

**The Implementation of Small-Side Games Practise Model on Improving Students' Intrinsic Motivation and Social Behavior****Yoga Rahmatullah Lugaya<sup>1</sup>, Komarudin<sup>2</sup>, Mustika Fitri<sup>2</sup>**<sup>1</sup>Program Studi Pendidikan Olahraga, Sekolah Pasca Sarjana, Universitas Pendidikan Indonesia, Indonesia<sup>2</sup>Fakultas Pendidikan Olahraga dan Kesehatan, Universitas Pendidikan Indonesia, Indonesia**Article Info***Article History :**Received July 2019**Revised July 2019**Accepted August 2019**Available online September 2019**Keywords :**Intrinsic Motivation, Small-Side Games, Social Behavior***Abstrak**

Tujuan utama dari penelitian ini adalah untuk mengetahui pengaruh small-side games terhadap motivasi intrinsik dan perilaku sosial dalam pembelajaran pendidikan jasmani. Di dalam dunia pendidikan, khususnya di Indonesia, penggunaan quasi eksperimen sangat disarankan mengingat kondisi objek penelitian yang seringkali tidak memungkinkan adanya penugasan secara acak. Populasi penelitian adalah siswa SMPN 1 Subang yang mengikuti Ekstrakurikuler Bolabasket sebanyak 48 siswa. Penentuan sampel menggunakan teknik Random Cluster Sample dan didapatkan 20 siswa kelompok kontrol dan 20 siswa kelompok eksperimen. Instrumen yang digunakan ada dua yaitu menggunakan IMI (Intrinsic Motivation Inventory) dan SSBS (School Social Behavior Scale). Hasilnya adalah perkembangan Intrinsic Motivation kelompok eksperimen yang lebih besar daripada kelompok. Lalu untuk perkembangan social behavior kelompok eksperimen juga lebih besar daripada kelompok kontrol. Kesimpulan adalah bahwa penelitian ini mengungkapkan betapa pentingnya proses pembelajaran yang dibuat dengan sangat menarik dan mudah dilakukan oleh siswanya, hal ini dikarenakan adanya pengaruh ketika proses pembelajaran dibuat menarik dan lebih memiliki nilai dalam setiap kegiatan yang dilakukan siswa terhadap motivasi intrinsik dan perilaku sosial setelah melalui proses pembelajaran dengan menggunakan model latihan Small-Side Games.

**Abstract**

The aim of this study was to determine the effect of small-side games on intrinsic motivation and social behavior in physical education learning. In education, especially in Indonesia, the use of quasi experiment is highly recommended since the condition of the object of the research that often does not allow random assignments. The population of the study were students of Subang 1 Public High School who participated in the Bolabasket Extracurricular. The samples of the study were 48 students chosen by using the Random Cluster Sample technique and divided into control group and experimental group. The instruments used were IMI (Intrinsic Motivation Inventory) and SSBS (School Social Behavior Scale). The results showed that the development of the Intrinsic Motivation on experimental group is higher than the control group. The experimental group was also higher in social behaviour than the control group. The conclusion is that this study reveals the importance of interesting learning process. An interesting learning process with more values in every activity has a positive impact on the students' intrinsic motivation and social behavior.

## INTRODUCTION

Indonesian Small-sided games (SSGs) are used in the teaching-learning process or team sports training since they present tactical, technical, physical, and other components related to game performance (Hoffmann, Reed, Leiting, Chiang, & Stone, 2014). SSG also presents organizational characteristics which is similar to formal games (Davids, Araújo, Correia, & Vilar, 2013), and their conditions can be easily modified to train certain game components while maintaining game logic. Teaching models that focus on declarative/procedural tactical knowledge use SSG to facilitate players' understanding of formal game (Greco, Memmert, & Morales, 2010). Modifying the SSG conditions (number of players per team, for instance) can change the characteristics of the environment in a method that can be controlled and can encourage athletes/students to perform desired behavior (Araújo, 2013; Davids, Button, Araújo, Renshaw, & Hristovski, 2006). Therefore, systematic changes in SSG conditions enable teachers and trainers to adjust tactical and technical demands according to their practice/training objectives.

SSG can be defined as a limited game that is practiced in a small space, oftentimes with adapted rules and a smaller number of players (Hill Haas, Dawson, Impellizzeri and Coutts, 2011). These constraints make it possible to adapt the game to the characteristics and needs of players, which makes SSG a special framework in teaching team sports (Ortega, Alarcón and Piñar, 2012; Owen, Twist and Ford, 2004). Decreasing the number of players allows each player to make more contact with the ball, resulting in more dribbling, passing, shooting and stealing (Koklu, Ascii, Kocak, Alemdaroglu and Dundar, 2011; Reilly, 2005), which contributes to a better technical development. The tactical knowledge of the players can be developed by continually exposing players to offensive and defensive situations (Dellal, Jannault, Lopez-Segovia and Pialoux, 2011). This SSG tactical problem requires creativity to be solved. Creativity can be defined as the ability to make varied decisions and flexible steps that will allow players to solve tactical problems in game courses and which are very important for team sports (Memmert, 2010; Memmert and Roth, 2007). This decision-making ability will increase if the individual learns how to harmonize relevant environmental information

that supports actions swiftly and explore behavior (Davids, Araújo, Correia and Vilar, 2013; Travassos et al., 2012).

Factors that influence student motivation in PE can be divided into two aspects, namely internal and external. Internal factors contain individual characteristics (eg age, gender, school grade level, ability level, physical traits), character variables (eg attitude, perceived competency, task, and ego orientation, goal orientation, intrinsic motivation), and individual situation variables (for example sports training during leisure time, reasons for participating in sports, perceptions about success) (Blanchard et al., 2007; Cloes, 2005). Four character variables related to individual differences have been shown to affect intrinsic motivation in physical education. These are perceived competencies, perceived independence, explaining the goals of achievement, and the perceived benefits of physical education classes (Hassandra et al., 2003). If students feel that they can do something in a physical education class, they will also feel happy to participate actively (Cairney et al., 2012; Kolovelonis & Goudas, 2013). Students who feel they can do a task on their own in physical education classes show a higher level of intrinsic motivation (Goudas, Biddle, & Fox, 1994; Hagger, Barkoukis, Chatzisarantis, John Wang, & Baranowski, 2005). Some argue that intrinsic motivation is the desire to act due to internal motivating factors (Thornburgh, 2006). Individuals who are driven by intrinsic motivation will only be satisfied if the activities carried out have achieved the results involved in that activity.

Social Cognitive Theory (Bandura, 1999) can function as a framework for understanding adolescent physical activity during physical education (Motl, 2007). Social Cognitive Theory emphasizes that actions are influenced by personal, environmental and behavioral factors that are dynamic and always interacting (Bandura, 1999). Applied to physical education, social cognitive theory shows that environmental factors, such as classroom context, lesson content, and teacher behavior, affect student behavior directly or indirectly through decisive changes in a person's personality (eg pleasure, one's abilities). Various social skills learning interventions have been effective in improving social skills that are appropriate in the educational environment. Teaching social skills, based on social learning

theory, emphasizes positive things to be able to replace negative behaviors with better things done by students and to teach students to build social behaviors that are beneficial for the future (Cartledge, Gardner, and Ford 2008; Chen 2006). This instruction usually involves samples of social behavior, feedback, direct practice, reinforcement, trying to behave, and behavior change (Moore, Cartledge, and Heckman 1995). Based on social learning theory, most behaviors are learned and thus direct instruction can be used to teach appropriate social behavior (Ormrod 1999). The main goal in developing people who know physical education is to help students engage in positive social behavior (NASPE, 2004). Considering the desire to strengthen positive social behavior and reduce bullying behavior and its adverse effects on mental health (Kaltiala-Heino et al., 2000), it is worth exploring factors that can predict social behavior in physical education.

With the contents of the game in physical education learning, a competitive environment is known to be beneficial for students who often experience success (victory) and see their physical competency to be the same or better than other friends, while perceived competence and intrinsic motivation will decrease for students who experienced less favorable results, compared to other friends (ie defeat) (Vallerand, Gauvin, & Halliwell, 1986); therefore, one of the key factors in girls who do not like physical education learning and who have a lower level of competency during physical education learning is compulsory participation in competition, which is generally disliked by female students (Corbin, 2002; Reinboth, Michael; Widower, Joan; Ntoumanis, 2004). (Malone and Lepper, 1987) claim that every individual wants an optimal level of challenge; that is, we are challenged by activities that are not too easy and not too difficult to do. Also, there are several ways in which an optimal level of challenge can be obtained. Goals must be clearly defined, but the possibility of achieving them must be uncertain. The game must use progressive difficulty levels, multiple objectives, and ambiguity of information to ensure uncertain results. Performance feedback and scoring allow individuals to follow progress towards desired goals. The end of the goal must be meaningful for the individual.

Therefore the main purpose of this study is to determine the impact of small-side games on intrinsic

motivation and social behavior in physical education learning from a group of junior high school students (ages 12-14 years). The second objective of this study is to investigate whether there are differences in intrinsic motivation and social behavior between the two classes, one of which is given the application of the small-side games exercise model.

## **METHODS**

### **Research Design**

Researchers used experiments when they want to show possible causes and effects between independent and dependent variables. This means that the researcher tries to control all variables that affect the results of the independent variables. An important matter of a true experimental design is that subjects are randomly assigned to the treatment group. The random assignment is a powerful technique for controlling some of the subject's characteristics concerning internal validity, the main consideration in educational research (Fraenkel, Wallen, & Hyun, 2013, p. 275). Two groups of subjects were used/determined, then the two groups are measured or observed twice. The first measurement is called a pretest, and the second as a posttest.

### **Population, Sample and Instrument**

Population is the studied group or to which the SSG treatment program will be applied. As for a similar opinion, "Population is a large group of interest by researchers, the group is expected to generalize its results in a study" (Fraenkel & Wallen, 2013). The population of this study was students of SMPN 1 Subang who took part in the extracurricular activities of the Basketball as many as 48 students comprising of 7th, 8th, and 9th-grade students.

Sampling in this study used a random cluster sampling technique since the researcher takes a random sample of the population and in the cluster random sampling technique the researcher does not create a new class for sample selection, so the sample selection uses available groups and the sample is chosen based on groups of 2 classes. Using random cluster sampling on efforts to maintain the presence of samples in each treatment (Freankel et al. 2013).

The steps in determining a sample with cluster random sampling technique in this study are:

1. The first stage uses the draw from three class groups into two class groups for an experimental group.
2. The second stage, after getting two class groups into an experimental group, they were drawn again to determine the first experimental group using the Small-Side Games exercise model and the second experimental group using the conventional training model.
3. The third stage, selected class VII using the treatment model of Small-Side Games training with a total of 20 students, and class VIII using a conventional training model with a total of 20 students.

The instrument contains recording procedures that are consistent with the data that the researcher needs to answer research questions or hypotheses. The results of filling the instrument in the form of data can be self-reported by the participants providing information, such as on an achievement test or on a behavior questionnaire. Or, researchers can record data on forms by observing, interviewing, or collecting documents.

1. Measuring instrument for social behavior using School Social Behavioral Scales (SSBS) (Merrell, 2002).
2. Intrinsic motivation for sports and physical education is measured using the Intrinsic Motivation Inventory (IMI) (McAuley, Duncan, and Tammen, 1987).

Questionnaire is several written questions used to get information from respondents regarding self-determination.

### Data Collection Technique

In collecting data for studies, there were several steps that researchers took, such as selecting participants, getting permits, choosing types of data, identifying instruments, and managing data collection. Once the researcher knows what needs to be done on the research, the researcher can immediately carry out the research that was planned. As with pre-test and post-test data collection, all the participants completed two

questionnaires: Measuring instrument for social behavior using the School Social Behavioral Scales (SSBS), intrinsic motivation for sports and physical education were measured using the Intrinsic Motivation Inventory (IMI). Then, Participants complete one of the game modification learning conditions (SSG) with one of the classes given the intervention of a motivational program and social behavior.

### Data Analysis

The data analysis technique used to analyze the research data that has been collected is the t-test technique with  $p\text{-value} \leq 0.05$ . This analysis technique is used to determine the effect of game modification on social motivation and behavior for gender in physical education learning in schools. The analysis process is carried out with the SPSS program. Steps taken by conducting data hypothesis testing are carried out to reach conclusions from the data obtained. The statistical analysis used to test hypotheses to find conclusions is determined by the results of data normality tests. In testing this hypothesis, the author conducted a study of the application of game modifications (Small-Side Games) to increase motivation and social behavior in physical education. The testing is conducted to find out whether there is an impact of motivation and social behavior program intervention on increasing student motivation and social behavior by applying SSG. The statistical analysis was used to determine the increased ability of motivation and social behavior using the ANOVA test at  $p\text{-value} \leq 0.05$ .

### RESULT

To find out the differences in the development of intrinsic motivation and social behavior of students through the application of the Small-Side Games model in learning, ANOVA test was conducted. ANOVA test was carried out because of more than two groups. Obtained the results of t-test in intrinsic motivation inventory of the two groups namely the experimental group and the control group are available in Table 1. Based on the results of Table 1 sig. Intrinsic Motivation is  $0.049 < 0.05$ . This means that there are differences in the development of Intrinsic Motivation through the application of the Small-Side Games training model. T-test results of the school social behavior scale of both groups,

namely the experimental group and the control group are found in Table 2.

**Table 1. IMI t- Test Result (ANOVA)**

		ANOVA				
		Sum of Squares	df	Mean Square	F	Sig.
IMI	Between Groups	4.225	1	4.225	.049	.048
	Within Groups	3299.550	38	86.830		
	Total	3303.775	39			

**Table 1. IMI t- Test Result (ANOVA)**

		ANOVA				
		Sum of Squares	df	Mean Square	F	Sig.
SSBS	Between Groups	16.900	1	16.900	.185	.039
	Within Groups	3463.500	38	91.145		
	Total	3480.400	39			

Based on the results of Table 4.8 the value of sig. Social Behavior is 0.039 <0.05. This means that there are differences in the development of Social Behavior through implementing the Small-Side Games training model.

## DISCUSSION

In this study, it was divided into two research groups namely the experimental group (the group that was given Small-Side Games treatment with IMI and SSBS intervention) and the control group (the group that was not treated with Small-Side Games and not given IMI and SSBS intervention). The research data findings show that the experimental group is superior in developing intrinsic motivation than the control group. This has been proven by the Anova calculation in each group where the experimental group is superior in developing or increasing intrinsic motivation than the control group. Based on these results, we can conclude that although the experimental group and the control group appear to have similarities with the application of the Small-Side Games model to both groups, there are significant differences when the experimental group is given more intervention or insights about intrinsic motivation can also affect significant changes from both groups.

In SSG the players experience situations that are in line with what they encounter in actual competitive matches (Owen et al., 2004). Because of this fact, game-based conditioning using SSG has become a popular method for developing aerobic fitness (Impellizzeri et al., 2006). Despite the growing popularity of SSG, few research projects have examined how the intensity of the SSG can be manipulated to change training or learning stimuli (Hill-Haas et al., 2009). Research is focused on evaluating athlete's physiological, tactical, and technical responses when factors such as the number of players, field size, game rules, and coach encouragement have been modified in the SSG. Studies seem to confirm that by changing these factors, we can manipulate the overall physiological workload and perception.

Other research also aims to predict intrinsic motivation among students, when activities are considered positive, then this individual is expected to increase their intrinsic motivation. The findings reinforce the importance of creating a class atmosphere that emphasizes one's efforts in taking part in learning for self-improvement, intrinsic motivation, and perseverance. Motivated people will maximize their efforts in optimally challenging activities and their interests and pleasures can also be maintained (Emilio & Maureen, 2000). Children's participation in team sports emerges the feelings of self-competence, affiliation with peers and competitive pleasure (McCarthy, Jones and Clark-Carter, 2008; Méndez-Giménez, Fernández-Río, Cecchini and González, 2013; Ortega et al. 2008, 2012). In this regard, the use of the SSG has been highly recommended for teaching team sports to children (Castagna, D'Ottavio and Abt, 2003). Besides, the time available for physical education classes is very short, so the use of SSG allows the program to focus on games, increase the time spent with meaningful activities and where children and teens build their learning processes. Also, higher physiological demands are registered in the SSG with a smaller number of players and targets.

Throughout the studies, it can be concluded that by changing factors such as the number of players, the size of the field, the presence/absence of goalkeepers and goals, coach encouragement and rules, the coach can manipulate the effects of SSG on players. However, due to the lack of consistency in SSG design, player fitness, age, ability, level of the coach or teacher encourage-

ment, and rules of the games among the studies, it is difficult to make accurate conclusions about the effects of each factor separately. Because of this limitation, SSG management requires further investigation. Using standard conditions in SSG studies might enable a better understanding of the role of individual factors and can help researchers to find better conclusions.

Besides seeing intrinsic motivation, this study also at the same time paying attention to the presence or absence of the impact of the small-side games model given to social behavior for the two research groups, namely the experimental group (the group treated with Small-Side Games with IMI and SSBS intervention) and the control group (the group not treated with Small-Side Games and not given IMI and SSBS intervention). Anova's calculation also proved this in each group in which the experimental group is superior in developing or improving social behavior than the control group. Based on these results, we can conclude that though the experimental group and the control group appear to have similarities with the application of the Small-Side Games model to the two groups, there are significant differences when the experimental group is given more intervention or insight on its social behavior as well can affect significant changes in both groups.

The results of other studies show that by changing the number of players and the duration of specific Futsal training, the coach can change the physiological and technical stimulation of the players. A decrease in the number of players causes an increase in intensity, perhaps because of the greater area-per-player ratio. This finding is consistent with two studies developed in other team sports (Rampinini et al., 2007. Foster et al., 2007), and confirms the results of our exploratory studies on futsal (Duarte, 2007) relative to aerobics to a maximum. Some technical skills also change with variations in the number of players, with a significant increase in the number of consecutive contacts with the ball and the number of dribbles in 3v3 training conditions, under the previous findings. A lower number of choices may be available for players with the ball, because he can only work with one teammate, limiting his actions and forcing more individual solutions to appear in practice.

SSG enables students to develop in a very positive environment, such as their technical, tactical, social and

mental decision-making skills (Owen et al., 2004). Many studies say that structured and well-presented activities can contribute to the development of social behavior. Promising contexts for developing social skills and values are those mediated by trained teachers and focus on situations that arise naturally through activities by asking questions to students and modeling behavioral responses (Bailey, 2006). As a result, it is justified to use SSG in physical education class planning, because it includes physical requirements similar to those found in games and focuses on learning through games. In addition, the teaching that focus on this game provides a high level of motivation and student involvement in the task. The manipulation of constraints used in this study does not affect technical and tactical performance indicators in basketball and futsal. By using only one target, the game focuses more on certain activities, allows players to act more into the game, and can increase the intensity of the game.

Modifications in the number of ball touches per person differently affect the activity of players from the first round to the last which shows that the determination of these rules must be planned appropriately by the coach or teacher under the training or learning objectives. The teacher must determine which components (technical and/or physical) they want to like, and, therefore, they must determine the amount of ball contact allowed. Finally, 3 versus 3 played in the form of SSG is best for collecting high-intensity actions simultaneously and for dealing with players with technical situations similar to those found during matches. Based on existing findings, it is hoped that understanding of the training or teaching burden will increase, giving coaches or teachers valuable information for the use of SSG training.

The learning process in school is very important when in the process some meanings can change students for the better. With the application of the interesting and meaningful learning process, it will be able to shape the better character of students in the future. In the process of training or learning, there are several methods and models for achieving success, one of which is the Small-Sided Games training model. This research reveals the importance of the learning process that is made very interesting and easy for students to do, in this case, the researcher applies the Small-Side

Games exercise model, this is because of the impact when the learning process is made interesting and has more value in every activity undertaken by students on intrinsic motivation and social behavior after going through the learning process by using the Small-Side Games training model.

## CONCLUSION

In accordance with the results of the study, it can be concluded that there is the impact of applying the Small-Side Games exercise model to students' intrinsic motivation. There is the impact of Small-Side Games on students' social behavior and there are differences between the groups given the Small-Side Games exercise model and the conventional learning groups' intrinsic motivation and social behavior.

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