

# A Rhythmic Activity Learning Model Based on Javanese Traditional Dance to Improve Rhythmic Skills

Farida Mulyaningsih\*, Wawan S. Suherman, Pamuji Sukoco, Ermawan Susanto

Faculty of Sports Sciences, State University of Yogyakarta, Indonesia

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**Abstract** Rhythmic activity is part of physical education learning that has an influence on students' rhythmic skills. This study aims to produce a rhythmic activity learning model based on Javanese traditional dance to improve the rhythmic skills of elementary school students. This research was pursued by using the research & development method. The research procedure consisted of four stages; Stage 1. Preliminary study (N=30); Stage 2. Model development; Stage 3. Model validation (N=5); and Stage 4. Model trial (N=64). The data collection technique used is in the form of a model feasibility test. Data analysis through Confirmation Factor Analysis (CFA) is summarized in the form of quantitative and qualitative descriptive analysis. The results showed that: (1) The rhythmic activity learning model based on Javanese traditional dance has 7 warm-up movements, 15 core movements, and 4 cooling down movements; (2) The learning model of rhythmic activity based on Javanese traditional dance is effective for improving students' rhythmic skills, in terms of the aspects of memorizing movements ( $2.738 \pm 0.556$ ), the accuracy of movements ( $3.224 \pm 0.529$ ), the flexibility of movements ( $2.617 \pm 0.540$ ), and seriousness of movements ( $3.158 \pm 0.521$ ). Based on the results of the model feasibility test, it is known that the level of implementation of the rhythmic activity model based on Javanese traditional dance is very high at 90.26% and the quality of the rhythmic activity model based on Javanese traditional dance is very high at 92.75%. Through qualitative analysis, it is known that the rhythmic activity model based on traditional Javanese dance is suitable for use in learning rhythmic activities for

elementary school students.

**Keywords** Rhythmic Skills, Physical Activity, Physical Education, Dance, Learning Model

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## 1. Introduction

Rhythmic activities in elementary schools aim to increase rhythm sensitivity and provide the experience of dance movements as a means of expression [1]. There are three forms of dance that can be given to students, namely singing dance, folk dance, and creative dance [2]. Rhythmic activity is the development of rhythmic movement skills and the art of rhythmic movement as well as the development of aspects of knowledge that are relevant to positive values. In the learning process, it focuses on the suitability or accuracy between motion and rhythm. The development of rhythmic activity learning in elementary schools can be grouped into two activities, namely standard structured rhythmic activities and free structured rhythmic activities [3].

Learning rhythmic activities can improve students' rhythmic skills. Rhythmic activities are carried out to convey a sense of art or the beauty of movement accompanied by rhythmic music or free exercise. The elements contained in rhythmic motion or rhythmic activity are flexibility, continuity of movement, flexibility, flexibility, and accuracy of movement with the rhythm of music [4].

However, the observations that have been made show that many teachers have difficulty in implementing rhythmic activity learning, even among them annulling the rhythmic activity material because it is too difficult and does not even teach it. The problem increases because it is found that teachers are less able to develop learning models to develop all student domains.

Other problems that arise are (1) The lack of rhythmic activity learning equipment, such as tape recorders, cassettes or flash disks, electricity, and using the schoolyard; (2) Rhythmic activity learning is given in the form of Physical Fitness Gymnastics which is a gymnastic activity for the general public so that most students have difficulty in various existing movements, are also influenced by music that is too fast, and alternating movement movements, (3) The lack of movement vocabulary from the teacher and worries about making mistakes in front of students, (4) Rhythmic activities given in schools the impact does not contain elements of the culture that developed in the Java area, and (5) The rhythmic activities provided have not been able to improve the rhythmic skills of students.

Learning rhythmic activities in elementary schools should be adapted to the characteristics of students as the basis for reflective movements or body movements beyond their abilities or based on observations of environmental culture. The culture that develops in Java is rich in various kinds of traditional dances [5]. Dance is a combination of movement and song that is in harmony, with expressive movements so that it can express the feeling of motion for students who do it.

Javanese traditional dance has characteristics of a rhythmic activity and cultural preservation [6]. So that Javanese traditional dance can always be consistent in its development and preservation, it needs to be preserved in the form of learning rhythmic activities in elementary schools. This is intended to anticipate the phenomenon of today's society which prefers modern things and tries to leave traditional culture [7]. Art is an important aspect of human life, in order to fulfill their spiritual needs. Where humans consist of physical and spiritual elements, both of which require balance and harmony in their implementation.

Javanese traditional dance is a dance that is born, grows and develops in Javanese society and is passed down or inherited continuously from generation to generation, or in other words, as long as the dance is still appropriate and recognized by the population, including traditional dances [8]. Javanese traditional dances, such as the Angguk dance, Gambyong dance, Jathilan dance, Bedaya dance and many more were born as folk dances as a result of processing various aspects, namely, social, cultural, and historical aspects that grew up in Javanese society [2, 9]. This dance has certain values, including as a means of interaction between society and entertainment. It was also born as a

response to various elements that existed at that time so a folk dance was formed as one of the Javanese cultural identities [10].

Rhythmic and dance activities have something in common, namely activities that combine movement with music. Traditional dance is a result of the expression of human desire for beauty with the background or cultural system of the community that owns the art. In traditional dance, messages from the community are implied in the form of knowledge, ideas, beliefs, values, and norms [3, 8]. The dance work produced is very simple, both in terms of motion, clothing and accompaniment. Every traditional dance work is not too concerned with good dancing skills or techniques, but rather with the expression of the soul and the purpose of the movements he performs [1].

Javanese traditional dance was created for all circles, both the general public from children to adults, as well as special communities, such as students in school institutions. Therefore, traditional Javanese dance is suitable for elementary school students [8, 12]. For students, besides being rhythmic activities that are free according to the wishes of students, they can also be used as a vehicle for teaching structured rhythmic activities, meaning rhythmic activity movements that already exist, are made, or standardized either without using tools or by using tools [13].

As a vehicle for improving the rhythmic skills of elementary school students, this rhythmic activity learning model has six basic components, namely (1) Theoretical concept; (2) Syntax; (3) Social systems; (4) Principles of reaction; (5) Support systems; and (6) Impact models [13]. For this reason, research questions that will be answered include:

1. Is the construction of the rhythmic activity learning model developed valid with the characteristics of elementary school students?
2. How is the level of effectiveness of the rhythmic activity learning model in improving the rhythmic skills of elementary school students?
3. What is the feasibility level of the rhythmic activity learning model developed from the aspects of rote movement, the accuracy of movement, the flexibility of movement, and seriousness of movement?

## 2. Materials and Methods

### 2.1. Research Design

This study uses a Research & Development research design [14]. The research procedure consisted of four phases; Phase 1. Preliminary studies (N=30); Phase 2. Model development of ritmik activity based on Javanese traditional dance; Phase 3. Model validation (N=5). Phase 4. Model trial (N=64).

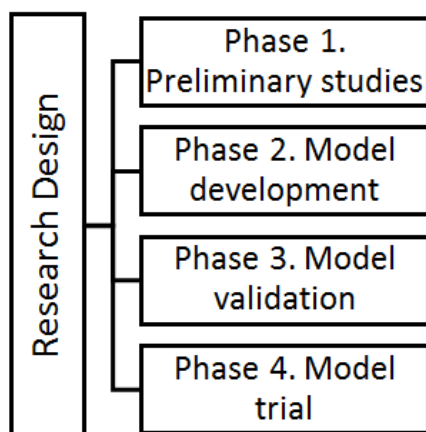


Figure 1. Research Design

## 2.2. Participants

Participants were selected through the purposive sampling technique. The selection of sample sizes varies in each phase. In the preliminary study phase, the participants were 30 students. This number represents almost half of the trial population. In the validation stage of the rhythmic activity model, there are 5 rhythmic activity experts. This number is chosen according to the number of existing expert competencies. One of the competencies in question is those who have long experience of Javanese traditional dance. In the model trial phase, the participants were 64 elementary school students aged 9-11 years. This number represents students who meet the requirements and are representative of carrying out rhythmic activity trials.

Table 1. Research Participants

Phase	Description	Total
Preliminary studies	Students	30
Model validation	Teacher	5
Model trial	Students	64

## 2.3. Data Collection & Data Analysis

The data collection technique is in the form of a feasibility test of a rhythmic activity model based on traditional Javanese dance which is seen from the aspects of model implementation and model quality through four rhythmic movements: movement memorization, movement accuracy, movement flexibility, and seriousness of movement. From the results of the model feasibility test, then the data were analyzed through Confirmation Factor Analysis (CFA).

## 3. Results

Before producing the syntactic model of the rhythmic activity, several stages have been carried out, namely the preliminary study stage and the model development stage. Here are the steps in order:

**Phase 1. Preliminary Study.** In the preliminary study, theoretical mapping was carried out regarding rhythmic activities based on traditional Javanese dance for elementary school children. Several theoretical foundations were obtained to develop a rhythmic activity model based on traditional Javanese dance that could improve children's rhythmic skills. In stage 1, information was also explored about the characteristics of elementary school students related to their activities, balance, motor level, interest, and attention. The researcher also explores the teacher's knowledge about what is meant by a rhythmic activity model based on traditional Javanese dance which consists of basic knowledge, benefits, material development, and instrument development. Finally, the researchers looked for information related to the availability of support for rhythmic activity models based on traditional Javanese dance, which consisted of equipment availability and equipment development. The data in stage 1 is used to develop a rhythmic activity model based on Javanese traditional dance. Details of the results of the preliminary study are described in the following description:

### 3.1. Characteristics of Elementary School Students

Based on the data in the preliminary research, information can be obtained that: (1) The competence of teachers in carrying out rhythmic activities in elementary schools is still relatively low. Indicators of teacher competence are the teacher's ability to plan rhythmic activities 52.07%, the teacher's ability to carry out rhythmic activities by 40.16%; (2) Methods and benefits of rhythmic activity are in the moderate category. Indicators of methods and benefits of learning are teachers know the right learning method by 61.50%, teachers know the benefits of rhythmic activity by 65.30%; (3) The facilities and infrastructure used in rhythmic activities are still very limited so learning has not run optimally; (4) The element of safety used in rhythmic activities is also still relatively low. The results of the preliminary study also show that most PE teachers have not been able to carry out rhythmic activities aimed at improving the rhythmic skills of students, which is 56.33%. The following results of the preliminary study can be seen in Table 2.

**Table 2.** Summary of Preliminary Study Results

No	Aspect Studied	Findings
1	Teacher competence	52% of teachers have planned and 40% have carried out rhythmic activities
2	Teacher ability	More than 80% developed rhythmic activity models
3	Teacher knowledge	More than 80% of teachers have not developed a rhythmic activity model based on traditional Javanese dance
4	Conclusion	It is necessary to develop a rhythmic activity model to improve the rhythmic skills of elementary school students

### 3.2. Teacher's Knowledge of the Rhythmic Activity Model

Before carrying out the model development phase, the teacher's knowledge of the rhythmic activity model was first explored through a questionnaire. Teacher knowledge is very important to follow up on the development phase of the rhythmic activity model. The results of the research related to the teacher's knowledge of the rhythmic activity learning model, the benefits, how to develop materials, and how to develop an assessment of learning outcomes, can clearly be seen in Table 3.

**Table 3.** Teachers' Understanding of Rhythmic Activity

Descriptions	High (%)	Low (%)
Understanding	15	85
Benefit	30	70
Materials Development	40	60
Instrument Development	40	60

Based on Table 3, it can be explained that most teachers do not understand the meaning of the rhythmic activity learning model based on Javanese traditional dance, the benefits of the learning model, teachers also still have difficulty in developing material, and have difficulty developing an instrument for assessing student learning outcomes. For this reason, teachers need alternative learning models to improve students' rhythmic skills:

**Phase 2. Model Development.** The results of the preliminary study stage become recommendations for the development of a rhythmic activity model based on Javanese traditional dance. In stage 2, a learning syntax has been compiled, namely warming up, core exercises, and cooling down which is based on Javanese traditional dance. The development of syntax for learning rhythmic activities based on Javanese traditional dances obtained an average posttest score which was higher than the pretest average value seen from the Wilcoxon statistical results  $p \text{ sig} < 0.05$ . So that it can be interpreted that there is a significant difference, it can be concluded that the rhythmic activity learning model based on traditional Javanese dance is effective for improving students' rhythmic skills. The following is an explanation of the learning syntax:

#### Activity 1. Warming-up

This activity includes preparing students, praying,

opening to focus students' attention, giving apperception, generating motivation so that students are ready to take part in learning and warming up. There are 7 rhythmic activity movements based on traditional Javanese dance. Warm-up exercises in rhythmic activities are carried out together, the exercises are simple, easy to do by all students, involve all members of the body moving together, and have interesting characteristics. The purpose of the warm-up exercise in rhythmic activities is (1) to increase the body temperature of students, (2) to fulfill the desire to move students, and (3) to bring the body and soul of students to be ready to take part in core learning.

#### Activity 2. Core Training

It is the main learning process in order to achieve developmental standards which are carried out interactively, inspiring, fun, challenging, and participatory. There are 15 rhythmic activity movements based on traditional Javanese dance. The learning process is carried out through observing, asking, trying, associating, and communicating. Core training refers to the Austrian system which contains five (5) elements, namely, (1) normalization exercises, (2) balance exercises, (3) strength and agility training, (4) walking and running exercises, and (5) jumping and jumping exercises jump.

#### Activity 3. Cooling-down

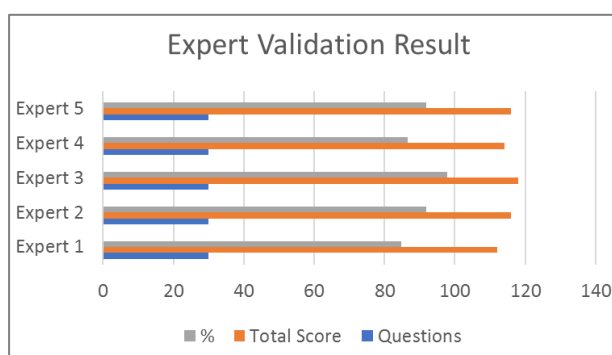
It is a closing activity carried out to end learning activities in the form of calming activities, providing feedback, and following up. There are 4 rhythmic activity movements based on Javanese traditional dance. Cooling exercises have the aim of lowering body temperature, restoring the atmosphere of the soul and body to the next learning direction so that the exercise is light.

**Phase 3. Model Validation.** In the third stage, an assessment of the rhythmic activity model based on traditional Javanese dance was carried out by experts consisting of 5 teachers.

Based on the results of the development of a rhythmic activity model based on Javanese traditional dance from experts, it is known that the research product in the form of a rhythmic activity model based on Javanese traditional dance is valid, namely from the four components: material, accuracy, practicality, and safety, showing the average value of the five validators is at good category ( $>3.00$ ). Furthermore, the research model can be used in the product testing process.

The assessment of the implementation of the model carried out by experts uses the Content Validity Ratio (CVR). Expert validation results show an average answer rate of 89.54% with an average CVR calculation of 0.902 which means that the rhythmic activity model based on Javanese traditional dance is relevant or good, and also has high content validity. On this basis, the four aspects of the implementation of the model are said to be good and have valid contents.

Based on the observations of 5 experts, obtained a score between 112-118 while the maximum value is 120, thus the percentage of observations of 5 experts is valid. The conclusions of the five teacher validators stated that the rhythmic activity model based on traditional Javanese dance was "appropriate to use".



Note: The percentage value of the agreement must be more than (>80%) with criteria of "valid" and less than (<80%) "invalid".

Figure 2. Expert Validation Result

#### Phase 4. Model Trial.

At the model testing stage, it is generally known that the implementation and quality of the rhythmic activity model based on Javanese traditional dance score 90.26% and 92.75%, which means that the rhythmic activity model based on Javanese traditional dance has a good level of implementation and quality. Prerequisite tests which include tests of normality and homogeneity are also used in testing the effectiveness of this model. The results of the prerequisite test are normal and homogeneous.

The learning model of rhythmic activity based on Javanese traditional dance is effective for improving students' rhythmic skills, in terms of movement memorization ( $2.738 \pm 0.556$ ), movement accuracy ( $3.224 \pm 0.529$ ), movement flexibility ( $2.617 \pm 0.540$ ), and seriousness of movement ( $3.158 \pm 0.521$ ). A summary of aspects of rhythmic skills is presented in Table 4 and Figure 3.

Table 4. Rhythmic Skill Aspects

Aspects	Rhythmic Skill	P (sig)
	Mean $\pm$ SD	
Movement Memorization	2,738 $\pm$ 0,556	
Movement Accuracy	3,224 $\pm$ 0,529	
Movement Flexibility	2,617 $\pm$ 0,540	0,001*
Movement Seriousness	3,158 $\pm$ 0,521	

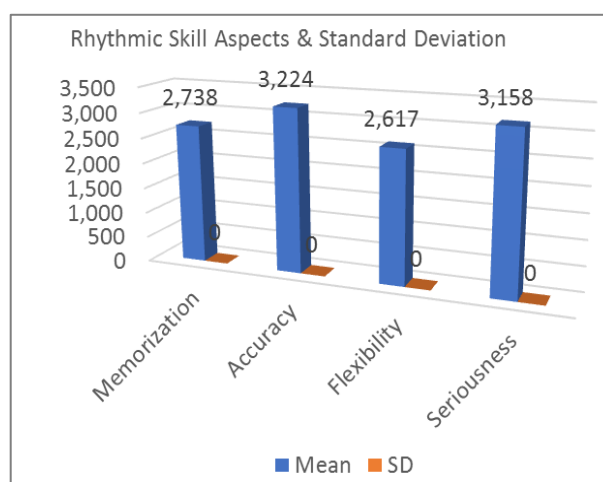


Figure 3. Rhythmic Skill Aspects & Standard Deviation

## 4. Discussion

Rhythmic activity is a series of human movements that are carried out in rhythmic patterns, adjusted to changes in tempo, or merely body expressions following musical accompaniment or beats outside of music. Considering that rhythmic activities both have characteristics of creative movements that are closer to art, the discussion of rhythmic activities is based on the theory of traditional Javanese dance and dance.

### 4.1. Phase 1. Preliminary Studies

Based on the research results that have been described previously, when viewed from the characteristics of learning rhythmic activities of elementary school students, it is known that elementary school students participating in PE learning are mostly less active, have difficulty moving, are less happy, less attentive and more than half experience obstacles in rhythmic skills. Thus, teachers in PE learning need a rhythmic activity learning model that aims to improve rhythmic skills, balance, memorization, accuracy, seriousness and attention. The advantage of learning rhythmic activities is that it can increase creativity, mental, social and rhythmic movement skills themselves [15].

Appropriate rhythmic activities are given to children aged 7-12 years which is a period of seeking as much knowledge as possible. Where appropriate information and matters relating to the description of the real world will amaze him at this stage. This period is realistic, and therefore the communication between students and educators at this time is more stable [16]. Characteristics of students in the upper grades of elementary school are: (1) their attention is focused on everyday practical life, (2) curious, eager to learn, and realistic, (3) an interest in special lessons arises, (4) students view grades as an appropriate measure of their learning achievement at school, and (5) students like to form peer groups to play together, they make their own rules in their group [17]. Upper-class students are individuals who are very active in doing physical activities and filling their spare time. They can't stay still, always move and respond to every stimulus from their surroundings with movement. They always want to try something they see. The average age of upper-class students ranges from 10 to 12 years. These school-age students have different characteristics from younger students.

For students grade IV and above, Javanese traditional dance, apart from being a free rhythmic activity according to the wishes of the students, can also be used as a vehicle for teaching structured rhythmic activities, meaning rhythmic activity movements that already exist, are made or standardized. either without using tools or by using tools

Rhythmic activity is characterized as a creative movement that is closer to art [18]. Rhythmic activities in elementary schools aim to improve rhythm accuracy and provide flexibility of movement as a means of self-expression, as well as experience dance/dance movements. Dance is a rhythmic movement activity that is usually carried out with musical accompaniment, sometimes seen as a tool to express or express a certain cultural scope, which in its development is used for entertainment and enjoyment, as well as a tool for establishing communication and association, as well as a healthy activity. [19].

#### 4.2. Phase 2. Model Development

In developing a rhythmic activity model based on Javanese traditional dance, it is known that this model is very important for motor development and rhythmic skills. Elementary school age is a period of growth and development characterized by the nature of wanting to try, feeling happy, and imitating. Therefore, the elementary school age is often seen as a golden period in education [20]. Elementary school childhood is a very fundamental phase for individual development because at this phase there are enormous opportunities for personal formation and development and responsibility [21].

Rhythmic activities, which are often referred to as rhythmic gymnastics, have the following characteristics and rules: (1) The movements are always made or created

intentionally, (2) The movements are useful for achieving the goal of increasing flexibility, improving attitudes and beauty. gestures, increase skills, and (3) The movements are always organized and systematic.

To be able to perform rhythmic activities well, one must have good motor skills [22]. The motor process is a movement that directly involves the muscles to move and the innervation process that makes a person able to move his limbs [23]. Motor development is a process of movement maturity that directly involves muscles moving and the neural processes that make a person able to move his limbs freely. In this context, motor learning is realized through muscle responses that are expressed in a specific body movement or body part to improve the quality of body movement [24].

In developing a rhythmic activity model based on traditional Javanese dance, it is necessary to pay attention to the creativity of children in performing rhythmic movements [2,11]. Moreover, Javanese dance has a strong characteristic of movement which is a reflection of daily life such as walking, sitting, squatting, turning, twisting, and nodding [10, 11]. For this reason, students must be able to use their creative thinking skills through solving motion problems. Thus, students will develop their rhythmic skills. Rhythmic activities based on traditional Javanese dance provide many experiences where students are able to control their bodies with confidence and a high level of success, allowing them to help form positive concepts [9].

The development of this model is in accordance with the concept of rhythmic motion derived from one of the components in the Dalcroze Eurhythmics approach [25, 26]. Dalcroze's philosophy emphasizes that students who are given rhythmic movement activities will feel musical elements such as rhythm and melody which are responded to in the form of automatic movement [27]. Dalcroze's idea of using movement in musical activities can also stimulate students' mental strength to learn rhythmic skills [28]. This happens because there are two basic elements that describe the relationship between sound and motion, namely tone and motion. Rhythmic movement is naturally embedded in a person which makes it the strongest and closest musical element in human life, meaning that movement and rhythm must be in harmony.

#### 4.3. Phase 3. Model Validation

Based on expert validation of the rhythmic activity model based on Javanese traditional dance, it is known that there has been a consensus among experts regarding the model being developed which is valid. Judging from the agreement of the experts, it is known that the rhythmic activity model based on traditional Javanese dance has high benefits and is safe to be applied by children to achieve children's rhythmic skills.

At the validation stage of this model, it showed that the problems encountered at the beginning of the model preparation were proven, namely the lack of teacher ability

in providing rhythmic activity learning in the PE learning process in elementary schools [29]. The courage of teachers to apply various rhythmic activity learning models is still low so students have difficulty in carrying out rhythmic activity movements because of the lack of movement obtained. The model validation stage also emphasized that there were not many PE teachers who used local traditional dances as a vehicle for learning rhythmic activities. This is reflected in the absence of traditional dance as a local curriculum that needs to be developed.

The results of expert validation of the concept of Javanese traditional dance are that the dance can be modified for learning rhythmic activities [30]. Rhythmic and dance activities have something in common, namely activities that combine movement with music. Traditional dance is the result of the expression of human desire for beauty with the cultural background of the community that owns the art. In traditional dance, messages from the community are implied in the form of knowledge, ideas, beliefs, values, and norms [11, 31]. The dance work produced is very simple, both in terms of motion, clothing and accompaniment. Every traditional dance work is not too concerned with the ability or good dancing technique, but rather with the expression of the soul and the purpose of the movements he performs. According to the development of the era, Javanese dance was modified into a rhythmic activity.

Validation of this model also confirms that the developed model has a high social value. This social value is in accordance with social cognitive theory, namely a theory that emphasizes the idea that most human learning occurs in a social environment [32]. By observing other people, humans acquire knowledge, rules, skills, strategies, beliefs, and attitudes. Individuals also look at models or examples to study the usefulness and appropriateness of behaviors resulting from the behavior being modeled, then they act according to beliefs about their abilities and the expected outcomes of their actions [33].

Bandura explains that another distinctive characteristic of social cognitive theory is the major role it gives to self-regulatory functions [34]. People behave not just to conform to the tendencies of others. Most of their behavior is motivated and governed by internal standards and reactions to their own actions related to self-assessment.

#### 4.4. Phase 4. Model Trial

The trial results of the rhythmic activity model based on Javanese traditional dance also show the success of the model in improving rhythmic skills. This is influenced by the clarity of instructions and learning tools. The availability of learning tools or media and the development of physical education learning tools for elementary school students mostly stated that they were lacking and only 12% said they were sufficient. This is one of the causes of less interesting rhythmic activity learning, less varied learning

programs, and limited to monotonous activities. Ideally, schools provide adequate learning equipment or media, to improve the quality of the teaching and learning process which in turn can improve student learning outcomes [35].

Judging from the goal, the rhythmic activity model based on Javanese traditional dance can be implemented as an alternative to rhythmic learning in elementary school. This rhythmic activity model can be used to measure students' rhythmic skills. There are several learning models to develop rhythmic skills. Generally, rhythmic activity models are used in game or dance-type materials that promote teamwork between teams so that it is easy to assess rhythmic skills [36]. However, this rhythmic activity model based on traditional Javanese dance is flexible to be used in rhythmic learning both at elementary school age and in adolescence or above.

The rhythmic activity model based on traditional Javanese dance is packaged in a simple but fun way by giving students the opportunity to explore their skills in rhythmic activities so as to create a feeling of happiness, pleasure, joy, stimulate endorphins so that they can reduce the learning load of students and reduce stress levels due to heavy learning activities. [37, 38]. This is a novelty of the developed model.

## 5. Limitations

This research is not free from limitations. Researchers find it difficult to find elementary schools that carry out rhythmic learning activities intensively in one semester considering that not all schools are able to carry out learning due to limited learning facilities and costs. For this reason, the rhythmic activity model based on traditional Javanese dance can still be developed to assess the skills and attitudes of elementary school students or can even be developed at the level of other educational units.

## 6. Conclusions

The learning model of rhythmic activity based on Javanese traditional dance that was developed has a high level of implementation and quality. The rhythmic activity learning model based on Javanese traditional dance has 7 warm-up movements, 15 core movements, and 4 cooling-down movements. The learning model of rhythmic activity based on traditional Javanese dance is effective for improving students' rhythmic skills, in terms of movement memorization, the accuracy of movement, the flexibility of movement, and seriousness of movement. This is relevant to previous research that the rhythmic activity learning model based on Javanese traditional dance can improve students' rhythmic skills and the positive values contained in it.

## Conflict of Interest

The author declares that he has no conflict of interests.

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