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2ND YOGYAKARTA INTERNATIONAL SEMINAR ON HEALTH, PHYSICAL EDUCATION, AND SPORT SCIENCE (2ND YISHPESS)

"Community Building and Development through Physical Education and Sports"

In conjunction with

1ST CONFERENCE ON INTERDISCIPLINARY APPROACH IN SPORTS (1ST CoIS)

"Integrating sports science intervention to optimize human performance"

FAKULTAS ILMU KEOLAHRAGAAN
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YISHPESS CoIS 2018

2nd Yogyakarta International Seminar on Health, Physical Education, and Sport Science (YISHPESS 2018)

1st Conference on Interdisciplinary Approach in Sports (CoIS 2018)

October 26-27, 2018,
Yogyakarta, Indonesia

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Preface

First of all, please allow us to extend our warmest greetings and welcome to you all to the 2nd Yogyakarta International Seminar on Health, Physical Education, and Sports Science (YISHPESS 2018). The conference is held in conjunction with The 1st Conference on Interdisciplinary Approach in Sports (CoIS) by the Faculty of Sport Sciences Universitas Negeri Yogyakarta in Yogyakarta, Indonesia on October 26-27, 2018.

The community building and development require integrated aspects in physical education and sports. These issues should be solved by researchers, lecturers, students and even practitioners to share and present their current research. The purposes of the conference are to share and present the reflection and research results related to Physical Education, Health, and Sports Science. In another issue, interdisciplinary approach has been defined as cross disciplines with an in-depth knowledge in one aspect working together to solve problems. Interdisciplinary approach in sports is very important to gain optional result of performance. In line with the first goal of this conference, it seeks better understanding both in theoretical and practical situation in every expert's aspects.

With the YISHPESS's conference theme: "Community Building and Development through Physical Education and Sports" and CoIS's theme: "Integrating Sports Science Intervention to Optimize Human Performance", approximately 236 papers have been submitted at this conference but only 169 of these have been accepted for the presentation after a blind peer review process. We do hope that this conferences proceeding can enrich our understanding of the role of physical education, sports, and health in maintaining community building and development as well as become a meeting point for academics, sport practitioners and sports professional to share ideas and knowledge for improving performance in sports.

We would like to thank to all parties who helped running this program. Hopefully, all the time and efforts we have spent for these two conferences may be beneficial and impactful for the future.

Yogyakarta, October 20, 2018
Organizing Committee

Committee Report

Dear Excellences, Rector of Universitas Negeri Yogyakarta, invited speakers, distinguished guests, and ladies and gentlemen.

It is our pleasure to welcome you to the 2nd Yogyakarta International Seminar on Health, Physical Education, and Sports Science (YISHPESS 2018) and the 1st Conference on Interdisciplinary Approach in Sports (CoIS) held by Faculty of Sport Sciences, Universitas Negeri Yogyakarta. We would like to welcome all invited speakers from overseas who come from different countries to share their knowledge and ideas at this international conference.

We organize two conferences with the theme: "Community Building and Development through Physical Education and Sports" and "Integrating Sports Science Intervention to Optimize Human Performance". These events reflect the role of sport science and physical education for developing human performance at this century.

Active participation from 11 invited speakers and 158 presenters reflect the important role of lecturers, students, researchers, and related background in sport and physical education. They will be organized into several panel and parallel sessions to facilitate main presentations and discussions. Moreover, all selected papers will be published in the international indexed proceeding.

We wish you enjoy these conferences and have a memorable time at Universitas Negeri Yogyakarta. Have a great day in Yogyakarta!

Organizing Committee

Table of Contents

Part 3. Sport Science

Advances in Social Science, Education and Humanities Research, volume 278
2nd Yogyakarta International Seminar on Health, Physical Education, and Sport Science (YISHPESS 2018)
1st Conference on Interdisciplinary Approach in Sports (CoIS 2018)

Elementary School Physical Education and Sport in Integrated Curriculum

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***Abstract*-this article explores the curriculum of Physical Education and Sport (PES) teachers in Indonesian. The 2013 Curriculum is entirely different from the 2006 curriculum. The basic difference is the are learning model and their achievements. In the 2013 curriculum, the teachers used integrated method at each grade level in the elementary school. The goal of this method was for the students to receive materials holistically. All the subjects were integrated into themes, sub-themes, and Learning from 1 to 6. The success of learning are affective, cognitive, and psychomotor skills. Physical Education and Sport (PES) is one of the subjects in the 2013 curriculum that is integrated. In the 2006 curriculum, the PES teachers prepared learning utilities independently, because the activities depended on Competency and Basic Competence. It was not integrated with another subject. In the 2013 curriculum, the PES teachers collaborated with the classroom teachers to prepare learning devices. This helped the learners to receive other subject matters. There are several ways to separate the materials from the theme. One of such ways is, that the need for collaboration helps to prepare the learning devices between the classroom teachers and the PES teachers. Another way is by encouraging the classroom teachers and PES teachers to attend conferences.**

Keywords—curriculum, physical education, integrated

I. INTRODUCTION

The world has undergone many changes. This changes has its own challenges. The impact of education on the world has given rise to a new paradigm on the demands of skills that people must master. The demands of skills to be mastered in the 21st century include student personalization, collaboration skills, communication skills, and information-gathering abilities. Productivity and creativity are core competencies and learning skills that aid in the development of student skills.

The Government of Indonesia has advised all citizens to get educated. This is contained in article 31 of the 1945 constitution. Education in Indonesia has been designed to fulfill all human resource skills. Educational curriculum in Indonesia keeps changing over time . The curriculum was established before independence and has been changed severally since then, 1947, 1952, 1964, 1968, 1975, 1984 (CBSA), 1994, 2004 (KBK), 2006 (KTSP), and 2013 (KTSP development). the curriculum in Indonesia is the same in other countries, the national education standard (SNP) was developed in other to guarantee quality education. Some of the reasons for the development of the Curriculum in 2013 are as follows: (1) Changes in the learning process and the assessment process requires additional hours of study, (2) The tendency of many countries to add more hours to their lesson periods, (3) Comparison with other countries indicates that the lessons learned in Indonesia is relatively short compared to other countries. In the 2013 curriculum, thematic learning was used to make all subjects into one theme. The recommended approaches are the scientific approach, Project base learning, problem base learning, and Inquiry. The scientific approach consists of, the observing stages (for identifying or finding problems), formulating problems, proposing or formulating hypotheses, collecting data by various techniques, analyzing data, drawing conclusions and communicating concepts, laws or principles that are "discovered. Problem base learning is defined as the beginning of dealing with the reality of life and society [7]. Based on the above opinion, the learning problem starts in learning the problems that actually occurs in the environment.

Physical education sports and health (PES) is one of the subjects taught in school. As one of the subjects, PES is part of the educational components on content standards and is aimed at supporting the national education objectives. At school, the allocation of lessons is 4 hours per week. it is assumed that 2 hours is used for field practices , 2 hours for theory or 3 hours for field practices and 1 hour for theory. . However, based on an interview dated January 23, 2018, most PES teachers use the lesson period for field practices and the theory is taught after every field practices. This is certainly not in accordance with what should be in the curriculum. The learning process that is carried out during the field practices also applies a scientific approach. However, no scientific approach has been identified that matches the character of PES. Meanwhile, based on interviews with some PES teachers and supervisors, PES is seen as a less important lesson. This certainly causes some problems that must be reflected upon by PES teachers. Based on the above background, the problems that arises are: 1) finding out if the purpose of PES is to develop affective, cognitive, and psychomotor span? What is the main emphasis of the domain and why ?; 2) identifying the curriculum model used in K13 PES SD ?; 3) to what extent has the PES teacher's gone in their preparation in implementing K13? This essence of the paper is to examine the position of PES in the 2013 curriculum and its implementation.

II. IMPLEMENTATION OF AN INTEGRATED CURRICULUM IN 2013

The curriculum appraisal focuses on character-planting for basic education. According to Robin Forgaty the curriculum model consist of ten integrated learning models, namely: cellular, connected, nested, sequenced, shared, webbed, threaded, integrated, immersed, and networked. But, all ten models was not implemented in the 2013 curriculum. The webbed and integrated model is the model adopted in learning.

the webbed model is a model that uses a thematic approach. It is characterized by the development of the curriculum using the theme approach and the teacher prepares the theme, as illustrated below is:

Fig. 1. The development of Curriculum

This model shows that PES can be integrated with the subjects incorporated in the theme. This model is usually used in primary schools. The second model is an interdisciplinary approach. In this model, the teacher tries to integrate some of the ideas or standards of competence into some of the subjects. An illustration of this model can be seen below.

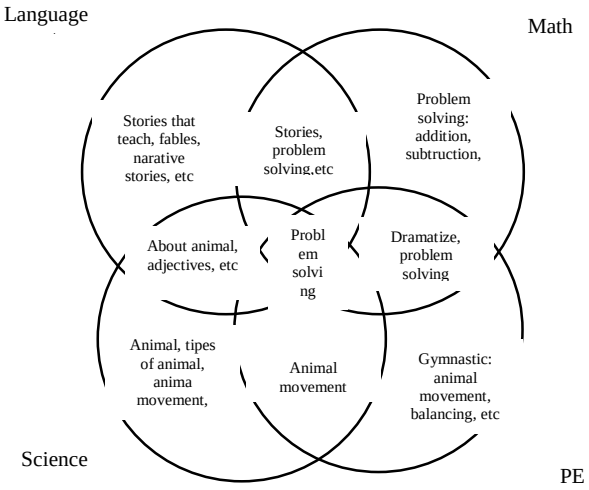

Fig. 2. The PES integrated models

Based on the picture of the integrated model above, PES can be integrated with other subjects. The application of this model is more in line with the middle-class. Permendikbud number 81a 2013 attachment iv describes the scientific approach in 5 stages: a) Observe; b) Ask; c) Collect information; d) Associate; and e) Communicate. The five main stages are classified under various learning activities as listed in the table below:

TABLE I. FIVE MAIN STAGE OF SCIENTIFIC APPROACH

Learning Steps	Learning Activities	Competencies Developed
Observe	Reading, Listening, Caring, Looking (without or with the tools)	Training sincerity, accuracy, look for informations
Asking	Asking questions about the informations that isn't understood from anything observed or questions to get more informations about anything which has been observed (started by factual question till hypothetis questions)	Develop creativities, curiosity, ability to formulate questions to form critical thinking which needed for smart live dan study throughout life
Collect Informations/experiments	- Do eksperiments - Read other sources beside text books - Observe the objects/ case/ - activities - interview with interviewees	Develop accuracy attitude, honest, polite, respect with other opinion from someone else, communications ability, apply ability about collect informations many ways has been learned, develop learning habit and learning throughout life.
Associate	- Process information has been collected from the result of activities/experiments or the result of observe activities and activities of information's collect. - Information's process has been collected has character to add breadth and depth till process information which have character to look for solutions from many sources that have other opinions till with contradict.	Develop honest attitude, accuracy, and discipline; obey the rules, hard work, ability to apply the procedure and ability to think inductively and deductively in concluding.
Communicate	Delivering the result of observations, conclusion based on the result of analysis by oral, written or other media	Develop honest attitude, accuracy, and tolerance, ability to think systematically, brief, clear, and develop ability to speak well and right when tell the opinions.

III. PES INSTRUCTIONAL MODELS IN INTEGRATED CURRICULA

Physical education is an element of educational curriculum that is basically concerned with physical activities , designed and structured systematically, to stimulate growth and development, improve ability and skills , intelligence and character formation, instill positive values and attitudes in individuals in order to achieve the objectives of the education

[1]. Physical education as an education content that uses a comprehensive but physically active approach that involves teaching social, cognitive, and physical skills, and achieving other goals through movement [6]. NASPE 1986 explains that a physically educated individual: 1. performs a variety of physical activities; 2. is physically fit; 3. participates regularly in physical activities; 4. knows the implications and benefits of physical activities and 5. The values of physical activities and its contribution to a healthy lifestyle [4]. Based on the above definitions, PES can be defined as an educational content that uses a physically activate approach to teaches social, cognitive, and physical skills and achievement of goals through motion. PES lessons involves all kinds of physical activities, physical fitness, the applications, benefits and values of physical activities and its contributions to a healthy lifestyle. The benefits of PES are not only related to the psychomotor domain, they are also related to other aspects. This is confirmed in the research results that there is a small but significant relationship between academic achievement in the field of mathematics and reading, and this is influenced by physical activity for about 70-300 minutes per week [2]. Cardiorespiratory and weight loss fitness is associated with academic achievement [8]. The physical activity is essential for the brain and learning barriers [3]. There is a positive relationship between physical activity and academic performance, especially in terms of concentration, memory and behavior in the classroom [9]. Based on the above opinion, physical activities in PES has a role in other spheres. Many models can be used in physical education lessons, such as: 1). Direct Instruction; this is characterized by teacher-centered learning and the teachers directly provide materials to the learners. The teacher prepares all forms of play, desired goals, and coordinates learning activities [5]. In this model the teacher is the controller during the learning periods. The first priority in this model is psychomotor, the second priority is cognitive, and the third priority is affective; 2) Cooperative learning; is a learning model that is based on four main theories namely motivation, cognitive, social learning, and innate attitudes [5]. This model creates a situation in order to achieve group success; 3) Inquiry Teaching; is a learning model where students need to understand the process before they can express their knowledge about the physical activities [5]. The teacher first provides the answer and then tries to seek the opinions the students and then gives the students time to practice the answers; 4) Tactical Games is a learning model that attracts students to a game, teaches them to understand the game, and expects them to participate in the game with the knowledge they have acquired of the game [5]. Peer teaching is a learning model that involves the students teaching themselves, in other words students who have better understanding and ability are given the opportunity to help other students. This model can be used , if the teachers prepare some of the students as tutors before the activity starts . This model can only be practiced by high-class students, from the third grade to the sixth grade. The role of the teacher is providing assistances and encouragement (supporter), supervising tasks including all tasks related to the discipline of the child.. These tasks are concerned with improving the growth and development of the children.

IV. Discussion

The role of PES teachers in the implementation of the 2013 curriculum needs to be reinforced. The application of thematic learning model in elementary school requires the PES teachers to be creative. However, the limited socialization of the government on this curriculum has caused teachers to become confused in its application. It is understandable, because the lack of socialization from the government either in the form of training or mentorship , has caused most of the teachers to use the old curriculum for the learning process. As a result of lack of socialization and assistance, PES teachers should try to develop themselves through the activities of teacher KKG routine. During the introduction of learning tools, PES teachers should collaborate with the classroom teachers to map out themes for the specific subject pedagogy. The effect of the collaboration with the classroom teachers, facilitates the application of thematic learning that is currently being applied.

V. Conclusion

The 2013 curriculum suggests thematic learning for elementary school. This method is in accordance with the students whose mindsets are still holistic. The application of thematic learning should be used by PES teachers. PES teachers are also advised to collaborate with the classroom teachers in mapping out basic competencies. Therefore, the learning process of PES and other subjects are integrated. All these could be properly achieved if the existing forums are utilized.

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Intervention Model of Perceptual Motor Development in Preschool Children Movement Development

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***Abstract*—this study aims to improve preschool children movement development by producing an intervention model of perceptual motor development. Steps to be followed in this developmental research include: (1) Introduction study, (2) Planning, (3) Improving the first product, (4) The first trial, (5) Revision for arranging the main product, (6) The trial of the main field, (7) Revision of operational product, (8) The trial of operational product, (9) Revision of final product, and (10) The dissemination and the implementation of product. The research trial was conducted at three Kindergartens which consisted of students aged 4-6 years old. The small scale trial was done in 17 kindergarten students while the large scale trial was done in 42 Kindergarten students. The instrument of data collection of this research consisted of 3 instruments; covered games design, model factor and material inside. Data analysis technique consisted of quantitative descriptive data analysis technique and qualitative descriptive data analysis technique.The results show thirteen activities of perceptual motor intervention model to develop preschool children movement. The game model consists of (1) the game of agility, (2) the game of flexibility, (3) the game of balance, (4) the game of body awareness, (5) the game of spatial awareness, and (6) the game of temporal awareness, and (7) the game of coordination. The specification product from this experimental results can be used as a reference for teaching material in order to develop preschool children movement or a manual book. The book was appropriate with the curriculum and characteristic, and also effective and feasible to be applied as media for developing preschool children movement quality.**

Keywords*—intervention model, perceptual motor, preschool children

I. INTRODUCTION

As a human, movement is a distinctive feature of living creature. It shows the human capability to explore their environment indefinitely and also as a medium to overcome problems of life. This means that humans live by making movement. Movement is an integral part of humans. The essence of movement is reflected by the pattern following its growth and development. The growth and development of movement is concurrently giving opportunities to improve the functions of (a) intellectual functions, (b) percepetual sensomotoric functions, (c) emotional psychological functions, (d) socialization or social functions.

Movement development is a continuous change in motor behavior that occurs throughout the human life cycle and is affected by task demands, biological aspect and environment. Any movement, however simple is a result of complex interaction patterns of different parts and systems in the body that are controlled by brain. Basically, this growth is in line with the maturity of the children nerves and muscles system. However, the development of each child is not similar and depends on their process of maturity.

As mention above, every child has a different movement development and in some cases the difference is so big that it makes the parents worried. Therefore, the assessment of children's development needs to be understood by parents. It includes five aspects of functional development namely, gross movements; fine movement; observation; talk; and socialization. Limitations in one aspect can affect other aspects abilities.

Preschool is a golden age in the developmental range of an individual's movement. In this period, children experience a remarkable growth in terms of physical motor, emotional, cognitive and psychosocial abilities. The development takes place in a holistic process so, the provision of stimulation should take place in holistic activity. Here, stimulation is necessary because not all children have normal movement development. Based on the research done by Rachman and Anggita [1], it is known that there are approximately 30.19% of preschool children who were ranked below good in category for their gross motor skills, and 57.55% in case of fine motor skills were below good in the category, as shown in the following table 1.

TABLE I. FREQUENCY DISTRIBUTION OF GROSS MOTOR SKILLS OF PRESCHOOL CHILDREN

Range	Category	Frequency	
		Absolute	%
≤ 63	Very Bad	0	0.00%
64-73	Bad	2	1.89%
74-83	Moderate	30	28.30%
84-93	Good	55	51.89%
> 83	Very Good	19	17.92%
Total		106	100

TABLE II. FREQUENCY DISTRIBUTION OF FINE MOTOR SKILLS OF PRESCHOOL CHILDREN

Range	Category	Frequency	
		Absolute	%
≤ 40	Very Bad	2	1.89%
41 -51	Bad	6	5.66%
62 - 72	Moderate	53	50.00%
73-83	Good	38	35.85%
> 84	Very Good	7	6.60%
Total		106	100

The recommendation of the research results above is a further assessment on the development of preschool children by providing stimulation to assist them to achieve the progress based on the proper development stage. The provided stimulation is in the form of perceptual-motor interventions given to preschool children in physical activity in school to ensure the movement development is suitable with the developmental stage of preschool children.

Perceptual motor in the development of children movement encourage the children to explore the knowledge of their environment. It is then formulated into a concept which is expressed in the form of movement skills. A child who moves easily and shows skillful movement tends to have positive self-concept and high self-confidence. Cratty argues that children who can not control their movements well usually have low self-concept and often have difficulty to adjust either socially or emotionally [2]. Furthermore, Edwards[6] states that children who show difficulties in studying in school in the first grade to third grade also have problem in their perceptual motor development and it fundamentally affects their learning achievement. This claim is in line with previous opinions that motor perceptual ability influences cognitive function, i.e. (1) there is a direct effect and correlation between motor perceptual ability and academic achievement, (2) perceptual motor ability is based on readiness and academic performance. For example, a good synchronization between hands and eyes is a requirement for writing skills [3]. Siedentop, Herkowitz and Rink [4] suggest that motor perceptual development is closely related to the range of basic skills or the crucial abilities in building a strong foundation for high learning achievement. So, it can be assumed that any response that occurs due to interaction with the environment can produce a motor perception response. Some responses may be more complex than other responses but, essentially, perceptual motor ability is a behavior that is displayed by involving the ability to interpret all information (visual, kinesthetic, audio and touch) that enter the central nervous system.

Motor perception is the ability produced from interaction with the environment involving the process of movement and observation. Motor perception is a term used to associate between cognitive function and movement skills on children. The concept of motor perception refers to the retrieval of information which is obtained from the environment to produce motor behavior. The movement generated from the perception process depends on the information processing system that exists within the human being. The ability of motor perception can affect other abilities in human life, such as cognitive function, academic competence, social and emotional development, and self-concept. Motor perception, formed by the components of movement cover, (1) body understanding, (2) space understanding, (3) movement quality, (4) direction understanding (5) time structure understanding, and (6) connection with object beyond the body.

Similarly, in terms of children, motor intelligence is influenced by other aspects of development, especially the connection of physical and intellectual of children. The question that needs to be answered, i.e to what extent does perceptual motor interventions foster the children's movement? How is the intervention pattern? How is the intervention done to find out the developmental stage of children's movement?

The model of interventions for the development of preschool children's movement is based on: (1) the phenomenon of the children movement development which is not in accordance with the proper stage; (2) the curriculum has not guaranteed the effectiveness of teachers in preschool; (3) the teacher's lack experience, coaching and training on how to teach or transfer movement development materials for preschool children; (4) children feel bored when given learning activities in the classroom; (5) limited equipment that can be used as learning media; and (6) the model of movement developmental intervention that integrates motor perceptual activity in preschool children has not been developed yet. The framework of the game model of movement development interventions for preschool children can be seen in the figure below.

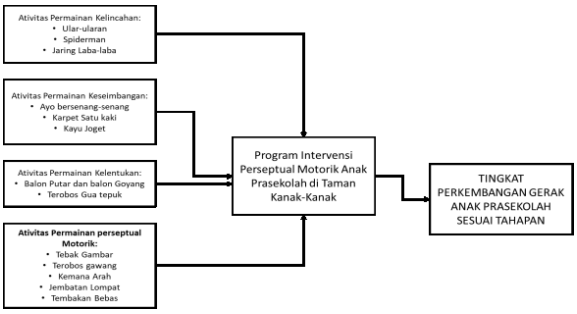

Fig. 1. Framework of Intervention Model of Movement Development for Preschools Students.

Based on the description above, the observation facts, and the interviews results, this research attempts to provide solutions to develop the movement of preschool children through the game activities that have been mentioned above. It is expected that through the game model which integrates perceptual motor activity the learning becomes more attractive, communicative, and stimulating the development of preschool children's movement. So, all experiences that children during preschool can be useful for their future.

II. METHODS

This study can be catagorrized as research and development (R & D) to produce educational product. R&D is a process to validate and develop educational products in the form of goods, procedures, and learning methods. Based on Gall & Borg [5], this kind of research uses the research findings to design new products or procedures that is then systematically tested in the field. It is followed by evaluation and refinement to meet certain criteria in case of its effectiveness and usefulness. The implementation of the development procedure in this study adapted the educational research and development stages by Gall & Borg [5]. The research scheme is presented in Figure 3.

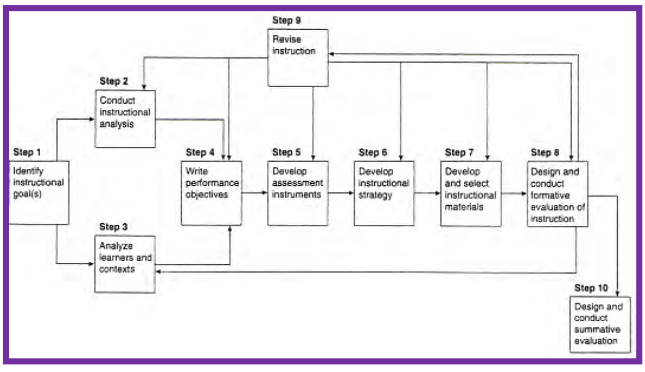

Fig. 2. The Scheme of the Research Procedure and Development [5]

The research and development stages of Gall & Borg [5] cover the following: (1) assessing the need to identify objectives; (2) conducting instructional analysis; (3) analyzing students and materials; (4) writing performance goals; (5) developing assessment instruments; (6) developing instructional strategies; (7) developing and selecting instructional materials; (8) designing and conducting formative evaluation of learning; (9) revising instructions; and (10) designing and conducting summative evaluation. By through those ten steps, an effective and well-implemented final product can be produced. From the ten steps of research and development above, this study only employed 9 stages, namely: (1) assessing the need to identify objectives; (2) conducting instructional analysis; (3) analyzing learners and materials, (4) writing performance goals, (5) developing assessment instruments; (6) develop instructional strategies; (7) developing and selecting instructional materials; (8) designing and conducting formative evaluation of learning; and (9) revising the instructions.

The trial was done to improve the game model by practicing it directly in the field. Product or game trial was done twice, in small and large-scale field. Prior to the trials stage, the game draft was assessed and validated by media experts, materials experts and practitioners to ensure its feasibility for field trial.

The role of the media expert was to direct the point of view and clarity of game instruction in video making. The role of the material expert was to observe the feasibility of the game draft with the facts and conditions in the field while the practitioner was also to observe the feasibility of the draft game prepared by researchers with the fact and circumstances in the field. After large-scale field trials were conducted, the output of this development study was to produce a guidebook and game tool for the development of perceptual-motor skills that was feasible and valid among preschool students.

Data analysis techniques was done uisng descriptive qualitative and quantitative analysis. Quantitative descriptive analysis was done to analyze the following data: (a) observer data / observations of material experts, media experts, and practitioners of the game model for the development of preseptual motor interventions of preschool children; (b) scale scores data from expert material, media experts, and practitioners for the model validation; (c) observation data of experts and practitioners on the effectiveness of the model (d) the data of the practitioner's observations on the children developmental achievement level including three learning domains (affective, psychomotor, and cognitive) during the learning process, the practitioner's assessment used the star icon (*) which was enclosed in the assessment rubric of appendix 3; and (e) data on practitioners' observation of the children response during the lesson. Qualitative descriptive analysis, meanwhile, was conducted on: (a) field note data and (b) data suggestion to improve the game model for development of perceptual motor intervention of preschool children before or after field trial.

The initial draft of the game model was feasible for small-scale field trials if the experts of media, material and the practitioners had validated and stated that all classification items on the scores scale are considered "appropriate" by

ticking (√) on the appropriate / very appropriate box. In this case there were four types of score, i.e. 1 for "not appropriate" category; 2 for "moderate"; 3 for "appropriate" and 4 if it is declared "very appropriate". If the experts or the practitioner classified the item as "not appropriate", it was followed by review for the product revision process. The model was considered feasible to be tested for small-scale rials and large-scale field trials if the quantitative scores reached the minimum feasibility standards. The calculation criteria of score conversion guidance or normative categorization was presented in the following table.

TABLE III. CALCULATION OF NORMATIVE CATEGORIZATION

Formula	Limitation	Catagory
$X < (\mu\text{-}1{,}0\sigma)$	$X < 20$	Low (Less Appropriate / Less Effective)
$(\mu\text{-}1{,}0\sigma) \leq X < (\mu\text{+}1{,}0\sigma)$	$20 \leq X < 30$	Moderate (Quite Appropriate)
$(\mu\text{+}1{,}0\sigma) \leq X$	$30 \leq X$	High (Appropriate /Effective)

III. RESULT

The model of movement development for preschool children consists of four activities, namely: (1) Balance Games; (2) Agility Game; (3) Flexibility Game and (4) Motor-Perceptual Game. Those four components were developed into 13 game activities. The game activities developed in this model are: (1) Fun Snake game that aims to train the students' agility by passing through the pipe. This game was done in groups and could also be contested. This game can be used to develop cooperation, and competitive attitude of students; (2) Fun Spider game aims to develop the students' concentration; (3) Me and You game that aims to understand the rules and disciplines matching with the game conditions; (4) Spiderweb game that aims to improve agility, flexibility, foot coordination, speed, balance, and reaction; (5) Basketball game that aims to develop an attitude of appreciating the superiority of others in the game; (6) Balance Bridge game that aims to train the students' balance. This game is done in groups and can also be used to train the sportsmanship, honesty, and students' thoroughness on movement learning; (7) Carpet Relay (estafet) game focuses to train the students balance. This game is done individually but can be in the form of competition and it also be used to train the students concentration in movement learning; (8) Wood Dance game emphasizes to train the students' balance. This game is done individually and can be used to train the students' concentration in movement learning; (9) Turned Balloon and Balloon game aims to train the formation of waist and back of students. It is done in groups and can be in the form of competition. This game can also be used to develop cooperation, and sportsmanship; (10) Clap Cave Through aims to train the waistline and back of students, and can be contested. This game can be used also to develop sportsmanship; (11) Picture Guessing is a game that aims to stimulate learners' minds about the students' perception in understanding various animals; (12) Fun Obstacle Run aims to develop awareness of space and direction as well as the children's competitive attitude; (13) Rope Climbing aims to develop coordination, balance, and quality of movement.

The assessment from media experts, material experts and practitioners showed that, games used to develop preschool children's movement can be catagorized "Good" if the sum of score for each game was in the interval of "$30 \leq X$". It means that the game model for the development of preschool children's movement was easily practiced by the teacher, the required equipment easily obtained and are safe and lovable. The game also attracted the children attention which was suitable with the characteristics of preschool students, and it can develop their perceptual motor skills.

The assessment from material experts and practitioners showed that the game was effective as a learning medium to develop preschool children's movement as in the case of (1) all thirteen game activities can be used as a learning medium to transfer cognitive, affective, and psychomotor domains in accordance with the curriculum and characteristics of preschoolers; and (2) reflection of results from practitioners or Kindergarten teachers on the level of children development achievement indicated that the children's movement development was good. This positive development can be seen from the frequency distribution of the children's development assessment by teachers towards 13 movement development activities i.e there was no child or 0% for the undeveloped category in every movement development.

The trail subject and all children subjects responded positively to the game of emotional social development. The students of B group kindergarten gave "Smile" to any game activity they did. Smile responses indicated that the children were happy to follow the teacher's lesson.

IV. DISCUSSION

This study resulted in the form of intervention model for movement development among preschool students including four parts, namely: (1) Agility Games Activities; (2) Balance Game Activities; (3) Flexibility Game Activities (4) Motor Perceptual Game Activities. Based on those four components, it was developed into 13 game activities that mostly use gross motor activity emphasizing on the development of bone, muscles and the ability to move and manipulate the environment. In accordance with the opinions of Bowlby and Ainsworth[9] that movement development also includes how the muscles of children work well or called muscle balance, children need balanced muscles to develop their muscle system so it can be used easily when standing, sitting, rolling, walking, running, swimming, and any other activities.

Movement development activity begins with agility activity (the ability to change the direction and position of the body quickly and precisely while moving without loss of

balance and awareness of the body position). The direct benefits of agility activities include (1) coordinating multiple movements (stimulation); (2) facilitating the skills acquisition that require speed of coordination: (3) facilitating the environment orientation. It is supported by Coleman[4] that if children want to have successful development in movement skills, they must receive many physical opportunities to explore their environment.

The next activity is about balance. This aspect is one of the required factors for children to perform effective and efficient movement. Good balance enables a person to perform effective and efficient activities or moves with minimal risk of fall. Balance is the ability to maintain the center of gravity, usually when the children are in erect position. In this study, the balance game activity is built to explore and to develop children balance through encouraging activity in accordance to Poppe [6]. He claims that the key to improving your child's balance, or any other portion of their fitness, is to keep the exercises / games fun. The more they enjoy themselves, the more they'll want to do.

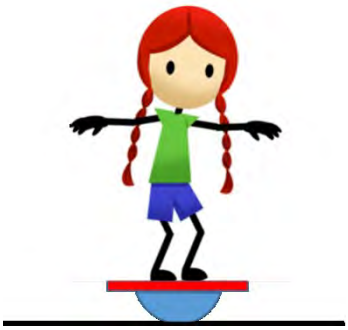

Fig. 3. Wood Dance Game

Flexibility activity aims to train the formation of the students' waist and back. This game is done in groups and can be in the form of competition with the scope of the activity as (1) stretching the joints and (2) relaxing muscles group. This formation is necessary for every child, to make them easy to learn various moves, to improve skills, ro reduce the risk of injury, and to optimize strength, speed and coordination. The game can be used to develop cooperation, and sportsmanship in which the ability of body to perform exercises with large or extensive amplitudes. In accordance with the opinion of Allen and Marotz[1] that flexibility refers to the range of motion around a joint it can be explained that the skeleton is the ability of the wrist or joint to perform the movement of all directions with the large and broad amplitude of the movement (movement range) based on the function of the moved joint. Other terms for flexibility are, elasticity and suppleness. Flexibility is one of the crucial elements of physical condition to improve movement skills, to prevent injury, to develop strength, speed, endurance, agility and coordination.

Perceptual motor activity was arranged in the form of post-game in which each learner must be able to think, to concentrate and to move according to the game series. Consecutively, the first post was picture guessing, the next was body and space awareness game, the third was balance, fourth was consciousness directions, and the fifth post was coordination and movement quality. Perceptual motor is the ability to interpret the stimulus received by the sense organs. According to Gibson, perceptual motor skill is the person ability in describing the stimulus or psychological objects such as ideas, events or specific situations caught by the five senses (taste, smell, feel, sight and hearing) separately or simultaneously to get a clear picture or response about the received stimuli as the basis of one's behavior. Gallahue[5 6] states that the quality of a person's movement development depends on perceptual motor. In this regard, in the giving of examples of the execution of the task of motion, the students' ability to perform the task depends on their ability to obtain information and interpret the meaning in the form of movement.

The movement development is strongly influenced by the perceptual motor skill that underlies every child's movement. The more mature development of the brain's nervous system that regulates the muscles to the development of movement competence or children motor abilities. This is in line with the view from Siedentop, Herkowitz and Rink [4] that, the development of perceptual motor is closely related to various basic skills or abilities that are believed to have important role to build a strong foundation of high learning achievement. It can be assumed that any response due to perceptual motor intervention can result in movement development response, in accordance with Magill [7] who suggests that some responses may be more complex than other responses, but essentially, perceptual motor behavior is represented by involving the ability to interpret all information (visual, kinesthetic, audio and touch) that enters the central nervous system.

The conclusion of this study is that the intervention towards the development of preschool movement is very important and can be done through the model of game activity involving perceptual motor skills. This model combines balance, flexibility and coordination that is presented in an interesting, creative, and competitive way.

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Instructional Model of Self-defense Lesson in Physical Education: A systematic Review

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***Abstract*—martial art (self-defense learning) is a unique discipline in physical education which requires a separate approach and instructional model in order to be beneficial to the student and serve the purpose of physical education. Hence, this study aims to analyze various research results related to the use of approaches and instructional models of self-defense lessons in the physical education program. About 80 articles published online from 40 local and 40 international journals were analyzed. In this study, the Interactive model (data collection, display, and conclusion/verification) from Miles and Huberman (1984) was used to analyze data. The study found many approaches and instructional models of martial arts related to education/pedagogy in physical education in Indonesia and many other countries. Internationally, there are three types of self-defense instructional models in physical education. They include the instructional models that emphasize culture, sports, and students' self-development aspects. Nationally, self-defense learning in physical education uses Mosston's teaching style, general and special instructional models which lay a strong emphasis on character building. The instructional model of self-defense is expected to meet the competencies from aspects of knowledge, attitudes, and skills.**

Keywords—martial arts, instructional, physical education

I. INTRODUCTION

Over the years, Physical education learning has undergone rapid development. Inventions and numerous studies were conducted to develop a more creative and attractive physical education learning which still serves the original purpose of physical education [1]. A paradigm shift in the education purpose was followed by the change in the purpose of physical education. This shifting phenomenon has apparently affected the development of the learning approach to physical education. Hence, the purpose and learning of physical education should be harmonious. Historically and philosophically, physical education has transformed in Indonesia and all over the world. Even up till this day, people still argue over the science of physical education itself. In some countries, physical education has become an excellent national program which is very beneficial to people. In Indonesian school curriculum, Physical education has formally been a part of it. However, people's mixed up understanding of physical education, sports, recreation, physical activities, and health makes physical education bias in the eyes of our communities.

Learning in physical education was developed from Sweden and Germany gymnastics systems. Both systems were extensively incorporated in many physical education programs across the world. However, since the systems were more teacher-centered, students were mainly followers of their teachers with a goal to master all materials and techniques. This existed primarily due to the fact that past physical education focused on gymnastics learning materials. As teaching materials transformed from gymnastics to sport-based, new teaching methods began to emerge in the early 1960s [2-3]. Since then, various new methods for teaching physical education arose and are currently known as teaching strategies. Some of them include task/station teaching, reflective teaching, partner teaching, team teaching, and inquiry-based teachin*g* [4].

Martial arts or self-defense learning is a major material in physical and sport education. Martial arts can be found across several Asian countries. Of all types of martial arts, *pencak silat*, originating from Indonesia, is one of the most popular types of sports in Southeast Asia. The Indonesian *pencak silat* has become a worldwide Google trending search in 18 countries. Additionally, the martial arts topic happens to be quite a fascinating topic across the world. In survey, the Indonesian martial art is the 25th most searched topic across 56 countries. Furthermore, the *Pencak silat* martial art has developed through many ways including schools. In schools, *pencak silat* is taught as recommended by the 2013 Indonesian national curriculum (K-13). In the curriculum, the methods of martial arts vary in learning. The 2013 Physical Education, Sport, and Health (PJOK) Curriculum has recommended the adoption of various methods, strategies, and models in the process learning *pencak silat* martial art. Hence, there is a vital need to investigate models

adopted in teaching martial arts as part of physical and sport education all across the world.

Findings of studies in Southeast Asia reports that the origin of martial arts is characteristically different and that three learning approaches exists namely; traditional, efficiency, and sports [5]. In addition, the data also indicates the practice of martial arts as part of physical education in schools across several European countries [5]. Hence, this study aims to investigate and analyze the adoption of martial art learning models in physical education which is studied in numerous scientific articles published in either national or international journals.

II. METHOD

A. Research Design

This study was performed applying a Meta-Analysis which simply means an analysis over analyses. As an effective research method, the meta-analysis assesses the results of previous research studies in a similar topic. The meta-analysis was first adopted in the research on health/medication. With time, the meta-analysis was adopted to study various problems/topics. Meta-analysis is a synthesis of topics from multiple research results. Synthesis is the basis for drawing conclusion on the topic being studied. A meta-analysis consists of several stages including; determining the problem or topic of the study, defining the research period, gathering research reports on the topic/problem being studied, reading research titles and abstracts, focusing on problems, methods, data analyses, and results, categorizing research results, comparing all results based on their categories, studying research methods and data analyses, and drawing conclusions [6].

B. Unit Analysis

The Analysis unit in this study consists of 80 articles published in national or international journals which presented ideas and results of the research on martial art learning models. The samples were selected using a purposive sampling technique where the topic or theme of the articles are related to learning martial arts in physical and sport education. Under such requirement, 41 articles comprising of 21 international articles and 20 national articles were considered eligible for the study.

C. Data Collection

The researchers themselves through a self-evaluation process validate the human Instrument as to what extent the researchers understand the qualitative method, theories, and insights into the field of study, as well as readiness and provision for the field study [7]. After setting the study focus, simple research instruments were developed in order to complete and compare data previously gathered. The Data was collected using the guided documentation technique and according to data source. Primary data is data collected firsthand from the original source. The Primary data in this study include opinions, ideas, and research results from journal articles about martial art learning models in physical and sport education. Data is valid if there is no difference between the report and the current study. To test the validity of data, this study conducted a credibility test (internal validity), transferability test (external validity), dependability test (reliability), and confirmability test (objectivity) [7].

D. Data Analysis

A qualitative data analysis technique using interactive model proposed by Miles and Huberman [8] was applied in this study. Additionally, Miles and Huberman recommended several activities for data analysis which includes; data collection, data display, and data conclusion drawing/verification. In research, data reduction is a process that involves selecting, focusing, conceptualizing and converting raw data in the field notes. In qualitative research, data is displayed in form of brief description, charts, relationship between categories, flowcharts, and many more [7]. Meanwhile, the conclusion proposed in a qualitative research is considered temporary and changes when stronger supporting evidences are absent from the subsequent stages.

III. RESULTS

A. Study of Martial Art Learning Model across the World

This research studied 21 journals written by martial arts researchers across the world. The journal documents in study originated from several international journals from 1990 to 2017. The United States of America began conducting numerous researches on martial art learning and was followed by many other countries including Belgium, China, Spain, Singapore, Mexico, England, Iran, Poland, Canada, and Latvia. Most researchers studied the practice of all types of martial arts, specifically Judo, Taekwondo, Wushu, Karate, and *Pencak Silat*. Some researchers also studied Mixed Martial Arts.

The Martial art learning and training in this study is related to various aspects of the participants such as the physical, psychological, and sociological aspects. Some variables were also related to the mastery of the techniques. In addition, some researchers also studied violence and risk factors for injury in martial arts. In the context of martial art learning practice, most researchers studied physical education in primary and secondary schools.

Findings from the articles published in several international journals suggest three types of model/approach to martial art learning. The first model laid emphasis on cultural aspects such as traditional, sociological, social-economical, anthropological, humanist, cultural, multicultural, authoethnographical, and academic approaches. The second model emphasizes sport aspects such as competitive, Leadership Education through Athletic Development (LEAD), N/M/M (Nomometic/ Monitoring/ Multidimensional) approach, and belt color system. Meanwhile, the third model emphasizes on the student development aspects such as comfort, control, price, self-actualization, and problem-based approaches.

B. Study of Martial Art Learning Model in Indonesia

From the 20 national journals being studied more updated findings were found from researches in the 2013-2018 period. Furthermore, because *pencak silat* obviously listed in the curriculum, researchers in the context of physical and sport education often study one type of martial arts. Although being

part of physical education, sport, and a health subject in Indonesia, martial arts is taught one or two times in a semester. This phenomenon attracts researchers to implement various models/approaches to martial art learning on different educational levels. According to the journal articles, researchers found the adoption of Mosston's teaching style, general learning models, and special learning model that emphasize the character building in martial art learning as part of physical and sport education. The adopted Mosston's styles include the Guided Discovery, exercises, inclusion, and reciprocal styles. The general learning models that are often studied include cooperative, direct institution, individual, group, and couple of models. Meanwhile, the special models/methods/approaches include playing, multimedia-based method, *pencak silat* gymnastics, and character building in *pencak silat.*

IV. Discussion

The learning of martial art emphasizing on cultural aspects views martial arts as an art of defending oneself from threats and dangers. This artwork has been developed into a function to improve one's physical condition, social connection, trading, partnership, and cultural acculturation. In today's education, martial arts emerged to balance the dominance of dualism mind/body [9]. Martial art was originally a type of ancient fighting which was later modified into sports [10].

From some of the articles, it was found that martial art learning focused on its sport-related aspect. For example, martial arts have been transformed into sports in form of competitions. Martial arts show unique body movements which work harmoniously with the development of mental and spiritual aspects such as characters, feelings, medication, and many more. As the characteristics of competitive martial arts demonstrate demands of sport, they require the development of specific training program [11]. For example, karate is considered as one of sports that promotes health, education, and rehabilitation management [12] as well as optimizes the quality of basic and specific motor skill performances needed by young athletes to participate in the competition [13]. In general, the findings suggest that martial art competitions are characterized by high aerobic and anaerobic responses [14].

Martial art learning is directed toward the development of various aspects of the lives of students. It involves not only physical but also psychological, social, and spiritual aspects. The possible effect of martial arts on psychological and social aspects is still an interesting research topic [15]. As a form of education, martial art has fulfilled both the psychological and physical needs and has used the body as a tool for enlightenment and wisdom in the spiritual aspects [16]. Martial art training also shows interaction and implication in the development of students' self-management [17]. Besides its health benefit, another benefit of martial arts includes its psychological balance and wellness that helps to reduce aggressiveness [10].

The development of martial art learning should better be pointed towards constructivist-based learning models. The Constructivist perspective is a learning theory lays emphasis on students' experiences, not merely on their cognitive knowledge [18]. For example, *pencak silat* martial art learning requires a learning model that is able to improve students' motoric skill and therefore, the game approach can increase the academic results of students [19]. Furthermore, a character-based learning model applied in *pencak silat* can be used as an approach to physical education in primary schools. The adoption of such model prevents physical education from being conventional and orientated toward martial arts and sport aspects only [20].

V. Conclusion

The international journal findings suggest three types of model or approach to self-defense learning used in physical and sport education, which include (1) culture-centered self-defense learning model/approach, (2) sport-centered self-defense learning model/approach, and (3) student-centered self-defense learning model/approach. In the meantime, the national journal findings demonstrate the adoption of Mosston teaching style, general learning models, and special learning model focusing on character building in self-defense learning as part of physical and sport education. Self-defense learning tries to help students to learn martial arts and to reach competences that cover knowledge, skill, and aspects of attitude. These aspects make this topic fascinating for study. The various aspects to study affect not only the method but also the material delivery model, which influences the object and variation type.

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