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The Effect of Small-Sided Games on The Development of Student Leadership and Motivation

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Abstract

The purpose of this study was to find out the relationship between the small-sided games model intentionally structured and non-intentionally structured on students' developments and to know which one is better for early adolescents (12 -15 years), in junior high school. The population of the study were 48 students of SMPN 1 Subang who took part in the extracurricular activities of the National Basketball Association. The Random Cluster Sample technique was used to select the samples. The samples were 20 students for the control group and 20 students for the experimental group. There were two instruments used was intrinsic motivation inventory and leadership instruments. The results showed that the value of the motivation of the experimental group was higher than the value of the motivation of the control group. The results of the experimental group leadership value also showed a higher value than the control group leadership value. The results of the research conclude that a structured small-sided games are effective in increasing the students' leadership and motivation.

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INTRODUCTION

Small-sided game (SSG) model is performed in the teaching process in learning or training team sports as it provides a tactical-technical, physical, and other component related to the game performances (Hoffmann, Reed, Leiting, Chiang, & Stone, 2014). Moreover, SSG extends an organizational characteristic similar to formal games (Davids, Arau´ jo, Correia, & Vilar, 2013). In term of conditions, it can be conveniently modified to train some specific game components while maintaining game logic. Then, Teaching models that focus on declarative / procedural tactical knowledge carry out the SSG to facilitate the understanding of players about formal game (Greco, Memmert, & Morales, 2010). To modify a condition in SSG (for example, the number of players each team) is able to change the environmental characteristics in a controllable mode and to encourage athletes /students to perform the desired behaviour during the learning process (Davids, Button, Arau´ jo, Renshaw, & Hristovski, 2006).

Therefore, the systematic changes in SSG conditions allow the teachers and trainers to adapt the tactical -technical demands which is in line to their practice/ training objectives. Furthermore, SSG can be defined as a limited game practiced in small spaces, adapted rules and a smaller number of players (Hill Haas, Dawson, Impellizzeri and Coutts, 2011). These obstacles enable both teachers and trainers to adapt the game with its characteristics and player needs, which creates the SSG a special framework for teaching team sports (Ortega, Alarcón and Piñar, 2012; Owen, Twist and Ford, 2004). The decrease in the number of players possibly allows each player to make more contacts with the ball; as a result, it can have more dribbling, passing, shooting and stealing (Koklu, Asci, Kocak, Alemdaroglu and Dundar, 2011; Reilly, 2005), contributing to better technical development.

The tactical knowledge of players can be developed by continuously exposing players to offensive and defensive situations (Dellal, Jannault, Lopez-Segovia and Pialoux, 2011). These SSG tactical problems require creativity to be the solution. It can be defined as the ability to make varied, paced and flexible decisions that will enable players to solve the tactical problems appearing in the game course and essentially, for team sports (Memmert, 2010; Memmert and Roth, 2007). This decision-making ability will upgrade if one is able to learn how to align environmental relevant information supporting responsive action and exploring the behaviour (Davids, Araújo, Correia and Vilar, 2013; Travassos et al., 2012).

Leadership has been identified as an important but underdeveloped life skill among young athletes. Theresearcher is willing to develop leadership by choosing a formal educational approach to the sports captain experience. To motivate is one of the important tasks for a captain that must be faced in regular physical education classes. A captain must be able to implement motivational strategies or ways to engage unmotivated students and maintain motivation in already involved students as well. Additionally, the captain is the most frequent person to report that their leadership duties would be organizational, such as calling the coin toss and choosing the team clothes. The simplified nature of their roles and responsibilities, as well as a deliberate in lack of adult guidance and teaching, the extent to which these students actually learn about leadership should be questionable.

Physical education teachers need to understand the scientific basics and research findings in the field of student leadership in physical education learning. For example, how to be an effective leader in sport, and thus it can improve the quality of school athletics. By providing leadership training opportunities in sport, it is hoped that youth will learn lessons that will equip them with other leadership opportunities in the future. When children and teens are enrolled in sports, it is believed that they will have benefits from their experiences. Meanwhile, Parents, coaches, and school administrators assume that in addition to physical fitness, they will acquire important life skills by being there (Gould, Carson, Fifer, Lauer, & Benham, 2009).

However, it shows that sports participation itself is unable to guarantee the development of life skills, particularly, the leadership one. In a recent interview study examining the experiences of high school captains, all 13 former high school captains reported that they were untrained or unprepared by their coaches for their leadership roles (Voelker, Gould, & Crawford, 2010). There are some factors involving leadership characteristics; one of those is how the students can be more motivated

in sports. That is the duty of the team captain as a leader who can be responsible and must be able to motivate the students in his team to do something. To motivate is one of the important tasks in physical education (PE) that must be faced in regular physical education classes.

Sports teachers usually must implement the motivational strategies or ways to engage unmotivated students as well as maintain the motivation in already involved students. Physical education teachers need to know the scientific basics and research findings in the field of student motivation in physical education learning. The research aims that target the motivation in approaches to physical education seen from a social psychological point of view, Self-Determination Theory (SDT), has exclusively been the most widely used theoretical framework in investigating students' motivation in physical education (Ryan & Deci, 2000; Ntoumanis & Standage, 2009) as SDT provides an excellent fit for physical activities and physical education learning settings (Boiché et al., 2009).

The factors that influence students' motivation in physical education can be divided into internal and external aspects. Internal factors consist of individual characteristics (e.g. age, gender, school grade level, ability level, physical characteristics), character variables (e.g. attitude, perceived competence, task and ego orientation, goal orientation, intrinsic motivation), and individual situation variables (e.g. sports training during leisure time, reasons for participating in sports, perceptions of success) (Blanchard et al., 2007; Cloes, 2005). Four character variables related to individual differences have been shown to influence motivation in physical education. These are the perceived competences and independence, explaining the goal 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 actively participate (Cairney et al., 2012; Kolovelonis & Goudas, 2013). The students who feel that they can do a task on their own in physical education classes indicates 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 which is caused by an internal driving factor (Thornburgh, 2006). Individuals who are driven by intrinsic motivation will only be satisfied if the activity carried out have achieved the results involved in that activity. Intrinsic motivation is a strong urge or will that comes within a person (Gunarsa S.D. 2008, p. 50). The stronger the intrinsic motivation a person has, the more likely he or she shows their strong behaviour to achieve goals. Therefore, this is the duty of the teachers to motivate their students that can be delivered to students who are appointed as team captains; a captain must be able to motivate his team in a better way.

The development of better motor skills is correlated with higher physical activity in children (Cliff, Okely, Smith, and McKeen, 2009). In order to engage children and stay active behaviour for a longer period of time, the teachers need to adjust physical activity to a situation such as a game. The teachers need to realize that children should be provided games to develop their motor skills. In addition, manipulative objects and skills having a large impact on physical activity can be achieved as well (Carl 2015).

Therefore, physical teachers in schools must strengthen learning object manipulation skills in their curriculums (Barnett, et al. 2016). The content of the game in physical education learning and competitive environment is well-known to be beneficial for students who experience success (victory) and understand their physical competence to be the same or better than other teammates. Meanwhile, the perceived competences and intrinsic motivation will be decreased for students who experience unplanned results, compared to other teammates (defeat) (Vallerand, Gauvin, & Halliwell, 1986); Therefore, one of the key factors in children who dislike physical education learning and have a lower level of competence during physical education learning is compulsory participation in competitiveness, which is generally disliked by children (Reinboth, Michael; Duda, Joan; Ntoumanis, 2004).

In addition, there are several ways in which the optimal level of challenge can be obtained. The goals must be clearly defined; However, the possibility of achieving them must be uncertain. It is a must for the game to perform a progressive difficulty level, multiple objectives, and ambiguity of information in ensuring uncertain results. The feedbacks of a performance and scoring allow individuals to track their progress towards desired goals. The end of the goal must be mean-

ingful to the individual. To associate the activities with valuable personal competences, to instill the activities in receiving interesting instruction, or to engage in competitive or cooperative motivation can provide the meaningful goals. Furthermore, the competences in junior high school students had been found low during competitive activities in the classroom, especially, during invasion games in Physical Education (i.e. football, basketball, handball, and others). To transform the invasion into a modified game form in simplified rules (eg, no dribbling allowed and smaller groups) can contribute to beliefs of self-efficacy.

Temporarily, the result of this observations is that, generally, leadership skill learning applied in schools, especially in junior high schools in Physical Education learning, is considered low. One of the factors that may be the cause is that sports participation is unable to guarantee the development of life skills, especially leadership. A good learning process is the active participation of students. Therefore, the main objective of this research is to determine the application of small-sided games (SSG) to the development of leadership and motivation of students in physical education learning from a group of junior high school students (aged 12-14 years).

METHODS

Design

The method used in this research was a quasi experiment. In the world of education, especially in Indonesia, the use of quasi-experiments was highly recommended considering the conditions of research objects which often do not allow random assignments. This is due to the already completed formation of groups, such as a group of students in one class. These groups are also frequently very limited in number.

In this situation, the rules in true experiment could not be fulfilled completely, because the control of variables related to the research subject could not be fully carried out. The use of quasi experimental was recommended to implement in research related to improving the quality of learning (Fraenkel, et al, 2013). In this study, there were two teaching treatments as the focus of research. The two teaching methods were applied to two different groups using Small-Side Games training models. The two groups were divided into some smaller groups to make it easier for researchers to apply the learning process. The experimental group was given a limited exploratory teaching treatment in which students was more dominant in the learning than the teacher. The control group was given a commando teaching style in which the teacher was more dominant in learning than the students. The two groups of subjects were used/ determined, then were measured or observed twice. The first measurement served as a pretest and the second one as a posttest

Participant

The study population was 48 students of SMPN 1 Subang who joined the basketball extracurricular, consisting of 14 male and 9 female students of seventh grade, and 17 male and 8 female students of eighth grade. The population of this study were children aged 12-15 years, so that they were taken from the junior high school level, and used different educational treatments with an average number of students in one school was 35 people. Random cluster sampling technique was employed in this study because the researcher chose the samples randomly from the population and did not create a new class (group) for sample selection. Thus, the sample selection used the already available groups, and two group classes were selected (Freankel et. al 2013, pp. 95).

Instrument

In the pretest and posttest, all participants filled out a motivation questionnaire on sports and physical activity and were measured using the Intrinsic Motivation Inventory (IMI), and the student leadership was measured using a leadership questionnaire. Next, the participants completed one of the Small Sided Games (SSG) game modification. The last was measured using the Intrinsic Motivation Inventory (IMI) and student leadership was measured by using a leadership questionnaire.

RESULT

To find out the difference in the increase of student motivation and leadership through the implementation of the Small-Side Games model in learning, a Non-

Parametric test was conducted because one of the data groups was not normally distributed. The results of the mean difference test of the student motivation of the experimental and control groups are shown in Table 1.

Table 1. Mean Difference Test Results of Motivation (Non-Parametric)

Test Statistics[a]	
	Result
Mann-Whitney U	116.500
Wilcoxon W	326.500
Z	-2.260
Asymp. Sig. (2-tailed)	.024

Based on table 1, the sig. value of motivation was 0.024 <0.05, so H_0 was rejected. This means that there was a difference in the development of Motivation through the implementation of the Small-Side Games model.

The results of the mean difference test of student leadership of the experimental and the control groups are presented in Table 2.

Table 1. Mean Difference Test Results of Motivation (Non-Parametric)

Test Statistics[a]	
	Result
Mann-Whitney U	130.000
Wilcoxon W	340.000
Z	-1.898
Asymp. Sig. (2-tailed)	.038

Based on the table 2, the sig. value of leadership was 0,038 < 0,05, then was rejected. This means that there was a difference in leadership development through the conduct of the Small-Side Games model.

DISCUSSION

The findings showed that the experimental group was superior in developing motivation than the control group; the two research groups in question were the experimental group (the group that was given treatment with motivational intervention) and the control group (the group that was not given motivational intervention). This was evidenced by the calculation in each group, where the experimental group was superior in developing or increasing motivation than the control group. With the results of 68.7% for the experimental group and 43.6% for the control group, it could be concluded that although the experimental group and the control group appeared to have similarities when the Small-Side Games treatment model applied, there was a significant difference since the experimental group had the greater the effect in increasing the students' motivation.

In SSG players experience situation similar to the one they encountered in actual competition (Owen et al., 2004). In 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, only a few research projects had examined how the intensity of SSG can be manipulated to alter the training or learning stimulus (Hill-Haas et al., 2009). Research focused on evaluating the physiological, tactical, and technical responses of athletes when factors such as number of players, field size, rules of play, and coach drive had been modified in SSG. Studies seemed to confirm that by changing these factors we can manipulate the overall physiological and perceptual workload.

Other studies aimed to predict motivation among students; when an activity were considered positive, the individuals were expected to increase their motivation. The findings reinforced the importance of creating a classroom atmosphere that emphasized someone's efforts to participate in learning for self-improvement, better motivation, and increasing persistence. People who were motivated to maximize the effort in participating in challenging activities optimally as well as their interest and enjoyment could be maintained (Emilio & Maureen, 2000). The time available for physical education classes was very short, so the use of SSG allowed the program to focus on the play. It was to maximaze the available time on meaningful activities and building their own learning processes. In addition, higher physiological demands were registered in SSG with a smaller number of players and targets. The situation in a Physical Education (PE) classroom where students had the opportunity to work together and help each other to learn (when taught new skills) made them closer and more connected to their fellow students.

From all the studies conducted, it can be concluded that by changing factors such as number of players,

field size, presence/absence of goalkeepers and goals, coach impulses and rules, coaches could manipulate the effects of SSG on players. However, due to the lack of consistency in the design of SSG, player fitness, age, ability, level of coach or teacher encouragement, and rules of play between studies, it was difficult to make accurate conclusions about the influence of each factor separately. Due to these limitations, SSG management required further investigation. The use of standardized conditions in SSG related studies may allow a better understanding of the role of individual factors and may help researchers to find better conclusions.

The findings of the research data show that the experimental group was superior in improving leadership than the control group, in which the two research groups in question were the experimental group (the group that was given leadership intervention treatment) and the control group (the group that was not given leadership intervention). This was also evidenced by the calculation in which the experimental group was superior in developing or improving social behavior than the control group. With the results of 73.1% for the experimental group and 34.2% for the control group, it was concluded that although the experimental group and the control group appeared to have similarities when the Small-Side Games treatment model applied, there was a significant difference since the experimental group had the greater the effect in increasing the student leadership.

The results of studies suggest that by modifying the number of players and the duration of specific training exercises, coaches can change the physiological and technical stimulation of the players who become captains. The appointment to be a captain resulted in gaining their experience, possibly due to a larger area per player ratio. This findings are in accordance with the research developed by (Gould, Carson, Fifer, Lauer, & Benham, 2009), and confirms the study results of (Voelker, Gould, & Crawford, 2010) that bringin up leadership in young people is difficult when adults dominate their environment. In fact, the researcher experienced that it was perhaps the only major deterrent to leadership development in sport and physical education.

SSG enabled students to develop their technical, tactical, social and mental decision-making skills in a highly positive environment (Owen et al., 2004). Consequently, the use of SSG in physical education classroom planning justified, as it included physical requirements similar to those found in games and focused on learning through play. In addition, this type of game-focused teaching provided high level of student motivation and involvement in assignments. The constraint manipulation used in this study did not affect technical and tactical performance indicators in basketball and futsal. By using one target only, the game tended to focus more on certain activities, allowed the players to feel more into the game and gained more experience, as well as developed the intensity of the game.

Modification in appointing a student to be the captain of the team affected the player activity differently from the first to the last half, suggesting that the determination of these rules must be appropriately planned by the coach or teacher according to the training or learning objectives. The teacher had to determine which component (technical and / or physical) they wanted to like, and give students the opportunity to gain experience, therefore, they had to be able to determine the number of ball contacts allowed and in turn appoint the team captain. Finally, it appeared that games played in SSG form were best for gathering high intensity action simultaneously, as well as gaining more experience and for dealing with players with technical situations similar to those encountered during the match. Based on the existing findings, it is hoped that understanding of the training or teaching load could be improved and also could provide the trainer or teacher with valuable information for the use of the training.

The learning process in schools is very important when, in the process, there is intention to change students for the better. The implementation of interesting and meaningful learning process will certainly be able to shape the character of students to be better in the future. In the training or learning process, there are several methods and models to carry out in order to achieve success, one of which is the Small-Sided Games training model. This study revealed the importance of an interesting and easy to conduct learning process that also provides more experience for students to develop their leadership. The researcher applied the Small-Sided Games training model since it was impactful in making the learning process more interesting and more valuable

in terms of motivation and leadership.

CONCLUSION

In accordance with the research results, it can be concluded that; first, there is the effect of applying the intentionally structured leadership with non-intentionally structured leadership Small-Side Games training models on the development of student leadership. Second, there is the effect of the intentionally structured motivation Small-Side Games with non-intentionally structured motivation Small-Side Games training models on the development of student motivation.

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