# Improving Physical Activity of Students with Low Fundamental Movement Skills Using Sport Education Model

Agi Ginanjar[1] and Adang Suherman[2]
[1]*Department of Physical Education, Health and Recreation, Sekolah Tinggi Keguran dan Ilmu Pendidikan Nahdlatul Ulama Indramayu, Jl. Raya Kaplongan No. 28, Indramayu, Indonesia*
[2]*Faculty of Sports and Health Education, Universitas Pendidikan Indonesia, Jl. Dr. Setiabudhi No. 229, Bandung, Indonesia*
*agiginanjar@stkipnu.ac.id*

Keywords: Sport Education Model, Fundamental Movement Skill, Physical Activity.

Abstract: The purpose of this experimental study was to find out whether students with low fundamental movement skill who learned through a sport education model had more physical activities than those who learned through a traditional learning method. To this end, a randomized posttest-only control group design was employed. The samples were 80 eight grade students at SMP Nahdlatul Ulama Darul Ma'arif Kaplongan Indramayu. The instruments included Jakkola and Washington's (2012) fundamental movement skill test to measure their fundamental movement skill and a digital tool called iCardio to measure their physical activities. The data were analyzed using one-way ANOVA. The results revealed that there was a probability that students with low fundamental movement skill could improve their physical activities using a sport education model.



## 1 INTRODUCTION

Nowadays, physical activity has been a concern of physical education in Indonesia. 48.2% of Indonesia's population aged above 10 are less engaged in physical activity (Kemenkes RI, 2011, p. 16). Low physical activity can cause noncommunicable diseases (NCD), such as cardiovascular disease, cancer, diabetes and metabolic disorder-caused disease (Kemenkes RI, 2011, p. i). Childhood and adolescence are two very critical periods to be engaged in physical activity in anticipation of the adulthood (Friedman, et al., 2008; Telama, et al., 2005; Trudeau, Laurencelle, & Shephard, 2004; Jaakkola & Washington, 2012). At secondary school level, physical activity begins to decline (Telama & Yang, 2000; Nader, Bradley, & Houts, 2008; Jaakkola & Washington, 2012).

Fundamental movement skills (FMS) are contributing factors to the assessment of teenage physical activity (McKenzie, 2007). Furthermore, there is a long displacement effect between FMS and physical activity (Barnett, et al., 2008). FMS include locomotor skills, balance, and manipulation (Gallahue & Cleland-Donnelly, 2007; Jaakkola & Washington, 2012). FMS mastery affects sports skills (O'Keeffe, Harrison, & Smyth, 2007). The higher a student's FMS, the faster he acquires movement skills (Stodden, et al., 2008).

Sport Education Model (SEM) is an instructional model to provide students with the most appropriate sporting experience in terms of pedagogy and physical education development (Siedentop, 1994). SEM provides students with all the necessary aspects to facilitate matches such as contract in a team, match rules, scoring, referees, etc. Siedentop (1994, p. 4) states, students who receives SEM instruction will become literate, enthusiastic and competent sportspeople. According to Siedentop (1994, p. 9), SEM has the following characteristics: seasons, affiliation, formal competition, culminating event, keeping records, festivity. Perlman (2011) divides SEM procedure in basketball into three phases: skill/tactical development, inter/intra team games with practices, and postseason.

Various literatures have revealed the success of SEM in the process of physical education. Students who receive SEM instruction have their self-motivation developed and successful learning achievements (Wallhead & Ntoumanis, 2004). Using



Ginanjar, A. and Suherman, A.
Improving Physical Activity of Students with Low Fundamental Movement Skills Using Sport Education Model.
In *Proceedings of the 2nd International Conference on Sports Science, Health and Physical Education (ICSSHPE 2017) - Volume 1*, pages 280-282
ISBN: 978-989-758-317-9

SEM, students are highly motivated and enjoy the learning process (Perlman, 2011). The less motivated students can increase their physical activity (Perlman, 2012).

Based on the above explanation, the low FMS can be overcome by SEM. The literature also shows that low motivation can be improved by SEM. Therefore, it is necessary to study how SEM can increase students' physical activity without reducing the instructional objectives of physical education (Perlman, 2012). Furthermore, it has been questioned if education programs do not involve much physical activity to improving health (McKenzie, et al., 2000; 2006). Thus, the objective of this study is to answer if students with low FMS who learn through SEM have more physical activity than those who learn through traditional instructional model.

## 2 METHODS

This study used a randomized posttest-only control group experimental design. The experimental class received the SEM instruction, and the control class received traditional instructional model. The study was conducted in 15 meetings, consisting of three phases: (1) skill/tactical development, (2) inter/intra team games with practices, and (3) postseason (Perlman, 2011). The samples were 80 eighth graders at SMP Nahdlatul Ulama Darul Ma'arif, Kaplongan, Indramayu. 40 were assigned to the experimental class, and the other 40 to the control class. The FMS was measured using Jaakkola and Washington's (2012) FMS test. The physical activity test was measured using digital iCardio. The data were analyzed using one-way ANOVA.

## 3 RESULTS AND DISCUSSION

The physical education curriculum of junior high school in Indonesia emphasizes students' sports motion skills, rather than physical activity (Permendikbud, 2013). The school mandated sport-based physical education programme adopted a skill-drill-game approach (SDG) and exposed students to an array of invasion games (e.g. soccer and basket-ball) (Perlman, 2012). The curriculum should allocate 50% of learning process for physical activity. Key aspects of a well-designed curriculum should (a) be based on national or state curricula, syllabus or standard(s) and (b) be designed to provide students with 50% of class time spent in moderate-to-vigorous physical activity (MVPA) (USDHHS, 2010; Perlman, 2012).

The decline in physical activity and pubertal issue are also not sufficiently paid attention to (Telama & Yang, 2000; Nader, Bradley, & Houts, 2008; Jaakkola & Washington, 2012). In addition, low FMS also is yet to be more paid attention to despite the fact that it requires good FMS to achieve great motion skills because FMS are contributing factors to increase of physical activity. Mastery of fundamental movement skills (FMS) is a potentially significant factor in the rate of adolescents' physical activity participation (Mckenzie, 2007; Jaakkola & Washington, 2012). So, it raises an issue that the physical education program does not engage students to increase physical activity. Some physical education programmes are not engaging students in adequate levels of health-enhancing physical activity (McKenzie, et al., 2000, 2006).

The literature shows that it can be overcome using SEM because physical activity is a contributing factor to students' FMS. The less motivated students can increase their physical activity (Perlman, 2012). Students prefer SEM to traditional model in their physical activity (Andre & Hastie, 2017). SEM provides students with 50% of classtime for moderate to high physical activity (Stockly, 2008).

Hastie and Torst's (2002) study suggests that SEM did not improve physical activity level. However, their study has sampling limitation. The samples were relatively small and homogeneous. Perlman (2012) conducted a study on SEM by dividing it into three phases: (1) skill/tactical development, (2) inter/intra team games with practices, and (3) postseason. His samples were 32 people, consisting of 10 males and 22 females.

The result revealed the experimental class who learned through SEM showed a difference in physical activity duration and in the increase from moderate to high physical activity from those who learned through Skill-Drill-Game (SDG) method. The data were analyzed using ANOVA.

The result of calculation of physical activity duration at skill/tactical development phase showed a value of $0.541>0.050$, which means there is no significant improvement. At inter/intra team games with practices phase, the result also did not show any improvement in physical activity duration since it was obtained the value of $0.117>0.050$. At postseason phase, there was a significant improvement. The result of data analysis obtained the value of $0.000<0.050$.

Similarly, in terms of physical activity increase from moderate to high at skill/tactical development

phase, the result did not show significant improvement. The result of data analysis obtained the value of 0.605>0.050. At inter/intra team games with practices phase, the result also did not show significance increase in physical activity from moderate to high since it was obtained the value of 0.261>0.050. At postseason phase, there was a significant increase in physical activity. The result of data analysis obtained the value of 0.000<0.050.

Therefore, it is perceived that low FMS in physical activity can be overcome by SEM since FMS are parts of physical activity increase. In addition, various literatures also have revealed the success of SEM in the process of physical education. Thus, there is a possibility to increase physical activity of students with low FMS using SEM.

## 4 CONCLUSION

Fundamental Movement Skills contribute to the increase of students' physical activity. Sport Education Model, as supported by various literatures, can increase students' physical activity. It can be concluded that there is a chance for SEM to increase physical activity of students with low Fundamental Movement Skills.

## REFERENCES


Andre, M. H., Hastie, P., 2017. Sport education in a higher education physical activity course. *European Journal of Physical Education and Sport Science*.

Barnett, L.M., Van Beurden, E., Morgan, P.J., Beard, J.R, 2008. Perceived sports competence mediates the relationship between childhood motor proficiency and adolescent physical activity and fitness. *A longitudinal assessment. International Journal of Behavioral Nutrition and Physical Activity*.

Friedman, H.S., Martin, L.R., Tucker, J.S., Criqui, M.H., Kern, M.L., Reynolds, C.A., 2008. Stability of physical activity across the lifespan. *Journal of Health Psychology*.

Gallahue, D.L., Cleland-Donnelly, F., 2007. Developmental physical education for all children. Champaign: Human Kinetics.

Hastie, P.A., Trost, S. G., 2002. Student physical activity levels during a season of sport education. *Pediatric Exercise Science*.

Jaakkola, T., Washington, T., 2012. The relationship between fundamental movement skills and self-reported physical activity during Finnish junior high school. *Journal Physical Education and Sport Pedagogy*.

Kemenkes RI, 2011. *Strategi Nasional Penerapan Pola Konsumsi Makanan dan Aktivitas Fisik Untuk Mencegah Penyakit Tidak Menular*, Kemenkes RI. Jakarta.

McKenzie, T.L., Marshall, S.J., Sallis, J.F., Conway, T.L., 2000. Student activity levels, lesson context, an teacher behavior during middle school physical education. *Research Quarterly for Exercise and Sport*.

McKenzie, T.L., Catellier, D.J., Conway T., et al., 2006. Girls' activity levels and lesson contexts in middle school PE: TAAG baseline. *Medicine and Science in Sports and Exercises*.

McKenzie, T. L., 2007. The preparation of physical educators: A public health perspective. *National Association for Kinesiology and Physical Education in Higher Education*.

O'Keeffe, S.L., Harrison, A.J., Smyth, P.J., 2007. Transfer or specificity? An applied investigation into the relationship between fundamental overarm throwing and related sport skills. *Physical Education and Sport Pedagogy*.

Perlman, D., 2011. *Examination* of Self-Determination Within the Sport Education Model. Asia-Pacific *Journal of Health, Sport, Physical Education*.

Perlman, D., 2012. The influence of the Sport Education Model on amotivated students' in-class physical activity. *Journal European Physical Education Review*.

Siedentop, D., 1994. *Sport education: quality PE through positive sport experiences*. Champaign: Human Kinetics.

Stockly, J.S, 2008. Thesis. *Sport education and the traditional until approach a comparasion of student activity levels.* Sonoma: M S Program Kinesiology Sonoma State University.

Stodden, D.F., Goodway, J.D., Langendofer, S.J., Roberton, M.A., Rudisill, M.E., Garcia, C., Garcia, L.E., 2008. A developmental perspective on the role of motor skill competence in physical activity: An emergent relationship. *National Association for Kinesiology and Physical Education in Higher Education*.

Telama, R., Yang, X., Viikari, J., Valimaki, I., Wanne, O., and Raitakari, O., 2005. Physical activity from childhood to adulthood: A 21-year tracking study. *American Journal of Preventive Medicine*.

Trudeau, F., Laurencelle, L., and Shephard, R.J., 2004. Tracking of physical activity from childhood to adulthood. *Medicine and Science in Sports and Exercise*.

USDHHS, 2010. Strategies to Improve the Quality of Physical Education. Washington, DC: US Department of Health and Human Services.

Wallhead, T.L., Ntoumanis, N., 2004. Effects of a sport education intervention on students' motivational responses in physical education. *Journal of Teaching in Physical Education*.