Inquiry Learning Models toward the Learning Result of Long Jump in Elementary School

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Abstract: The purpose of this study was to determine whether there is influence of inquiry learning models toward the learning result of long jump skill in the group using inquiry learning models and direct teaching models. The method used was experimental method. The design used in this study was randomize pretest-posttest control group design. The sampling technique used in this research was random sampling. 30 male and 30 female of elementary school students were selected. The instrument used was the mastery test motor skills long jump. The data collection techniques used were observation and photo documentation. While the data processing used statistical analysis, test of normality and homogeneity of the data, paired sample T-test and independent sample T-test were applied in analyzing the data. Results revealed the knowledge and understanding of students in practicing the long jump motion as a result of the inquiry learning models program. These findings are discussed with regard to the implications for physical education teachers. The teacher needs to review their approaches in preparing PE teachers for their work in schools.

1 INTRODUCTION

PE teachers' dependency on the standard facility and learning approaches on the basic technique presentation and the application of a learning model is still lack in accordance with the goal of successful learning, which the space for students to conduct physical activity, their freedom to explore ideas, and their opportunities to engage was directly reduced. Student-centered learning process (a scientific approach) will involve students to be more active in learning. Inquiry practitioners who give teachers the opportunity to engage with professional learning are both contextual and practicing relevantly. While professional learning, such as through inquiry, is relevant to learning outcomes to lessons (teachers and students), teachers make time to engage with professional learning which consequently can lead to improvements in teaching standards in physical education majors (Victoria, et.al, 2013). According to Capel and Whitehead (2013), the key role of PE is to foster the development of cognitive and physical competencies to provide individuals with the confidence and motivation to continue the physical activities outside of school and to sustain or gain a healthy lifestyle. Graham et.al (Suherman, 2009, p. 11) stated, "In the components of the development of motor skills and movement concepts, students are given many opportunities to do meaningful learning activities in accordance with the level of development that allows students to develop the concept. People who have competence in motor skill will likely have higher self-efficacy and shape positive outcome expectations for participation in physical activity engagement Lounsbery and Coker (2008). Through physical education, it is expected that students can gain a variety of experiences to express personal, fun, creative, innovative, skilful, enhancing, and nurturing physical fitness and understanding of human movement and developing cognitive, affective, and psychomotor aspects. Cognitive complexity is the ability to absorb and integrate information into schemas so that it may be transformed into skills. Individuals using cognitively complex perspectives ask questions, admit uncertainty, examine their own beliefs, listen carefully, suspend judgments, look for evidence, tolerate ambiguity, and adjust hypotheses when new information becomes available (Granello, 2010; Elder and Paul, 1994). Therefore it is necessary

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to know the belief that the model of learning affects the results of student learning in physical education. Bruce and Marsha (2006) quoted by Suherman (2009, p1.1) outlined that "the learning model is learning as an organizing environment that can lead students to interact and learn how to learn." Metzler (2000, p. 314) explains that:

"The inquiry model is strongly based in the cognitive domain, even for physical education instruction. Students are prompted to be by the teacher, solve the problem cognitively, and then fashion a movement answer. "

In inquiry-based learning, scientific processes and critical thinking skills are more efficiently used rather than memorizing concepts in physical education. When students participate in lessons by actually performing, living and responding to questions, they can relate the lessons to what is happening in nature. They replace their knowledge with evidence that has been explored during the investigation (Uzunosmanoglu, et.al, 2012).

2 INQUIRY MODELS

Siedentop and Tannnehill (in Metzler, 2000: p.372) said that inquiry is, "called as teaching through questions." Teaching through questions by Siedentop (1991: 231) refers to an instructional format tasks. "Metzler (2000: 372) says the inquiry is," If you do not have a problem. . (Think, Then Move).

Inquiry is also called guided discovery as Moston and Ashworth (2008: p.221) says that "guided discovery styles are logical and sequential design of questions that lead a person to discover a predetermined response." Chew-Leng Poon, Doris Tan, and Aik -Ling Tan (2009: p. 18) explains that, ". . . more student-centered activities where students interact more intensively with materials and with other students during investigations". While Padraig and McLoughlin (2009) as in "Ophea (2016: p. 6) says," Inquiry-based learning is a process where students are involved in their learning, formulating questions; investigate inquiry-based learning approach that combines physical-embodied learning with cognitive-knowledge learning. It is a student-centered active-learning approach focused on questioning, critical thinking and problem solving (Padraig and McLoughlin, 2009), and a method to stimulate the students to think, act and use all of their competencies - both cognitive and physical.

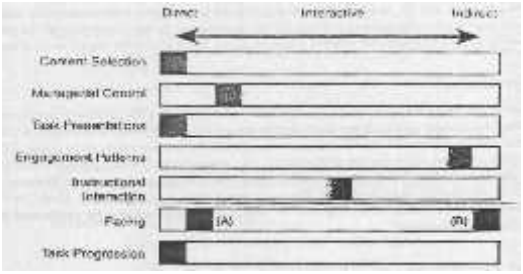

Figure 1: Direct profile of inquiry model.
(Joyce, B and Weil, M, 1980)

The direct profile for the inquiry learning model used in physical education is shown in Figure 1. Note that while such teaching is often called indirect learning, it then turns into direct learning in terms of the categories in the profile. As you can see, the teacher seeks to retain control of almost any instruction, but gives control to students a key category: the pattern of engagement. Once the teacher frames the problem and students begin to think and move, it is the student's desire to determine how they will engage when exploring the possible answers. While this is only one characteristic of the entire profile, it provides this model for working as a design, providing students with different types of knowledge development needs.

3 METHODS

The method used in this research is true experiment method which allows researchers to control all the outside variables that influence the course of the experiment. The design used in this research is Randomize Pretest-Postest Control Group Design. This design can be described as follows:

The Randomized Pretest-Posttest Control Group Design				
Treatment group	R	O	X	O
Control group	R	O	C	O

Figure 2: Randomize pretest-postest control group design table.
Source: Frankel and Wallen, 1993.

Remark:
O1 = the pretest value of the experimental group (before being treated).
O2 = Posttest value of the experimental group (after being treated).
X1 = Treatment of Inquiry Learning Model
O3 = the pretest value of the control group

O4 = the posttest value of the control group
X2 = Conventional Learning Model

3.1 Participants

Participants in this study were students in the fifth grade Primary School with the total number 120 students (N = 120). Local schools volunteered to participate in the study. Sixty students participated in the study (30 male and 30 female). Their ages ranged from 9-12 years old. Students were given the instruction in completing the study.

3.2 Population

The population in this study was the students of grade A and B at SDN 2 Kedungdawa, Cirebon with the total number of 72 students.

3.3 Sample

The writer took a random sampling from both classes. The writer assigned a sample of 60 students, 30 male students and 30 female students. From 60 students determined in the experimental class and control class, they were divided to experimental class with 30 students and control class with 30 students.

3.4 Procedure

This study was conducted for one month (12 meetings), which was held twice a week. In this study, there were two different groups, one experimental group (treated), and one control group (untreated). Within a period of 12 meetings, the experimental group will be treated using an inquiry model during the designated amount of study time.

3.4.1 Content Selection

The teacher determines all the contents in the inquiry model by deciding what to teach (exploration, solving, etc.) in each unit and lesson.

3.4.2 Managerial Control

Teachers determine specific managerial plans and classroom procedures such as how to start lessons, choose equipment, and create groups. The teacher allows the student to make their own decisions.

3.4.3 Assignment Presentation

The task presentation is used to frame the problem that the student will be asked to solve in the learning task. The teacher will have a progress on the progress plan for each class, and use the task presentation by providing students with enough information to clarify the task and its parameters.

3.4.4 Engagement Pattern

Students are given control in problem solving. because of higher theoretical tasks, students can explore the possibility of solving problems, working with other students, trying new things, changing equipment, or changing body position when trying to enter the phase "through thinking" about problems at the time.

3.4.5 Instruction Interaction

Is when students are busy looking for complex solution problems or have some steps. The nature of this interrogative interaction is not didactic. Teachers use questions, not direct statements.

3.4.6 Steps

The teacher determines the overall steps in the unit and each lesson. The teacher decides when new tasks (problems) will begin and how much time will be allocated to each (A). Students determine their pace in the time allocated for each task by deciding how long they should think about the solution, how many times practicing possible solutions, and by determining when they are done with the task-that is, when the student has the problem solved (B).

3.4.7 Task Development

The teacher determines the list and sequence of learning tasks for the unit and each lesson. This development should lead students to increasingly complex problems to solve, develop cognitive, psychomotor, and affective abilities.

3.5 Instrument

Measured components in the skill test of the long jump motion include the approach phase, repulsion phase, floating phase, and landing phase.

Table 1: Instruments basic motion skills in long jump (Kastrena, 2014).

Measured components	1	2	3	4	5	Total
Approach Technique						
Repulsion Technique						
Floating Technique						
Landing Technique						
TOTAL SCORE						

4 RESULTS

The data obtained in this study is the value of student skill in learning long jump using inquiry model and Direct Instruction learning model. Based on the data in Table 4.1, the skill score of long jump motion in the experimental group was in the average pretest score of 17.1. Furthermore, after posttest obtained the average score of 18.9. While the scores of basic long jump motion in the control group obtained a pretest average score of 17.03. Furthermore, after posttest obtained the average score of 17.20. It can be concluded that there is an increasing score difference in experiment and control group. In the experimental group the score increased higher than the control group.

Based on the data in Table 1 the value of significance on the increase of pretest-posttest score on long jump motion skills is 0.000 so Ho is rejected. Hence, it can be concluded that there is a significant influence of inquiry learning model on the skills of long jump motion.

Based on the data in Table 2 the value of significance on the increase of pretest-posttest score of long jump motion skills is 0.448 so Ho is accepted. Hence, it can be concluded that there is no significant effect of conventional learning model on basic long jump motion skills. Hypothesis testing is conducted with t-test analysis through SPSS using Independent Samples Test.

Table 2: Basic motion skill result.

Paired Sample Test					
Test	**Treatment**	**N**	**∑**	**Gain**	**Sig**
Pre	Inquiry	30	17,1	1.57	0.000
Post		30	18,7		
Pre	Direct Instruction	30	17,0	0.20	0.448
Post		30	17,2		
Independent Sample Test					
Inquiry		Direct		Sig. 2 tailed	0.000

Based on the data in Table 1 the value of significance on the long jump learning through inquiry model and direct instruction model obtained the sig p-value of 0.000. Based on the average results obtained by both learning models, the result of learning basic motion skill of long jump by using inquiry model is 18,7 and the basic motion skill of long jump by using Direct Instruction learning model equal to 17,2. Hence, it was obtained the significance difference of 0.000. It can be concluded that the results of learning basic motion skills long jump by using inquiry-learning model is more increased than the direct instruction model of learning and it can be concluded there is also a difference of results between the two models to the results of long jump motion skill.

5 DISCUSSION

5.1 Inquiry and Interaction

Motion skills in each student is very different, it is influenced by various factors including physical condition, playing environment and experience of motion. Singer in the study (a Schmidt and Wrisberg 2000, pp. 51) suggested, "Learning is reflected or inferred by relatively permanent change in performance or behavioural potential resulting from practice or past experience in the situation."

In the context of motion learning, given the various experiences of motion and cognitive understanding, students will receive information then students will process the information and stored in (long term memory) and ultimately produce a skilled movement. As Gibson (1966, 1979) points out (in Schmidt and Wrisberg 2000, p.56) that "contends that individuals pick up information directly through their sensory systems. “Individuals take information directly through their sensory systems so that as learning experiences increase, individuals become more adept at understanding and acting on the information. The statement (Schmidt and Wrisberg 2000, p.176) supports this notion, that "Buschner (1994, p. 43) stated:

"Combining the movement concepts with each motor skill produces a wide variety of learning experiences. The trick in teaching at the same level as the teachers, as the most teachers know, is to transfer the earlier learning to new concepts.

Combining the concept of motion with each motion skill produces a variety of learning experiences. Inquiry learning provides a learning experience through the process of investigation or observation conducted by students. The existence of a link between cognitive and psychomotor is derived

from the domain model of learning that improves the cognitive aspect.

Contrastive to the use of the direct instructional model, the lack of student movement experience because of problem solving that occurs in the learning process will make the students become less skilled. (Arianto, 2013, p. 66) said that "the use of conventional learning model, or teacher-centered learning, needs to be reduce. The motor skills are clearly influenced by one's motor development, (Østergaard, 2016, p. 12) asserts that "The function of motor development is the mastery of skills depicted in the ability to complete certain motion tasks. "Therefore, the quality of motion is seen from how far the child is able to display the motion assignment provided with a certain level of success. Therefore it can be seen from the results of this study shows that there are differences in results between the two models in learning long jump.

6 CONCLUSIONS

Learning models have strength and weakness, so it can be applied in accordance with the needs of learning. As in this study, researchers have problems related to students 'motion skills. The writer tries to apply learning models that would be suitable to improve students' movement skills. In this study, the learning model used is in the experimental group using inquiry model while in the control group using direct instruction model (Direct Instruction). Based on the results of research obtained there are differences in results from both models, but the difference in scores obtained did not increase significantly between pretest and posttest score. If we look from the characteristic of the learning model, the results obtained are expected to have a significant increase between the pretest and posttest score. This can be caused by psychological factors of student interest in learning.

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