

Learning Activity to Develop Physical Literacy in Kindergarten

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Abstract—the study aims at creating a series of learning activities for kindergarten in an effort to stimulate the development of physical literacy. The research was conducted using a research and development method involving three experts, 125 children, and ten teachers using questionnaires, observation sheets, interviews, and assessment rubric. Results of the expert validation were 83 (Very good), small scale test were 80 (excellent), large scale experiments were 85 (excellent) and the average value of posttest was 72, being greater than the average pretest which was 66. Results of research showed that the model of learning activities that were developed were feasible and effective to increase the ability of physical literacy of kindergartens because learning activities were developed in accordance to the basic concept of learning model and able to encourage children to move confidently, to have motivation, knowledge in motion, and motion skills.

Keywords—*Learning Activity, Physical Literacy, Kindergarten*

I. INTRODUCTION

Physical literacy is the foundation in the formation of behaviors. It is an understanding of active lifestyle and can be done in various ways to achieve different goals in a wide and varied context (1), to increase motivation, confidence, motion, knowledge and vision (2), the ability to understand, communicate, apply knowledge, and learn the movement in different ways and demonstrate the flexibility of motion confidently, comprehensively, and creatively (3) promote the achievement of children's literacy as a whole (4). In the context of the development of kindergartens, physical literacy is used to study the various aspects that enable children to learn, apply healthy lifestyles with an active lifestyle, and have motion skills (3). Physical literacy in this study focused on encouraging children to move with confidence, to have motivation, knowledge in motion, and have motion skills.

The importance of developing physical literacy in kindergarten is due to the fact that, activity of motion is fundamental for the child because childhood is the period of being active in doing motion and movement activity and were generally formed in childhood ages of 2-5 years. It is an important period in the formation of basic, social and congenial motion skills [5], maintaining the children's health, particularly in the prevention of obesity [6], fostering cognitive development and academic performance [7, 8], developing psychomotor skills and providing psychological benefits through the development of appropriate social

responsibility and behavior [9]. Kindergarten who are physically literate have the knowledge, skills, and attitudes to lead healthy lifestyles for themselves, and also assist others in acquiring these skills as well [10].

At this time, there has been an increase of as much as 30% of children who spend more than two hours a day watching television or playing with gadgets [11]. As a result, children are at risk of developing non-communicable diseases (NCDs) such as obesity, heart attack, hypertension, cancer and diabetes (WHO, 2010), social, emotional and cognitive developmental delays [12], low-motion and less active skills [6]. The problems that occur in the context of motion learning in kindergarten are the lack of understanding of the teachers on the movement activity. The teacher also has difficulty in developing the appropriate form of physical activity model to be used in learning activities [13] because it is not well-planned and there are limitations of models and examples [14]. Based on these problems, there is need to create a series of learning activities that aim to stimulate the development of physical literacy of kindergartens. The purpose of this research is to find the learning activity model that can be used to develop physical literacy kindergarten.

II. METHOD

R & D research method selected was used in this research [10]. In this research and development, the research stage was modified into two main stages that were adjusted to the purpose of the research. The main stages in research and development used were a) a preliminary stage that consisted of literature review, the most recent relevant research studies, and field studies. The literature review was conducted on the learning curriculum, instructional materials, and traditional game types that are consistent with the developmental stages and characteristics of kindergarten and b) development stage consisting of prototype, validation, and testing (small scope, broad scope, and operational scope). This study involved 3 experts, 125 kindergartens, and 10 teachers as participants. Instrument of data collection used were questionnaire, observation sheet, interview, and rubric of assessment and test result analyzed using descriptive analysis approach.

III. RESULT

In the preliminary stage will be found, (a) a description of the children's characteristics, (b) the description of the learning curriculum, the implementation of learning, (c) the model of games for kindergarten, and (d) two aspects that are needed in development learning activity model. A

kindergarten is a child who is around four to six years old or is in the early child stage [15, 16]. The stage is the stage of formation of fundamental motion [17], cognitive ability is still in the pre-operational stage and it is the stage where children present their world with words, symbols, and drawings. The ability to think using symbols is accompanied by the ability to grow an understanding of space, cause and effect relationships, identity, categorization, and numbers (18), and begin to learn to manage and control stimuli and have the initiative to seek new experiences actively, and carry out their activities through their sensory abilities. Physical literacy is a child's behavior in order to have motivation in doing motion, moving with poise, and confidence in a wide variety, and have the ability to identify and articulate the influence of their own movement performance [2].

Based on the Regulation of the Minister of Education and Culture of the Republic of Indonesia Number 137 of 2014, concerning National Standards for Early Childhood Education, education in kindergarten aims at stimulating education and optimizing the level of achievement of child development. The kindergarten curriculum refers to the National Standards for Early Childhood Education which aims to encourage the development of children's potential to have readiness to pursue further education. Characteristics of the Curriculum for Early Childhood Education are optimizing the development, using thematic learning with a scientific approach, using authentic assessment in monitoring child development, and empowering the role of parents in the learning process.

Kindergarten learning is done in a fun way to encourage children to have fundamental movement skills and basic exercise movements, moving with confidence and skill in various situations so that kindergartens have confidence in their abilities, apply a healthy lifestyle with an active lifestyle, and have movement skills.

The development of the game model for kindergarten must pay attention to several principles, among them is that it must be arranged in a simple way so that it is easier for kindergartens to practice and learn the game. All the games arranged must be able to improve and develop the child's fundamental movements, in directing to understanding the game and making decisions during the game. The games between the child and the teacher must reach and develop the goals of the game, and if the teacher teaches games for all children, the teacher must relate to the learning principles [19].

Two aspects that are needed in development learning activity model is a model design and the implementation of learning activity model that cover the concept of the model, objectives, approach and learning method, implementation procedure, and result learning assessment. Furthermore, the development was conducted by doing the prototype modeling of learning activities in the form of manuals. Learning activities developed consisted of eight activities namely a. lempar kaleng, b. engklek, c. lempar telur, d. sumpitan, e. lompat tali, f. estafet kelereng, and g. bakiak.

Based on the result of questionnaires on the validity of the experts, it was found that the learning activity model developed in substance content was 87 (very good), the material was 88 (very good), the writing format was 71 (good), the grammar was 71 (good), & overall obtained score was 83 (Excellent) as contained in Table 1. Based on the results on the validity of the experts, the model developed was feasible to be tested.

TABLE I. DATA ON EXPERT EVALUATION RESULTS IN MODEL VALIDATION STAGE

Rated aspect	Maximum Score	Acquisition Scores	Value In Hundred Scale	Category
Content	90	78	87	Very good
Material	105	92	88	Very good
Writing Format	60	43	71	Good
Grammar	45	35	71	Good
Total Score	300	248	83	Very good

Small-scale trials were conducted to obtain information on the level of ease of teachers in translating the manual book and implementing and facilitating children in learning activities developed on a small scale. Based on the results of the teachers' assessments as outlined in Table 2, the results showed that the content was 80 (very good), material was 88 (very good), implementation was 70 (good), and overall obtained score was 80 (good).

TABLE II. THE RESULTS OF THE TEACHER'S ASSESSMENT ON A LIMITED-SCALE TRIAL OF THE LEARNING ACTIVITY MODEL

Rated Aspect	Max Score	Acquisition Scores	Value In Hundred Scale	Category
Content	60	48	80	Very good
Material	105	92	88	Very good
Implementation	70	49	70	Good
Total Score	235	189	80	Very good

The result of interview showed the content aspect was in line with the learning stages and the contents of the material in accordance with the learning curriculum and characteristics of kindergarten. In addition, it was also viewed that the aspect of implementation instructions were understandable, the equipments used were quite appropriate, easy, safe, interesting, and beneficial for children and teachers.

A large-scale trial had the same goal as a small scale. The results showed that the content was 82 (very good), material was 88 (very good), implementation was 83 (very good), and overall obtained score was 85 (very good).

TABLE III. THE RESULTS OF THE TEACHER'S ASSESSMENT ON A LARGE-SCALE TRIAL OF THE LEARNING ACTIVITY MODEL

Rated Aspect	Max Score	Acquisition Scores	Value In Hundred Scale	Category
Content	60	49	82	Very good
Material	105	92	88	Very good
Implementation	70	58	83	Good
Total Score	235	199	85	Very good

The interview result showed that the content referred to the learning stages and the material was in accordance with the learning curriculum and characteristics of kindergarten. In addition, it was also viewed that the aspect of implementation instructions was understandable, the equipment used is were quite appropriate, easy, safe, interesting, and beneficial for children and teachers

Operational trial aims to determine the effectiveness of learning activities developed in improving the literacy skills of kindergarten. The results of the operational trials in Table 2 showed that there has been an increase in the ability of physical literacy of kindergarten which the posttest average score was greater (72) than the average score of pretest (66).

TABLE IV. RECAPITULATION OF PHYSICAL LITERACY KINDERGARTEN ACHIEVEMENT

Learning Activity	Pretest Mean	Posttest Mean
Lempar Kaleng	64	68
Engklek	74	76
Lempar Telur	64	70
Sumpitan	67	73
Lompat Kelereng	66	68
Estafet Kelereng	62	75
Bakiak	67	73
Amount	464	503
Mean	66	72

IV. DISCUSSION

Research shows that the learning activity model developed was feasible to be used in an effort to improve the ability of physical literacy of kindergarten. This was based on the results of the validation of the experts in which the content was 87 (excellent), the material was 88 (very good), writing format was 71 (good), grammar was 71 (good), and total score was 83 (Very good). Furthermore, in the small-scale experimental stage of the learning activity model, the content aspect was 80 (very good), the material was 88 (very good), the implementation was 70 (good), and overall obtained score was 80 (excellent). The large-scale trials in the aspect of content was 82 (excellent), material was 88 (very good), implementation was 83 (excellent), and overall obtained score was 85 (very good).

In the operational test, there was an increase in physical literacy capability of kindergarten in which the average score of posttest was 72, greater than the average score of pretest which was 66. It showed the learning activity model developed was feasible and effective to be used in kindergarten to improve the skills literacy. This is because in the development of learning activities uses the approach of playing because the world of children is about playing [20]

and through the activities of playing, children can learn about the existing motion capabilities in the body [17]. In addition, the development of learning activities was developed based on the concept of learning model which must have a syntax, social system, principles of reaction, support system, instructional, and nurtural effect [21]. In addition, it can encourage children to move with confidence, have the motivation, knowledge in the motion, and have the skills of motion.

Comparing with previous research that has been done in development of integrative learning model based on physical activity for kindergarten [13], it resulted in an integrative learning model based on physical activity for kindergarten consisting of six forms of physical activity i.e. letters playing, picture guessing activity, name guessing activity, counting kangaroo activity, snake and ladder activity, and number adventuring activity. The learning model was effective for improving cognitive abilities (recognizing letters, concepts, and number symbols), motoric abilities (walking over the line, running on track, jumping on geometric shapes and crawling through the goal), and affective abilities (liveliness and pleasure in doing the activity) done with the approach of playing.

The research entitled model of games to develop fundamental movement of kindergarten students [22]. The result of developing the game model to develop the fundamental motion skills of the kindergarten students produced 10 game models that are playing bird game, the ball estafet game, kicking the ball game, the balloon tapping game, seeking and jumping game, arranging the names game, picture sticking game, forming the names game, frog counting game, and number adventuring game.

The downside of both studies is that the child was only encouraged to learn to know, do, and feel happy in doing the activities. It has not encouraged the children to have confidence and skill in various situations so that the children has confidence in his ability, apply a healthy lifestyle with an active lifestyle, and have motion skills. The study also focused only on the development of the fundamental movement of children, not yet covering the overall development of children in which the achievement of children literacy should be as a whole.

Based on the comparison of the results of the study, the development of learning activity model has advantages in improving physical literacy in kindergartens. The research focus covers all aspects of physical literacy development. However, the effectiveness test has only been done in two meetings so that the results of the research have not been optimal. In addition, the learning activities developed have not been fully integrated in the learning curriculum for kindergarten. Therefore, further analysis is needed to develop the activity model in the kindergarten curriculum.

V. CONCLUSION

Based on the results of the research, the model of learning activities were feasible and effective to be used in improving literacy skills of kindergartens. The improvements were experienced because learning activities could encourage the children to move with confidence, to have motivation,

knowledge in motion, and to have the skills of motion. The learning model developed was in accordance with the basic concepts of learning model

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