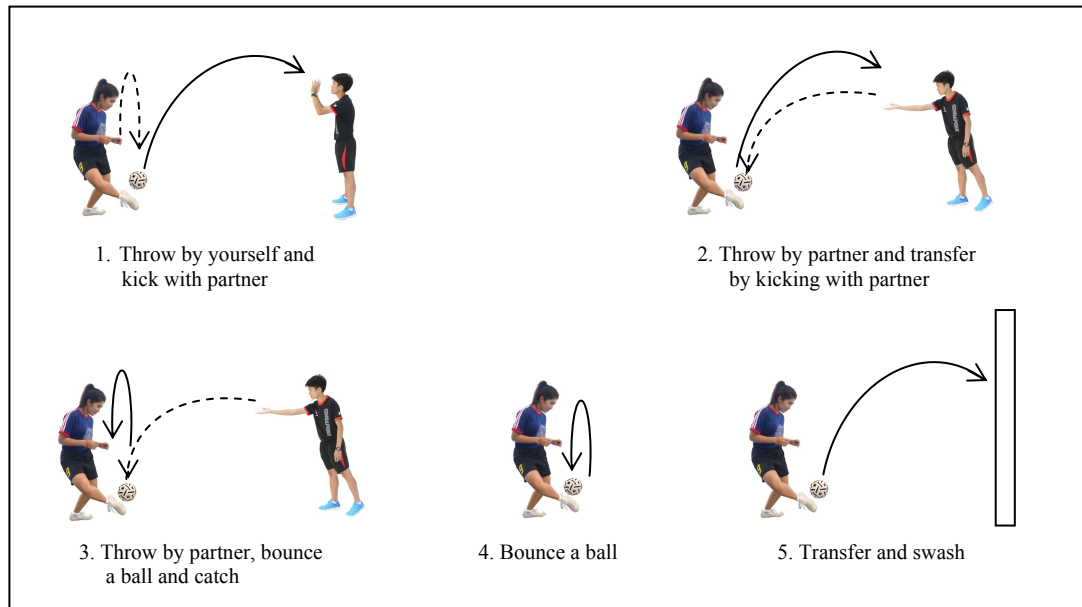


Figure 2 The training of playing Takraw by the inside of the foot program

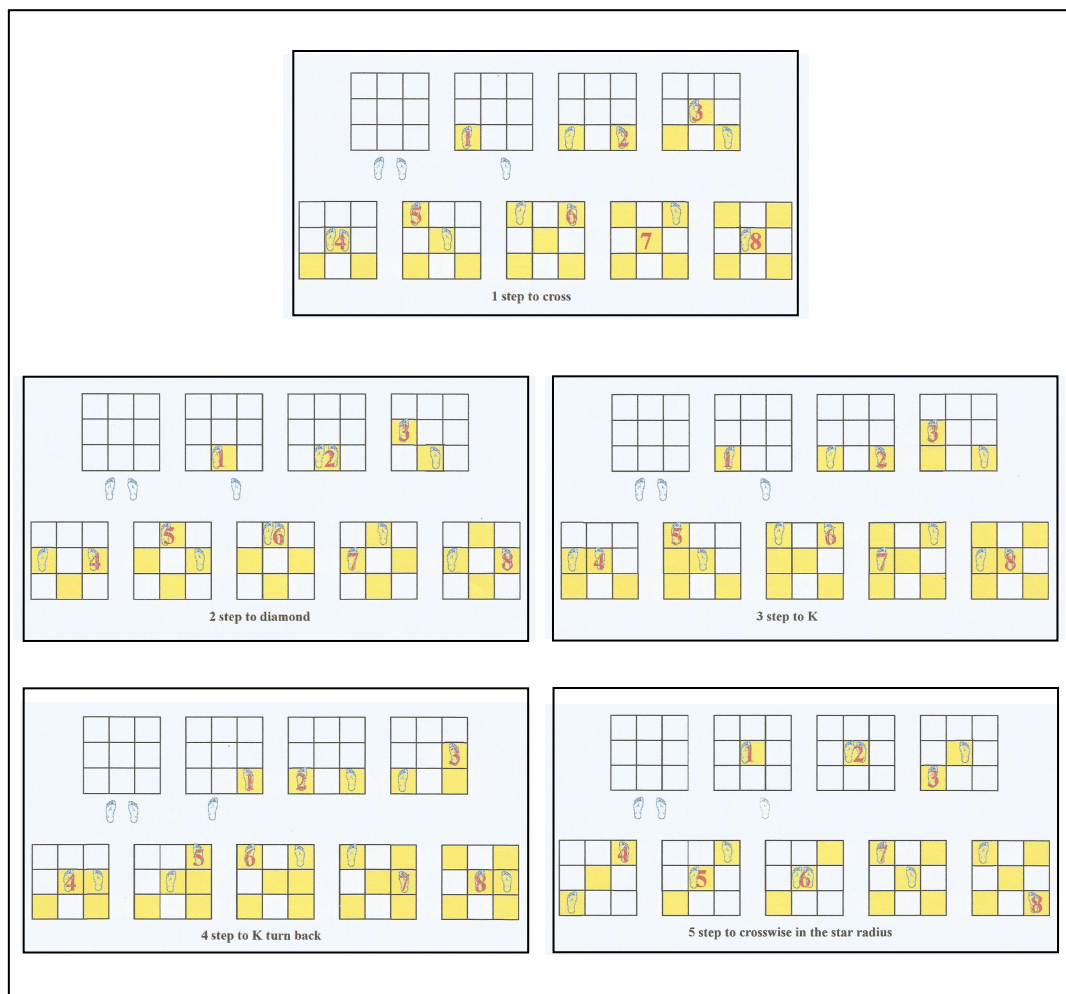


Figure 3 The Nine Squares Practice

2) In the program

- Control group, train the inside of the foot 35 minutes. Have 5 patterns.
 - Exercise 1 throw by yourself and kick with partner 7 minutes.
 - Exercise 2 throw by partner and transfer by kicking with partner 7 minutes.
 - Exercise 3 throw by partner, bounce a ball and catch 7 minutes.
 - Exercise 4 bounce a ball 7 minutes.
 - Exercise 5 transfer and swash 7 minutes.
- Experimental group, train by Nine Squares Practice 10 minutes and the inside of the foot 25 minutes.
 - Exercise 1 step to cross (15 second/time, break 15 second. Do 4 times, switch to left side 2 times and right side 2 times) 2 minutes.
 - Exercise 2 step to diamond (15 second/time, break 15 second. Do 4 times, switch to left side 2 times and right side 2 times) 2 minutes.
 - Exercise 3 step to K (15 second/time, break 15 second. Do 4 times, switch to left side 2 times and right side 2 times) 2 minutes.
 - Exercise 4 step to K turn back (15 second/time, break 15 second. Do 4 times, switch to left side and right side) 2 minutes.
 - Exercise 5 step to crosswise in the star radius (15 second/time, break 15 second. Do 4 times, switch to left side 2 times and right side 2 times) 2 minutes.
 - Exercise 1 throw by yourself and kick with partner 5 minutes.

- Exercise 2 throw by partner and transfer by kicking with partner 5 minutes.
- Exercise 3 throw by partner, bounce a ball and catch 5 minutes.
- Exercise 4 bounce a ball 5 minutes.
- Exercise 5 swash 5 minutes.

3) Cool down 10 Minutes

- 3.1 Activate around court 3 minutes.
- 3.2 Stretching 7 minutes.
- Test by playing Takraw to use the inside of the foot skill and transfer and swash Takraw skill after training in week 4, 6 and 8.
- Take the result to find the statistics.
- To conclusion and recommendations including to the opinions.

5. The analysis of data

The analysis includes the average, standard deviation, comparing the different of average by repeated measures designs. If there are find the statistically significant different level 0.05, the researcher test to find the different by partner and compare the result by dependent Sample T-Test;

5.1 Show the average and standard deviation of control group and experimental group before training, after training in week 4, 6 and 8.

To show the result by Table 2.

From the Figure 4, it shows the comparative of average from the experimental group and control group in the inside of the foot skill test. Before training, it has not different both in average. After training in week 4, 6 and 8, it has the clearly different.

Table 2 The result of the test from the playing Takraw by inside of the foot

Sample		Before	Week 4	Week 6	Week 8
Control Groups	$\bar{x}$	17.30	23.80	27.50	28.60
	S.D.	5.12	6.29	8.42	8.40
Experimental Groups	$\bar{x}$	17.30	30.80	34.50	35.80
	S.D.	5.06	7.66	7.43	7.59

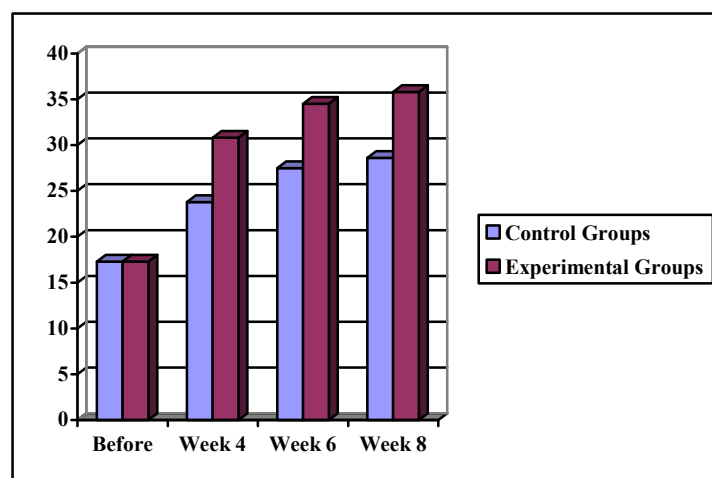
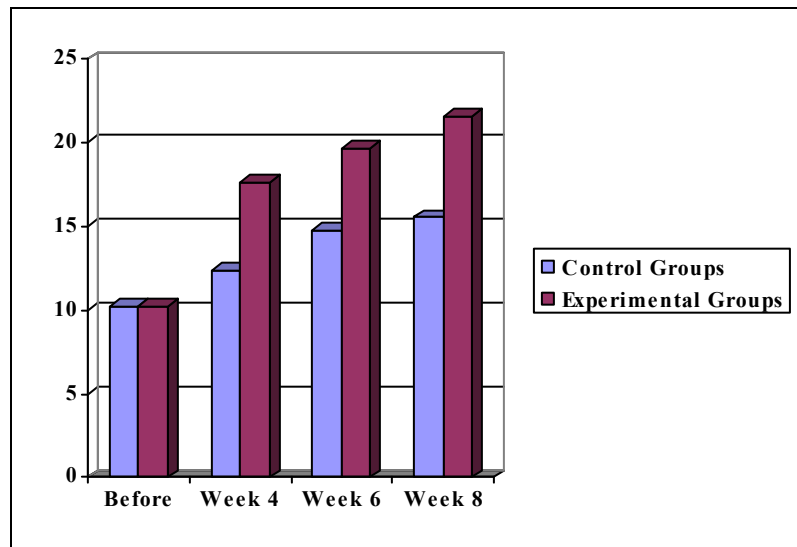


Figure 4 The comparative of average from the experimental group and control group in the inside of the foot skill test

Table 3 The result of the test from the transfer and swash skill

Sample		Before	Week 4	Week 6	Week 8
Control Groups	$\bar{x}$	10.20	12.40	14.75	15.55
	S.D.	1.88	2.34	1.86	1.84
Experimental Groups	$\bar{x}$	10.20	17.60	19.65	21.60
	S.D.	1.70	2.54	2.23	2.58

**Figure 5** The comparative of average from the experimental group and control group in the transfer and swash skill test**Table 4** The inside of the foot skill test

Time	$\bar{x}$ /S.D.	Control Groups	Experimental Groups	t	p
Before	$\bar{x}$	17.30	17.30	0.00	1.00
	S.D.	5.12	5.06		
Week 4	$\bar{x}$	23.80	30.80	-3.16	0.003*
	S.D.	6.29	7.66		
Week 6	$\bar{x}$	27.50	34.50	-2.79	0.008*
	S.D.	8.42	7.43		
Week 8	$\bar{x}$	28.60	35.80	-2.84	0.007*
	S.D.	8.40	7.60		

*P ≤ 0.05

Table 5 The transfer and swash skill test

Time	$\bar{x}$ /S.D.	Control Groups	Experimental Groups	t	p
Before	$\bar{x}$	10.20	10.20	0.00	1.00
	S.D.	1.88	1.70		
Week 4	$\bar{x}$	12.40	17.60	-6.71	0.000*
	S.D.	2.34	2.54		
Week 6	$\bar{x}$	14.75	19.65	-7.54	0.000*
	S.D.	1.86	2.23		
Week 8	$\bar{x}$	15.55	21.60	-8.51	0.000*
	S.D.	1.84	2.58		

*P ≤ 0.05

From the Figure 5, it shows the comparative of average from the experimental group and control group in the transfer and swash skill test. Before training, it has not different both in average. After training in week 4, 6 and 8, it has the clearly different.

5.2 Compare the different of the result from the tests between the control group and the experimental group before training, after training in week 4, 6 and 8 by independent Sample T-Test.

From the Table 4, It shows the comparative of average from the experimental group (playing Takraw by nine squares with the inside of the foot) and control group (playing Takraw by the inside of the foot only) in The inside of the foot skill test. Before training, It has not different both in statistically significant different level 0.05. After training in week 4, 6 and 8, it has the clearly different statistically significant different level 0.05.

From the Table 5, it shows the comparative of average from the experimental group (playing Takraw by nine squares with the inside of the foot) and control group (playing Takraw by the inside of the foot only) in the transfer and swash skill test. Before training, it has not different both in statistically significant different level 0.05. After training in week 4, 6 and 8, it has the clearly different statistically significant different level 0.05.

6. Results

From the research the effect of Nine Squares to play Takraw sports with the inside of the foot of students in Nakhon Pathom Rajabhat University has the result;

6.1 After training in week 4, 6 and 8, the experimental group which use the training by Nine Squares Practice with the inside of the foot has the better activation in the inside of the foot before experiment. It is following by the first of hypothesis.

1) The average and the standard deviation, the result from the test of the training by inside of the foot skill in the experimental group (playing Takraw by Nine Squares Practice with the inside of the foot) before training, has the average is 17.30 and standard deviation is 5.06, after training in week 4 has the average is 30.80 and standard deviation is 7.66, week 6 has the average is 34.50 and standard deviation is 7.43, and week 8 has the average is 35.80 and standard deviation is 7.59.

2) The average and the standard deviation, the result from the test of the transfer and swash skill in the experimental group (playing Takraw by Nine Squares Practice with the inside of the foot) before training, has the average is 10.20 and standard deviation is 1.70, after training in week 4 has the average is 17.60 and standard deviation is 2.54, week 6 has the average is 19.65 and standard deviation is 2.23, and week 8 has the average is 21.60 and standard deviation is 2.58.

6.2 The experimental group which use the training by Nine Squares Practice with the inside of

the foot and the control group which use the training by the inside of the foot only has the better activation in the inside of the foot before experiment. It is different by the second of hypothesis.

1) The comparative of average from the experimental group (playing Takraw by Nine Squares Practice with the inside of the foot) and control group (playing Takraw by the inside of the foot only) in the inside of the foot skill test. Before training, it was not significantly different. After training in week 4, 6 and 8, it shows significantly different at level 0.05.

2) The comparative of average from the experimental group (playing Takraw by Nine Squares Practice with the inside of the foot) and control group (playing Takraw by the inside of the foot only) in the transfer and swash skill test. Before training, it was not significantly different. After training in week 4, 6 and 8, it shows significantly different at level 0.05.

7. Conclusion

From the study the result of the effect from the playing Takraw by the inside of the foot can use to practice with the other sports, because the result of research show that the experimental group after training in week 4, 6 and 8, which use the training by Nine Squares Practice with the inside of the foot has the better activation in the inside of the foot. It also shows that the experimental group (training by Nine Squares Practice with the inside of the foot) has the better skill in the playing Takraw by inside of the foot. So, who is interested in Nine Squares Practice can practice in another pattern or adapt in the other sports which use nervous system and muscular including to flexibility and necessary to use following the aims.

8. Recommendations

8.1 There should have another research for other sports and motivate the athlete to conscious the benefit of Nine Squares Practice.

8.2 There should take the Nine Squares Practice to use for develops the students and athlete in institutional, international and careers.

8.3 There should have the study in another pattern to the next research.

References

- [1] Sanguanpong U. **Takraw**. Nonthaburi: Thai Rom Klao; 1998.
- [2] Khetthet B. **The art of playing Takraw**. 3rd ed. Bangkok: O.S. Printing House; 2004.
- [3] Seelamad S. **The principle of training for coaching**. 4th ed. Bangkok: Chulalongkorn University Printing; 2012.
- [4] Boonban S. **The training of Sepak Takraw**. Bangkok: O.S. Printing House; 2011.
- [5] Khrabuanrat C. **The nine-box table with the brain development**. 2nd ed. Bangkok: Sinthana Copy Center; 2009.

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- [6] Department of Physical Education, Ministry of Tourism and Sports. **T-certificate: Sepak Takraw coaching guide**. 2nd ed. Bangkok: The War Veterans Organization under Royal Patronage; 2012.
- [7] Luangtragul S. **The article of Anatomy and training**. Bangkok: Sports Authority of Thailand; 2007.
- [8] Cheangtong A. **The test of Sepak - Takraw for boy students in Kanchanaburi**. [Master's thesis]. Faculty of Education, Kasetsart University; 2003.
- [9] Kongmeechon C. **The test of Sepak - Takraw for boy students in Suphan Buri**. [Master's thesis]. Faculty of Education, Kasetsart University; 2002.