Improving Fundamental Skills of Elementary School Students through Fundamental Skills Card-Based Cooperative Learning Model

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Abstract. The general objective of this study is to determine the effect of fundamental skills (FS) card-based cooperative learning model on the elementary school students. The specific objectives are to describe the effectiveness of FS card, and opinions about FS card media. This type of research is a quasi-experiment, one group pretest-posttest design. The population of this study was Buleleng-Bali Elementary School. The sampling technique used was purposive random sampling. Data collection used FS test instruments, formative class evaluation questionnaires and students’ opinions about FS card media. Data were analyzed by using quantitative qualitative descriptive and t-test at significance level of 0.05. The results of this study showed that: 1) the learning effectiveness reached a score of 2.80 from a maximum score of 3.00. 2) 92.39% of the students gave positive opinions, and 3) the result of t-count was 24, 17; p-value < α = 0.05. The conclusions of this study are: 1) the effectiveness of FS card-based cooperative learning model is very good, 2) students think positively about FS card media, and 3) FS card-based cooperative learning models can improve the FS of the elementary school students. It is recommended that elementary school PE teachers can implement FS card-based cooperative learning model.

1. Introduction

Physical education/PE learning has strategic role in the industrial 4.0 revolution period which has the characteristics of utilizing advanced technology on every side of human life. The strategic role of the PJOK subject is to prepare our body to stay healthy and fit so that we are able to think critically in choosing and utilizing the advanced technology in everyday life. The condition of healthy and fit body is not easily obtained, it requires regular movement activities, adequate rest and balanced nutritional intake.

The fulfillment of students’ movement activities in elementary school is the duty and responsibility of the PE teacher by providing motion assignments that are in accordance with the level of growth and
development of the elementary school students. According to Bart Crum [1], the physical education learning in the elementary school is focused on movement ‘vocabulary’ and movement ‘grammar’. The movement ‘vocabulary’ in question is the students recognize, learn and master various types of motion by paying attention to various things including body awareness, space and rhythm. While the movement ‘grammar’ are more directed at the way or technique of doing the motion. Both of these will be the student's own identity from other students.

Movement ‘vocabulary’ and movement ‘grammar’ learned by the elementary students are prioritized in the development of fundamental motor skills. David L. Gallahu and John C. Ozmun [2] mention that fundamental motion skills are observable fundamental movement skill patterns, including locomotor activities such as running and jumping, manipulative activities such as throwing and catching, and stability activities such as walking on beams and one foot balance. SP Kalaja et. al [3] also mention that fundamental motion skills consist locomotor skills, manipulative skills, and balance skills. Widiastuti [4] mentions that fundamental motion includes locomotor, non-locomotor and manipulative motion. The developing a variety of fundamental motion skills can help students become athletes in fulfilling special sports training, the opinions of J Tangkudung and W Puspitorini [5].

The Working Group of Buleleng-Bali Physical Education Teachers states that there are 2 (two) important things currently needed by teachers, namely the use of learning media, and the implementation of innovative learning model. So far the use of learning media is limited to one sheet of manila paper placed in the middle of the students. The students' access in utilizing learning media is very little and high turn time. This causes little motion activity which leads to the students' low physical fitness. Research on physical fitness level of students in Buleleng Regency has been carried out by Budiaowan et. al. [6] who concluded that 91% of junior high school students in Buleleng Regency had a level of physical fitness in less and very less classifications. Yoda [7] said 64% of the XI and XII grade students of Singaraja State High School 4, Buleleng-Bali has very low physical fitness level. Based on this fact, the realization of learning media that can be accessed students widely, lowering the waiting turn time and increasing the active time of practicing for the students are urgently needed.

Another thing needed by physical education teachers in Buleleng-Bali is the implementation of innovative learning model. The current learning paradigm that prioritizes the student active participation (student centered) spurs the elementary school physical education teachers in Buleleng-Bali Regency to try to make it happens. In general, the elementary physical education teachers in Buleleng Regency only recognize, understand and implement cooperative learning model, even though teachers are still encountered using conventional models that tend to be teacher-centered. The spirit of the innovative learning model, which is to teach students to inspirational, collaborative and fun situations, is being developed. The teachers have begun to act as the facilitator, inspirator and students learning partner so that the teacher's dominance in learning has begun to diminish. The students actively seek information, carry out motion tasks and communicate knowledge, attitudes and skills during the learning process.

The learning fundamental motion skills in Buleleng-Bali Regency elementary school in general has not used learning media that can be widely accessed by students. Generally the teacher provides one sheet of manila paper in the middle of the students to explain the learning material. At present there has been a learning media material for fundamental skills card-shaped skills known as motion cards series fundamental skills. The motion card series fundamental skills is a learning medium that contains alternative choices of learning motion assignments for fundamental skills material (locomotor, non-locomotor, and manipulative) that students will later choose and suit to do.

According to Wijaya, Made Agus [8], fundamental skills cards have two sides, namely the front and the main sides. The front side is 'face skin / cover' as the first identity of the motion card. This front
side represents that students love PJOK subject so that it is written I heart PJOK/PE. Whereas the main side is the core part of this motion card which contains 5 components, namely: 1) student motion tasks, 2) images as the visualization of student motion tasks, 3) sequence number of motion tasks, 4) motivation of students in carrying out motion tasks, and 5) positive values of physical education.

Based on the description above, the formulation of the problems to be studied are: 1) What is the effectiveness of fundamental skills card-based cooperative learning model in the opinion of the elementary students in Buleleng-Bali Regency? 2) What is the opinion of Buleleng-Bali Regency elementary school students about fundamental skills card media? 3) What is the effect of the implementation of fundamental skills card-based cooperative learning model on fundamental motion skills of Buleleng-Bali Regency elementary school students? In general, the purpose of this study is to determine the effect of the implementation of fundamental skills card-based cooperative learning model on fundamental skills of Buleleng-Bali Regency elementary school students.

2. Method

The type of this research is quasi-experiment, with the design of one group pretest-posttest design [9]. The population of this study was the elementary school students in Buleleng-Bali Regency. The sampling technique used was purposive random sampling. The sample criteria in this study are: 1) the elementary school is willing to be the location of research, 2) the physical education teachers have the minimum academic qualification of education undergraduate in the fields of physical education, health and recreation, 3) the physical education teachers have educator certificates, and 4) the teacher’s teaching experience is minimally 10 years. Based on these criteria, the samples of this study were the students of No 1 Banjar Tegal, the elementary school No. 4 and 7 Banyuning, the elementary school No. 2 Pemaron, and the elementary school No 3 Banjar Jawa.

The research data were collected through Formative Class Evaluation/ FCE to measure the effectiveness of learning according to the students, questionnaires on the students’ opinions about fundamental motion card media, as well as fundamental motion skills tests consisting of 3 test items, namely: 1) walking on a 10 m straight track (locomotor) test, 2) one foot touch head (non-locomotor) [10], and 3) throwing and catching tennis ball on a wall with a distance of 1.5m (manipulative). All instruments used have been declared to pass the content validity and reliability test. The collected data were then analyzed by quantitative-qualitative descriptive and t-test at a significance level of $\alpha = 0.05$.

| Score         | Value | Category     |
|---------------|-------|--------------|
| 2.77 – above  | 5     | Very Good    |
| 2.58 – 2.76   | 4     | Good         |
| 2.34 – 2.57   | 3     | Medium       |
| 2.15 – 2.33   | 2     | Less         |
| 2.14 – down   | 1     | Very Less    |

3. Results and Discussion

The learning media of motion card series fundamental movement used in this study are the development research products that the researchers produce. Prior to the discussion, the following will describe the characteristics and specifications of motion card of PESH fundamental movement series as one of the final product of this research. This motion card series fundamental movement consists of 3 (three) variants / types based on the level of motion difficulty, namely: 1) The motion card with easy difficulty level (green color), 2) the motion card with moderate difficulty level (yellow color), and 3) the motion card with hard difficulty level (red color). One box of card consists of 36 pieces of motion card with the details 12 locomotor, 12 non locomotor and 12 manipulative movement. The card size is 8.5 cm x 6 cm, made of paper (art paper 260 grams) laminated so it is not easy to get dirty,
wet or folded. The shape and appearance of the main side of the motion card series fundamental motion according to Wijaya, Made Agus [12] are shown in Figure 1.

**Figure 1.** The Main Side of Motion Card series Fundamental Motion of Physical Education

This study implemented the Numbered Head Together / NHT type of cooperative learning model. Operationally, the NHT cooperative learning model was carried out by: students in a heterogeneous group wear chest numbers 1 - 5, then they carried out activities of thinking, learning, moving and practicing together starting from identifying motion card to the implementation of movements according to the motion card chosen and agreed with the group. In addition to motion tasks, the character aspects listed on the motion card were also internalized in the learning. After the teacher had given question and appointed one of the chest numbers, the student wearing the chest number according to the teacher's choice became the representative of the group to answer the questions from the teacher. Thus the cooperative learning process took place to provide a meaningful learning experience to the students by using the aids of motion card series fundamental motion.

Shortly after the students had finished the learning, the students filled out students opinion questionnaires about learning using the NHT cooperative learning model with motion card. The results of the students’ opinions are summarized in table 2.

**Table 2.** Learning Effectiveness according to the Opinion of Elementary School/ ES Students in Buleleng-Bali Regency

| No | School Name            | Number of Student | Student Opinion Score /FCE |
|----|------------------------|-------------------|---------------------------|
| 1  | ES No 1 Banjar Tegal   | 26                | 2.74                      |
| 2  | ES No 4 dan 7 Banyuning| 34                | 2.71                      |
| 3  | ES No 2 Pemaron        | 34                | 2.74                      |
| 4  | ES No 3 Banjar Jawa    | 28                | 2.99                      |
|    | **Mean**               |                   | **2.80**                  |

Based on table 2, it can be seen that the average score of students' opinions reached 2.80, included in the very good category. This implies that 122 students who participated actively revealed that there
was something impressive in the learning, gained the new motion experiences that were previously not mastered by the students, learned and moved by not feeling forced, followed the learning in a pleasant atmosphere and learned and moved with mutual help.

Studying more deeply about motion card, then the students were asked to fill out student opinion questionnaires about motion card media series fundamental motion. The questionnaire results are available in Table 3.

### Table 3. Opinion of Buleleng Regency Elementary School Students about Fundamental Motion Card Learning Media

| No | Name School                  | Number of Student | Percentage of Student with Positive Opinion |
|----|------------------------------|-------------------|--------------------------------------------|
| 1  | ES No 1 Banjar Tegal         | 26                | 100.00%                                    |
| 2  | ES No 4 dan 7 Banyuning      | 31                | 91.17%                                     |
| 3  | ES No 2 Pemaron              | 29                | 85.29%                                     |
| 4  | ES No 3 Banjar Jawa          | 27                | 93.10%                                     |

| Mean | 92.39% |

According to table 3, 92.39% (113 students) gave positive opinions on motion card series fundamental motion. This shows that most students think positively that the appearance of the image on the motion card is clearly visible, the image on the motion card attracts students to learn and move, the writing on the motion card is easily understood by students, the motion card is easy to carry / practical, the color of the image and letters on the motion card is not easily erased, and a set of motion card is easy for students to grasp.

The test results of the students' fundamental motion skills before being tested for hypotheses were carried out by a pre-test, namely the data distribution normality (Lilliefors Kolmogorov-Smirnov Test) and data homogeneity (Levene Test). All data in this study were normally distributed and homogeneous. Next was the hypothesis, using the t-test. The results of the t-test showed that t-count reached 24.17; p-value <α = 0.05. This means that the implementation of fundamental motion card-based cooperative learning model is able to improve the fundamental motion skills of Buleleng-Bali elementary school students.

The development of fundamental motion for the elementary students is an urgent matter, physical education teachers have a strategic role through meaningful motion assignments. Motion according to Wuest and Bucher [13] is the key to physical education and sports. For this reason, the physical education teachers are expected to be able to realize and motivate students to move according to their body characteristics.

In addition to realize the motion tasks, another important thing that needs to be considered by the physical education teachers is the realization of students’ pleasure through the motion tasks. According to Jenna R. Lorusso, Stefanie M. Pavlovich and Chunlei Lu [14], pleasure in PJOK learning can increase students’ active participation in learning and form active lifestyles, facilitate teachers in managing classes, develop students as a whole and increase the status and acceptance of PJOK in schools.

The use of innovative learning model which is characterized by student-oriented learning (student center) in this study used the NHT cooperative learning model. According to Robert E. Slavin [15] the students in implementing cooperative learning learn and move by supporting each other to succeed, not to fail. Furthermore according to Karen L. Medsker and Kristina M. Holdsworth [16], there are five important components in cooperative learning, namely: 1) positive interdependence, 2) face to face (face to face promotive interaction), 3) individual and group accountability, 4) interpersonal and small group skills, and 5) group processing. There are various types of cooperative learning model
such as Student Teams Achievement Student (STAD), Think Pair Share (TPS), Jigsaw and Numbered Head Together (NHT). The uniqueness of the NHT koopeartif learning model is reflected in its syntax, which consists of numbering, submitting questions, thinking together and answering [17].

The researches related to cooperative learning model has been carried out by some experts, among others, first, Brent D. Bradford, Clive N. Hicson and Ashleigh K. Evaniew [18] concluded that the selection of cooperative learning model in PJOK subjects is the right step in helping the elementary school students to gain knowledge, skills and attitudes in an effort to be productive individuals in society when they involve in physical activity. Second, Habib Bensikaddour, et al. [19], which states that cooperative learning model in schools provides learning experiences through positive students interactions, increases self-confidence and encourages groups to create the conducive learning environment to achieve the learning purposes.

4. Conclusions

Based on the results of research and discussion, the conclusions of this study are: 1) the effectiveness of fundamental skills card-based cooperative learning model in the opinion of the elementary school students in Buleleng-Bali Regency included in the excellent category, 2) most students gave positive opinions about fundamental skills card media, and 3) the implementation of the fundamental skills card-based cooperative learning model is able to improve the fundamental skills of the Elementary School students of Buleleng-Bali Regency.

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