

# Development of Fundamental Movement Skills through the Low-Organized Games Based Program

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**Abstract:** This study aims to obtain conclusions about the use of The Low-Organized Games Based Program (LOGP) on the development of Fundamental Movement Skill (FMS) for Elementary School students in low grade 7-9 years old. The method in this research uses qualitative approach through action research method. Participants consisted of 30 students aged 7 to 9 years in SDN 1 Paniis, District Pasawahan, Kuningan Regency, two physical education teachers and one administrator. The instrument used is a teacher performance appraisal format (TPA) to measure teacher performance in planning and implementing learning, student attitude observation format (SAOF) to measure student attitudes in learning activities, and movement performance criteria from Test of Gross Motor Development-edition 2 (TGMD-2) to measure FMS competencies consisting of locomotors subtests and object control subtests. The research hypothesis presented on the basis of both theoretical and empirical views that the use of LOGP can develop elements of movement skills in the three FMS components for 7-9 year olds, including locomotors skills, stability, and manipulative skills.

## 1 INTRODUCTION

Fundamental Movement Skills (FMS) is an important competence in the Physical Education program. FMS is described as a general motor activity with a specific pattern that can be observed (Education Department of Victoria, 1996) involving different body parts such as legs, arms, trunk and head comprising locomotors, stability, and manipulative skills (Sport New Zealand, 2012; Education Department of Western Australia, 2013; Cohen, 2014). The development of these skills should begin in the early years of elementary school through the teaching of physical education at schools (Education Department of Victoria, 1996). FMS is considered to be the basic building unit of more specialized and complex skills used in sports and recreational games and various other physical activities (Hand, 2012; Cohen, 2014; Burrows, 2014) for pre-school children, adolescents and adults (Cliff, 2012).

Several studies have shown the fact that many children between the ages of 6-9 years are delayed in developing their motor skills (Bakhtiar, 2014, Hashim and Baharom, 2014; Mukherjee, 2017). This condition can be caused by the teachers' lack of comprehensively comprehending the meaning and

role of physical education in their basic principles and philosophy as well as the inappropriate competence of physical education teachers in various aspects related to the performance of their tasks, especially at the elementary level (Mahendra, 2014). This has an impact on the provision of physical education programs that are not appropriate to achieve the goals of physical education itself. In order to cope with these conditions, appropriate movement programs at schools and activities that encourage and support FMS learning are required (Fahimi, 2013, Jaakola, 2013) through many opportunities to practice, ideally in a stimulating and challenging environment, but supporting, as well as by receiving quality instruction and feedback (Hand, 2012).

One of the proposed activities for developing FMS is through the provision of simple low-organized games based programs for children at schools. The low-organized games based program (LOGP) is a physical education program through simple game activities (including traditional games) designed to be guided by the physical education curriculum in schools to achieve the goals of physical education. The learning strategy in LOGP uses mastery learning developed by Bloom (1968) and the learning stage refers to Sport New Zealand (2012),

including discovery, developing, and consolidating stages aimed at the development of FMS components including locomotors, stability, and manipulative.

Mahendra (2005) explained that in simple games, such as folk games, children's games, traditional games, and games of *dolanan*, contained various benefits for the development of psychomotor, cognitive, moral and affective domains. Burrows (2014) suggests that after school programs with simple game focus may support improving FMS capability for children aged 7-9 years. In addition, the traditional game is an appropriate program for the development of basic movement skills of children aged 7-9 years (Akbari, 2009) and can be efficient in improving motor skills of school age children (Gipit, 2017). Based on the theoretical and empirical facts, the purpose of this study is to obtain conclusions about the use of The Low-Organized Games Based Program on the development of Fundamental Movement Skills for Elementary School students in low grade 7-9 years.

## 2 METHODS

### 2.1 Participants

This research involved students at one elementary school in rural area in Kuningan District of academic year 2017/2018 that were between 7-9 years old, as many as 30 children, consisted of 14 male students and 16 female students, physical education teacher as many as 2 persons as observers, as well as one general teacher as an administrator. Ethically, this research has been through the approval of institutions, principals, teachers, school committee councils, and parents.

### 2.2 Procedures

This research is designed using approach referred to Kemmis and McTaggart (2005) in the form of action research with the type of "School-wide research focuses on issues common to all" (Ferrance, 2000) involving spiral of cycle reflection in the form of "planning, acting and observing, reflecting, re-planning, acting and observing again, reflecting again, and so on" (Kemmis and McTaggart, 2005, pp. 276). Acting is a simple game divided into 3 (three) learning stages, including (1) beginning / discovery stage, (2) developing stage, and (3) consolidating stage (Sport New Zealand, 2012; Education Department of Western Australia, 2013). Each learning stage contains units of motion skills material

of the FMS component, i.e. (1) locomotors, (2) stability, and (3) manipulative. Observing is carried out in the learning process at each stage, after a single stage is completed (formative assessment) and after the whole stage is executed (summative assessment). Before action begins, referring to mastery learning strategy from Bloom (1968) pre-assessment is done first. After the implementation of observation, then data processing is performed referring to the assessment guide for Elementary School, Ministry of Education and Culture, data validation, and data analysis from the observation.

### 2.3 Instrument

Teacher Performance Assessment is conducted on one cycle using the Teachers Performance Assessment (PKG) format, covering (1) planning learning, and (2) implementing learning.

Observation of Student Attitude is performed when the process of each stage of learning uses instrument format of Student Attitudes Observation in Activities through observation techniques, including observation aspects that refer to the assessment guide for elementary school from Direktorat Pembinaan Sekolah Dasar (2016), namely: (a) honesty, (b) discipline, (c) responsibilities, and (d) confidence.

FMS Assessment is conducted in pre-assessment, formative assessment and summative assessment using performance criteria from Test of Gross Motor Development-Edition 2 (TGMD-2) from Ulrich (2000) which has been widely used for FMS development (Cohen, 2014; Burrows, 2014, Hashim and Baharom, 2014; Yang, 2015; Mukherjee, 2017) with the test-retest reliability for the locomotors sub test stable at  $r = 0.88$  and for the control object  $r = 0.93$  (Ulrich in Burrows, 2014). TGMD-2 includes (1) locomotors subtest, consisting of run, gallop, hop, leap, horizontal jump and slide; (2) manipulative subtest, consisting of striking a stationary, stationary dribble, catch, kick, overhand throw and underhand roll.

## 3 RESULTS AND DISCUSSION

The development of FMS for students in elementary schools in particular, is done through physical education at schools with the support of educational resources. Education Department of Western Australia (2002) explains that "The FMS professional development promotes change in educational practice by providing theory, demonstration, practice,

feedback, and support. Improving teacher judgment about fundamental movement skills is vital ". In addition, several studies (Hand and Martin, 2003; Goodway, 2003; Kirk and Rhodes, 2011; Logan, 2011; Breytenbach, 2013; Pless and Carlssons, 2010) demonstrates that efforts for fundamental movement skills development are accomplished through intervention in the teaching of physical education, especially in elementary schools. This physical education teaching intervention may allow some children to develop acquired skills very quickly if instructional interventions are in a form of structurally designed learning experiences for children, explicit information on how to perform skills, multiple opportunities to practice skills, appropriate feedback, and meaningful and challenging experience, but not frustrating (Education Department of Western Australia, 2013). Given the strategies and stages of learning and teaching materials that meet the learning effectiveness requirements, hypothesis can be stated that the use of LOGP can develop elements of motion skills in the three components of FMS for children aged 7-9 years, including locomotors skills, stability, and manipulative.

The research hypothesis as presented shows that the development of movement skills toward skilled movement performance involves an understanding of the concept of movement, the perception of the task of movement to be performed, and the motor ability to perform the movement through meaningful and challenging experiences. This experience can have an effect on the behavior change of learners. This statement is consistent with the opinion of Payne and Isaacs (2012) that "full understanding of motor development requires knowledge of the cognitive, affective, and physical domains because they so profoundly affect movement behavior". Therefore, in order to have an effect on the development of motor skills and motor development changes along with cognitive and affective development through FMS learning, appropriate learning strategies are required in physical education. Bloom (1968) has devised One Strategy for Mastery Learning, comprising (1) outlining some necessary prerequisites; (2) developing the necessary implementation procedures; and (3) evaluating some strategy outcomes. The implication of Bloom's One Strategy for Mastery Learning (1968) towards LOGP's learning strategy for improving FMS is as follows.

Precondition of learning in LOGP to improve FMS is elaborated through identifying activities and formulating specifications of FMS teaching objectives in physical education in elementary

schools implied in one of the competencies to be achieved by learners referring to Peraturan Menteri Pendidikan dan Kebudayaan Republik Indonesia Nomor 21 (2016) which is knowing the concept and practicing basic movement patterns, variations and combinations of basic movement patterns; Demonstrate sportsmanship, cooperation, tolerance, discipline, and positive attitude. The content or teaching materials of LOGP are physical activities of basic motor skills, variations and combinations of basic movement patterns in the form of simple games with or without tools including traditional games. The evaluation procedures prepared include an instrument of concept comprehension assessment, motor skills and attitude observation. Evaluation is done using summative evaluation at the beginning and after all material units are given as well as formative evaluations in the teaching and learning process. To check FMS performance for learners, the LOGP uses qualitative steps that focus on form or movement techniques Hand (2012) which can provide more useful information on FMS skills for young people (Cliff, 2009).

The operating procedures developed at LOGP to improve FMS skills for learners are as follows.

First, dividing the teaching materials of FMS into 3 (three) categories, namely (1) locomotors, (2) stability, and (3) manipulative. These three categories are further broken down into units of teaching material in the material group (1) fundamental movement skill patterns, (2) variations in fundamental movement patterns, and (3) the combination of fundamental movement patterns.

Second, conducting pre-assessment of students' understanding and mastery level of the subject matter unit in the form of elements of motor skills from the three categories of FMS subject matter.

Third, presenting the learning materials units from the three groups of materials gradually using learning stages for FMS development referring to Sport New Zealand (2012), covering (1) discovery, (2) developing, and (3) consolidating. At the discovery stage, learners try to concentrate on learning locomotors, stability, and manipulative fundamental patterns. The purpose of this stage is to expect learners to explore and discover by themselves the elements involved in performing the skills of these three fundamental movement patterns. At the developing stage, learners are presented in the learning material units of fundamental movement pattern variations in order to make the skills more efficient and refined in the performance of students' movement skills through repetition and practice in various contexts. At the consolidating stage, learners

are presented the learning material unit of the fundamental movement pattern combination of applying conceptual understanding and mastery of movement skills in various ways and combining other movements in the game and more complex activities. After one stage is completed, the formative evaluation is then conducted to measure the level of understanding of the concept and mastery of the fundamental movement pattern skills learned.

Fourth, reviewing the results of formative assessment of each stage and making corrections of the movement concept understanding level achievement and mastery of the fundamental movement as a prerequisite to follow the series of learning in the next stage.

Fifth, conducting Sumatif evaluation after all material units are presented through all learning stages to measure mastery of the FMS lesson material that has been presented. Sixth, following up the Sumatif evaluation results in the form of enrichment activities for students who are considered of not understanding the concept of movement and fully master the pattern of fundamental movements that have been studied.

The description presented illustrates that the implications of the mastery learning strategy in LOGP in physical education along with the learning stages used provide the space for learners to concentrate on the finesse of movement and to find the sequence of movement patterns to be mastered (discovery phase). At the developing phase, learners are given experience through repetition and practice in a variety of contexts to improve the efficiency and smoothness of motion in the performance of their motor skills. In the consolidation phase, program participants are directed to apply movement skills in various ways and incorporate other movements in more complex games.

In addition to the above description, the use of playing activities in the game as an activity underlying LOGP as a form of effort to achieve the program objectives (program outcome), is called the development of FMS learners. This effort is certainly in harmony with the conception of learning based games Shaffer in Plass (2015) which states that games based learning mostly emphasize that it is a type of game play with defined learning outcome. On the basis of this description, it can be stated that LOGP is a physical education program through a variety of physical activities of playing games that are done in stages to improve the mastery of understanding the concept and mastery of FMS skills for learners.

In general, Schmidt and Lee (2014) explain that there are three essential elements for most skills,

including (1) Perceiving the relevant environmental features; (2) Deciding what to do and where and when to do it to achieve the goal; (3) Producing organized muscular activity to generate movements that achieve the goal ". This statement certainly indicates that the three essential elements include perception, cognition, and muscle contraction. Perception as an important element in movement skills is in line with Robinson's (2010) research which shows that there is a positive relationship between self-perception with the development of fundamental movement skills. On the other hand, Edwards (2010) states that there are three components that affect the performance of movement skills, namely (1) the person, the task, and the environment,

In line with the statement, the research results by Delaš (2008) which suggests that gender differences determine the differences in basic motor skills, especially in the performance of jumping and walking success. In addition, the study results of Goodway (2003), Ghaly (2010), and Fahimi (2013) support the idea that the practice and motor skill instruction in motor programs is a factor determining motor skills and the development of fundamental movement skills. Goodway (2014) indicates that many of the poorest children in Indonesia start the year of early childhood with delayed development of motor skills due to difficulty in gaining access to safe places to play.

## 4 CONCLUSIONS

The results of the theoretical and empirical studies presented in this study support the hypothesis that the use of simple game-based programs can help learners develop the elements of movement skills in their fundamental skill component of movement, especially at elementary school level. However, other elements that influence the outcomes of skill learning, such as perception, cognition, and muscle contraction in learners should also be considered. In addition, the internal condition of learners, the task of movement given, and the condition of the learning environment play an important role in the efforts of learners to reach the level of development of understanding the concept and mastery of fundamental movement skills along with social skills (affective) that accompany the learning outcomes.

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