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Proceeding

Scientific Meeting,
Welcoming 26th South-East Asian Games



The International Conference

SOLIDARITY FOR UNITY THROUGH SPORTS

Jakarta, 8 November 2011





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Preface

Assalamu'alaikum warrahmatullahi wabarakatuh

May we first made our highest praise and thank to Allah swt, for His bless we able to gathered here on the prestigious occasion of the Scientific Meeting for Welcoming the 26th Southeast Asian Games with general theme "Solidarity for Unity Through Sports" to share our knowledge and ideas with so much warmth and friendship from Southeast Asian sports community.

This conference serves as a platform which allows scholars, professionals, researchers and sport technocrats to share and discuss the latest knowledge and findings with the purpose of transforming a revitalization and rethinking in sport. The results from this conference are able to revitalize and uphold the spirit of Olympism in every sport practice including in the 26th Southeast Asian Games. In line with the commitment to enhance the communication bridge built through the cooperation between sport scientists, academics, practitioners and technocrats from all the Southeast Asia Nations.

I would like to deliver our highest respect and appreciation to Minister of Youth and Sport of Republic of Indonesia, Mr. Andi Alfian Mallarangeng, Ph.D., and it is my great pleasant to express my deep gratitude to Mr. Wayne Clews, the Director of Sport from ASPIRE Academy of Sport and Excellence Doha Qatar as our expert Scholar to sharing the latest issues we are concern. I really expect that this conference will be beneficial for all of us and have direct to the development of the sports.

Allow me to express my thank to the audiences from Indonesia and other foreign countries who are enthusiastic to attending this precious conference. I do hope that all audiences will gain important values and collaborate it into our own fields and make crucials changes in the future. Beside that, I also convey thank to all of scientific conference committes who has gave their outstanding commitment for presenting this International scientific conference.

Listed by the spirits of Olympism and the importance of bringing solidarity and unity through sports, let's join and blend together in the Scientific Conference for Welcoming the 26th Southeast Asian Games in Indonesia.

Wassalamu'alaikum warrahmatullahi wabarakatuh

Sincerely yours

Dr. (HC) RITA SUBOWO

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EFFECT OF LEARNING STRATEGY OF GAME SERIES AND SCHOOL LOCATION ON FUNDAMENTAL MOTOR SKILL OF ELEMENTARY SCHOOL STUDENTS IN PADANG

Syahrial Bakhtiar
Padang State University

ABSTRACT

This study aims to gain an overview of (1) differences in fundamental motor skills (FMS) of students between a group of students who were subjected to a learning strategy of game series (GS) with a group of students who were given treatment of conventional learning (CL), (2) differences in FMS of students between a group of students in urban school sites (U) and a group of students in suburban school site (SU), (3) the interaction of learning strategies and school sites to the FMS of students, (4) differences in FMS of students between a group of students whose school is located in urban treated with a learning strategy of game series (U-GS) and treated conventional learning (U-CL), (5) differences in fundamental motor skills of students between a group of students whose school is located in suburban treated with conventional learning (SU-CL) and learning strategy of game series (SU-GS). This study uses an experimental method with a 2x2 factorial design, with population was all students of Elementary School in Padang, and sampling technique was multi-stage random sampling. The data were analyzed by analysis of variance technique (ANOVA) two lines with a 2x2 factorial design.

The study determined that: (1) there is difference in FMS among GS group with CL group of students, where students who were learned basic movement through a learning strategy of series game showed more skillful than the conventional learning strategies, (2) there is a difference between the FMS of U group with SU group, where the FMS of U group are better than students of SU group, (3) there is interaction between the learning strategy with the location of schools on students' FMS, (4) there is a difference between the FMS of U-GS with FMS of U-CL group, where the FMS students are provided learning through GS is higher than students who received CL, (5) there are differences in FMS between SU-GS with the SU-CL, where FMS of SU-GS group is lower than FMS of SU-CL.

Key-words: learning strategy of game series, conventional learning strategy, fundamental motor skill

INTRODUCTION

According to Prayitno (2009) education is variety but one, namely humanitarian efforts to glorify man. Meanwhile, the *National Association for Sport and Physical Education*

(NASPE) United States (2004), argued that in order for the children ready to enter the 21st century, what must be known by children and what they can do to prepare for their future? Education must ensure that they are prepared to take a role in society, able to compete globally, living in good health, and productive. For that, at least prepared two types of standards for their education, that are the content standards and performance.

Content standards are defined as "what students should know and be able execution of", while the performance standard is defined as "how well students can do it". Furthermore, the content standard has three objectives: (1) ensure that standards are internationally competitive, (2) ensure that they acquire the best knowledge about teaching and learning, (3) ensure they have been developed in all aspects, may adopt the disclosure process.

To provide the knowledge and skills and ensure a comprehensive development to elementary school students, the ministry has set the various fields of study that must be taught, one of these subjects are Physical Education (PE). Providing knowledge and skills in teaching PE in order to fulfill the holistic task for the child's development.

According to Corbin (1980) one of the concepts of the development is the totality, the individual is an integrated organism, rather than the separate parts and does not connect with one aspect of the other. Therefore, to allow for optimal development, it is necessary that a thorough and balanced development between the physical aspects of motor skills, intelligence, emotions, and social development.

Further Kiram (1995) said that ignoring the views of the motor acts as a portion of human behavior, is to ignore the totality of human existence as a *bio-system-sociocultural psicho*. Thus, means paying attention to the development of motion which is done through a variety of motor activity in PE learning and in a variety of training programs for children, not only interpreted as an attempt to master of sport motor skills, but also as an effort for the establishment of personal integrity.

According to BSNP Department of National Education (2005), Learning Physical Education, Sports, and Health aims for the learners have some capability, including: improving the ability and Fundamental Motor Skill (FMS). Fundamental skill by Pangrazi (2007) is a skill that forms the basis of human movement. Ability of motion in FMS describes the degree of mastery of skills in using your fingers, eye-hand and eye-foot coordination, tempo-balance, and visual perception. According to Goodway and Robinson (2006) the basic motor skills is *the ABC* of the motion.

In addition, Pangrazi (2004) explained that It is important to learn FMS at an early age because they will experience obstacles in performing skills that are more difficult in the future. There are two important parts in the development of motor skills: learn various skills and learn concepts about motion. Jalal (2009) added studies of brain development, behavior, motor skills and intelligence in related with nutrition in Indonesia are still few in

FMS of students, (4) differences in FMS between a U-GS with U-CL, (5) differences in FMS of students between a SU-CL with SU-GS.

METHOD

This research used a 2x2 factorial experiment with design, as shown below:

Table 1. Experiment design of 2x2 factorial

Learning Strategy	Game Series	Conventional Learning	Total
	(GS)	(CL)	
School Location	(A ₁)	(A ₂)	
Urban (B ₁)	A ₁ B ₁	A ₂ B ₁	B ₁
Suburb (B ₂)	A ₁ B ₂	A ₂ B ₂	B ₂
Total	A ₁	A ₂	Total

This study was conducted on January to June 2010 and used Padang Elementary School students as research subjects.

The treatment research is the implementation of the experiment by using a learning strategy of game series (GS) in one group and the conventional learning strategies (CL) to the other group for 6 months. The series of games based on the opinion given by Grossing (1975) said learning strategy game series is a series of sequenced lessons from the simple form of a game to more difficult and complex leads to the actual game, and learning from whole to part. Then Kiram (1995) suggested, to develop a form of game can be done by constructing and changing the rules of the game itself, in accordance with the objectives to be achieved

The study population was all elementary school students in Padang which the location of his school is in urban and suburb. Samples were taken in a *multi-stage random sampling*. The first phase, conducted area sampling (school location) in *the cluster*. The second phase, carried out the determination of the number of samples based on age and gender by *proportional random sampling*, the samples were selected from each age and region based on the selection. So we get the number of samples as follows:

Table 2. Sample of the research

Age Student	The series of strategy games-GS					Conventional strategies-CL				
	Urban		Suburban		Total	Urban		Suburban		Total
	Boy	Girl	Boy	Girl		Boy	Girl	Boy	Girl	
6 years	30	30	30	30	120	30	30	30	30	120
8 years	30	30	30	30	120	30	30	30	30	120
10 years	30	30	30	30	120	30	30	30	30	120
Total	120	120	120	120	360	120	120	120	120	360

Research data was obtained by used test fundamental motor skills TGMD-2 compiled by Ulrich. According to Goodway, Crowe, Ward (2003) *Test of Gross Motor*

Development-2 (TGMD-2) prepared by Ulrich (2000) has been selected to measure the ability of fundamental motor skills and proven its validity and reliability.

Mean of test-retest used to measure the reliability coefficient showed .96 to .97 for the Locomotorskills and object control skills. Content validity is obtained through the assessment of three experts, and construct validity is determined through factor analysis.

TGMD-2 evaluates appearance Locomotor skills, which consists of: 1) run; 2) gallops; 3) hops; 4) leap; 5) horizontal jump, and 6) slides, and motion of object control consists of: 1) striking; 2) stationary dribble, 3) catch; 4) kick; 5) overhand throw, and 6) underhand roll.

Before the data were analyzed, testing requirements analysis performed on data obtained as a prerequisite for the use of statistical analysis techniques. Further testing of hypotheses would be done. Test of requirements analysis was used were Liliefors normality test and variance homogeneity test with the Bartlett test. Testing the hypothesis of this study used the analysis of variance (ANOVA) technique two-lane with 2 x 2 factorial design. Confidence level used for the test was $\alpha = 0.05$. A significant hypothesis testing followed by Tukey test. Tukey test is used to see the effect better interaction.

RESULTS AND DISCUSSION

Requirements of data analysis test showed that groups data in this study came from a normally distributed population and have a homogeneous variance. Since, the normality and homogeneity requirements were met so that data can be analysed with analysis of variance in testing research hypotheses.

Overall, the data analyzed, the data obtained can be described as a 2x2 factorial in the table below:

Table 3. Data description

Learning Strategy School Location	Game Series (A ₁)	Conventional Learning (A ₂)	Total
Urban (B ₁)	Score: 51-98 Mean: 79.56 Simp.baku: 10.71	Score: 33-96 Mean: 72.38 Simp.baku: 13.45	Score: 25-98 Mean: 75.01 Simp.baku: 14.27
Suburban (B ₂)	Score: 25-95 Mean: 75.97 Simp.baku: 12.66	Score: 40-96 Mean: 77.42 Simp.baku: 12.81	Score: 33-96 Mean: 72.38 Simp.baku: 13.43
Total	Score: 33-98 Mean: 75.97 Simp.baku: 12.66	Score: 22-96 Mean: 72.53 Simp.baku: 15.24	Total

1. Comparison of FMS of GS group with FMS of CL group

In the GS group of students showed that 20.83% of the samples obtained an average score of FMS, 37.92% of the samples scored below average value, and 39.44% of the samples scored above the average. While the FMS of CL group showed 20.56% of the samples obtained an average score of FMS, 38.06% of the samples who obtained scores below the average value, and 41.397% of the samples obtained a score above the average. For more details, such data can be described by the following histogram:

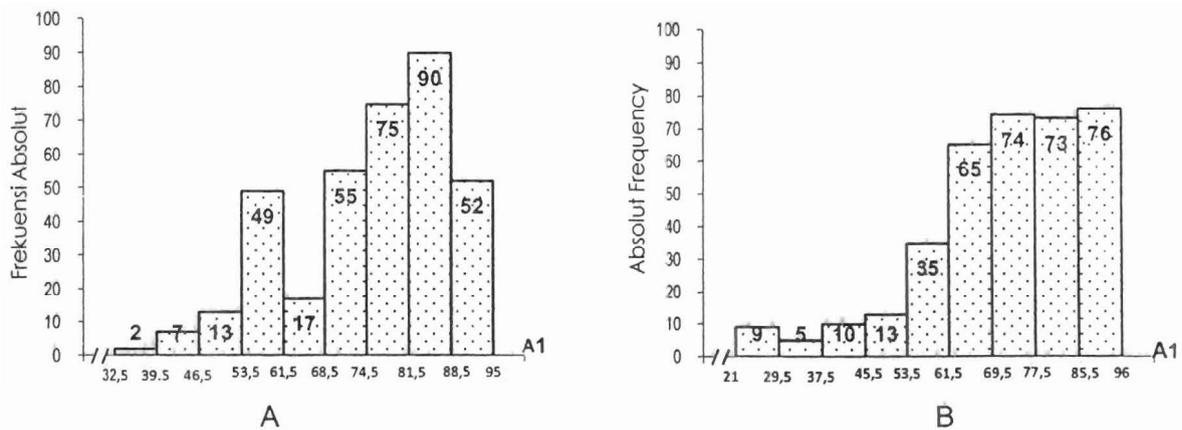


Figure.1.Histogram of FMSscore for GS (A) and CL (B) group

2. Comparison of FMS of U group with FMS of SU group

FMS of U students group performed 24.44% of samples obtained an average score of student FMS, 33.61% of the samples who obtained scores below the average, and 42.95% of the sample obtained scores above the average. While the FMS of SU students group showed 21.67% of the samples obtained an average score of FMS, 32.78% of the sample who scored below average score, and 45.56% of the sample scored above the average. Histogram showing the comparison of these two groups are as follows:

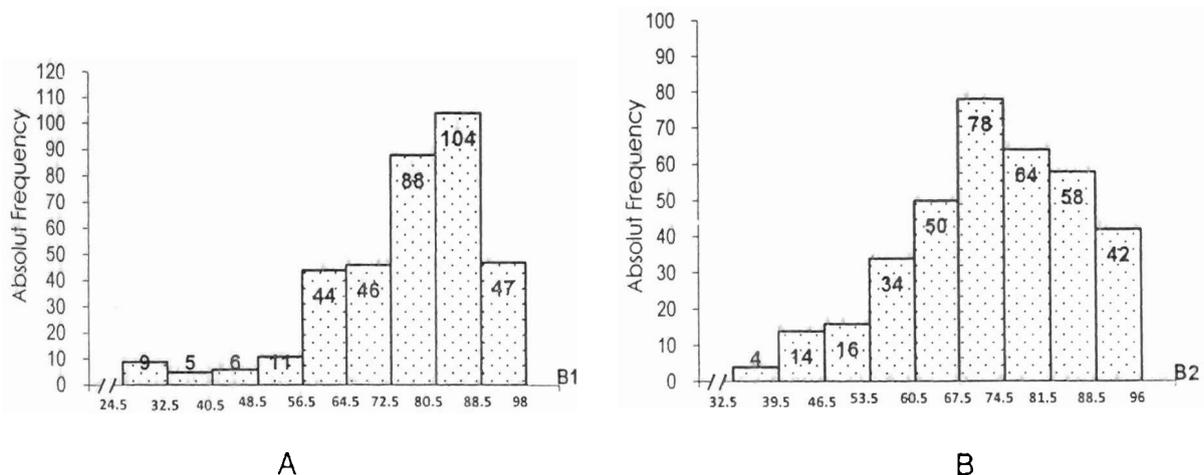


Figure 2. Histogram of the FMS Score of U Group (A) and FMS of SU group (B)

3. Comparison of FMS of U-GS with SU-GS

FMS score of U-GS students was 21.67% of samples obtained an average score of FMS, 25.00% of the samples who obtained scores below the average, and 53.33% of the samples scored above the average. Meanwhile, FMS of SU-GS showed 23,33% of the samples obtained an average score of FMS, 36.67% of the samples obtained scores below the average, and 40.00% of the samples scored above the average. To be clear, these two groups of data can be described by the following histogram:

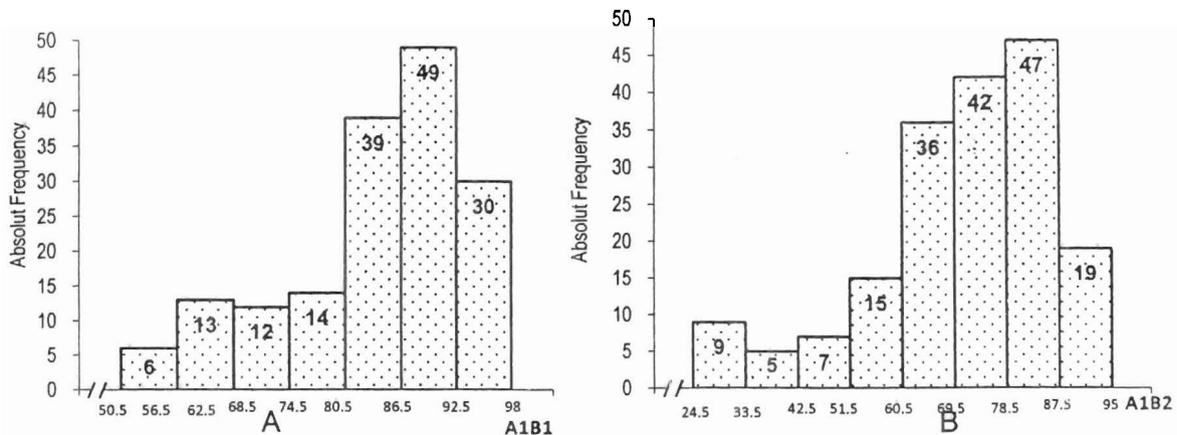


Fig.3. histogram of FMS of U-GS group (A) and SU-GS group(B)

4. Comparison of FMS of U-CL students with SU-CL students

Based on the results of TGMD-2 tests of U-CL students demonstrated that 19:44% of samples obtained an average score of FMS, 47.78% of the samples got scores below the average, and 32.78% of the samples scored above the average. While the SU-CL students showed the results 17.78% of samples obtained an average score of FMS, 41.11% of samples obtained scores below the average, and 41.11% of samples scored above the average. More details can be viewed as follows:

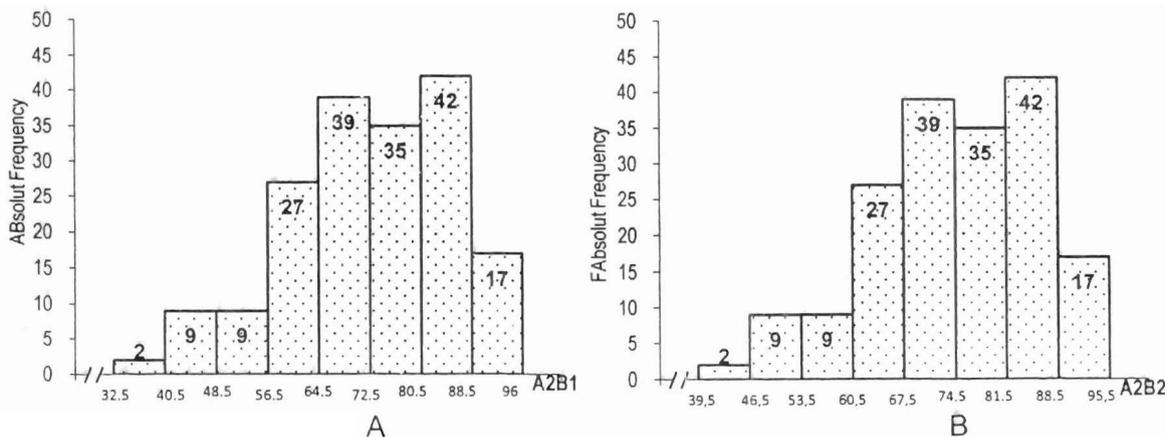


Figure 4. Histogram of FMS of U-CL group (A) and FMS of SU-CL group (B)

5. Hypothesis Testing

Hypothesis testing in this study carried out by using analysis of variance test with two lanes, as summarized in the following table:

Table 4. ANAVA two lanes :table of FMS

Source of Variance	df	Number of squares (JK)	Average of Quadratic (RJK)	F _{count}	F _{table}		Conclusion
					a = 0,05	a = 0,01	
Learning Strategy	1	5088.05	5088.05	33.66**	3,85	6,68	Very Sig
School Location	1	657.42	657.42	4.35*	3,85	6,68	Sig
AB inter	1	18768.02	18768.02	124.16**	3,85	6,68	Very Sig
Fallacy in	716	108227.83	151.16	-	-	-	

The existence of significant interactions and main effects between the learning strategies and location of school in the analysis of variance at the top then proceed with testing using the Tukey test between pairs of data to determine the group average, whichever is higher between the two groups of paired data.

Table 5. Results of Tukey Test between Group Data

Group	n	Q _{count}	Q _{table}		Conclusion
			a = 0.05	a = 0.01	
A ₁ - A ₂	720	11.60 **	2.77	3.64	Very Significant
B ₁ - B ₂	720	4.17 **	2.77	3.64	Very Significant
A ₁ B ₁ - A ₂ B ₁	360	23.96 **	2.77	3.64	Very Significant
A ₁ B ₂ - A ₂ B ₂	360	7.55 **	2.77	3.64	Very Significant

Test results as shown in Table 4 and Table 5 can be explained as follows:

1. FMS differences between GS approach group (A1) with CL approach group (A2)

From the calculation ANAVA above seen that the $F_{\text{calculated}} = 33.66 > F_{\text{table}} (\alpha = 0.01; 1/720) = 6.68$. This meant that differences in FMS between GS group with CL group of students proved to be very significant. From the Tukey test, value of $Q_{\text{count}} = 11.60 > Q_{\text{table } a = 0.01, 720} = 3.64$. This implied that there are very significant differences between the FMS of GS group who had higher score than CL group of students.

In accordance with John Locke in Adisasmita (1989) advised to use a method of discovery and game to create a pleasant atmosphere learning, in addition to the general methods of praise and private criticism. Subsequently, the pragmatic ideology believe that the game should be held so that the desire of moral and ethical judgments can be

developed. Great attention of students is important, students will learn about something interesting. Therefore, the energy and time should be given widely to motivate students. It is also argued that the ideology of humanitarian philosophy advocated the using of the situation as a motivational process.

Furthermore, Clark, in Ellington (1981) suggested that the game is a means that leads participants to compete, for example, to achieve victory, which the rules have been agreed before. Two things must be present in a game are the competitive nature and a set of game rules. Because of willing to be the winner, the students raced to master the skills to play well or displaying their ability in earnest. The students not only physically involved, but also cognitively, and encouraging classroom atmosphere, eventually students gain learning activities, and subsequently become a learning experience that is meaningful in learning movement skills.

FMS of GS group of students was higher than the CL group of students, because the strategy GS practice more actively and to achieve motor skills during active time in practicing is the main thing.

2. FMS differences between U group (B1) with SU group (B2)

From the ANAVA calculation seen that the $F_{\text{calculated}}$ value == 4,35 > $F_{\text{table } \alpha = 0.05, 720} = 3.85$. It meant that FMS difference between U groups with SU groups proved significant at $\alpha = 0.05$.

Tukey test, showed the value of $Q_{\text{count}} = 4.17 > Q_{\text{table } \alpha = 0.05, 720} = 3.64$. This meant that there werw significant FMS differences between U groups whose score is higher than SU group of students.

The findings are in line with several situation which was met as follows: (a) students in the urban had more chances and opportunities for socialization in variety of games, the availability of a PE teacher who guided learning motor skills, relatively easy to get sports facilities and infrastructure, (b) students in the suburbs have less opportunity for physical activity, due to open space is increasingly difficult to find, were hereditary only play certain games, less variable in the sense that only train certain FMS, male students are more dominant in the movement of the foot, running , skip, etc; less completely involved with the game using hand. Female students even more limited due to socio-cultural barriers, lacked of chance to play, this is in accordance with the results of research conducted Gusril (2005) which revealed most of the children in the city of Padang is very low chances of playing, and not all of schools have qualified Physical Education teachers.

3. The interaction between Learning Approach to the Schools Location on the FMS

Test results based on the interaction ANAVA calculation showed that the $F_{\text{calculated}}$ value = 124.16 > $F_{\text{table } \alpha = 0.01, 1 / 720} = 6.68$. This meant that there are interactions between the

provision of learning approaches with school location is shown very significant. The highest FMS score of students in urban schools was gotten by GS approach, while the students suburb schools got the highest FMS score by CL approaches. This indicated that there was an interaction between the learning strategies in learning the basic movement skills with school site.

4. FMS differences between U-GS group (A1B1) with U-CL group (A2B1)

Tukey test between groups of U-GS and U-CL students showed that values $Q_{count} = 23.96 > Q_{table \alpha=0.01, 360} = 3.64$ which meant that U-GS group higher significantly than U-CL group. The learning method of game requires children to participate actively in the running and educators tend to be only a steering and facilitator. Students play a major role in carrying out learning activities. Students are required to seek a strategy how to win the game. In addition, students are encouraged to perform a job that leads to the goals to be achieved and to train responsibility. Thus, by themselves, a lot of students will perform actions that can accelerate the process of fundamental movement skills of children.

Students in the urban who do the learning in conventional, although the availability of adequate facilities, they will not be able to thrive when they are faced with learning methods that make them passive. Conventional learning only requires teachers activity and creativity while the students as the object that receives even adequate facilities are available. So, with many facilities available, the condition of a homogeneous society, which many sources of information as well as the heterogeneity of social problems will help students in the process of maturity coupled with the method of game learning that greatly help to speed up the basic motion in children. So it can be concluded, that the method of game learning to children who live in the urban will speed up more to the process of increasing FMS in children, and vice versa, if the students in the urban were never given learning with the game series learning strategy, the process of improving motor skills basic will more slow down in children.

Thus, the motor skills of U-GS group were better than U-CL group.

5. FMS differences between SU-GS (A1B2) group and SU-CL (A2B2)

The Tukey test between group of SU-GS with SU-CL determined the values obtained $Q_{count} = 7.55 > Q_{table \alpha=0.01, 360} = 3.64$. Thus there is a very significant difference in the effect, where FMS score of SU-GS group was lower than FMS of SU-CL group.

Limitations of the suburbs certainly have an impact on child development in the suburbs, including students who are in the suburbs, because the child's developmental level is also influenced by the surrounding environment, both natural factors and social factors that occurred in the suburbs. Thus, teachers in suburbs prosecuted examine the various advantages and limitations of students, that is by utilizing a variety of circumstances that children are more active and enjoys playing activities. Teachers are demanded active and creative in designing the forms of the game to develop all the elements of basic motor skills,

so that students are intrigued and arise motivation to develop their skills. Therefore with less successful of game series learning strategies in developing basic skills for students, the teachers are very determining factor for the successful implementation of game series learning strategy (GS) in the future.

Thus, for students who live in the suburbs and get school in the suburbs too, and tend to be more pleased with the conventional learning needs to beexposed more intensive and open approach, thus students have a willing to make changes and provide an understanding of the importance of studying all elements of basic motor skills, so that they feel it is essential to perform variety of other games.

CONCLUSIONS

Overall, it can be concluded, that:

1. There are differences in FMS between GS group and CL group, where GS students showed better skills than CL strategies.
2. There are differences FMS between U group of students with SU group, where the FMS of U groupwas better than students of SU group.
3. There was an interaction between the learning strategy with the location of schools on students' FMS.
4. There are differences in FMS between students in U-GS group with students in U-CL group, where the FMS of U-GS was higher than students FMS of U-CL.
5. There are differences in FMS between SU-GS students and SU-CL students, where the FMS of SU-GS students was lower than FMS of SU-CL students.

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