



Non-Motor Training Methods in Learning Basic Gymnastics Movements

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Abstract. An overview of the structure and characteristics of movement is very helpful for students to master movement skills. This research analyzes non-motor training method learning in gymnastics classes with the subject of students majoring in Sports Science. The research design is action research through two cycles with data collection techniques with gymnastics skills tests. Research variables: 1) input: students and lecturers 2) process: learning using visual, verbal and live media and basic gymnastics movements 3) output: the value of the learning outcomes of gymnastics class. Data analysis by calculating the average learning outcomes of gymnastics classes and learning quality data analyzed qualitatively using the interactive model. The results of the research in cycle I pre-test data averaged 60.97 learning outcomes and achieved learning success of 16.22%. Post test data averaged learning outcomes of 66.62 and achieved learning success of 32.43% while the quality of learning was categorized as good. Learning results in cycle II post test data average learning outcome value 76.10 and achieve 91.89% complete learning with excellent learning quality. Conclusion: learning non-motor training methods (visual, verbal and live media) can improve mastery of basic movements in gymnastics classes.

Keywords: Non-Motor Training Method, Skills, Gymnastics Class

1 Introduction

Gymnastic movement is the functioning of the body and limbs in accordance with the provisions and rules so as to produce elements of motion characterized by motoric and aesthetic. Gymnastics can be interpreted in a broader sense as a model of formation and physical exercise carried out systematically by utilizing a series of movements that are prepared and carried out for a specific purpose [1]. Some students have difficulty mastering gymnastic movement skills. Gymnastics is a competitive sport that has a variety of complex movements in its movement structure so that good physical preparation is needed, especially strength, endurance, coordination, flexibility, biomotor and technique [2]; [3]; [4]. Among the factors causing failure to perform basic gymnastic movements is the lack of knowledge and understanding of the characteristics and structure of gymnastic movements. Performing gymnastic movements without being preceded by knowledge and understanding of the

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A. M. Sholikhah et al. (eds.), *Proceedings of the International Seminar of Sport and Exercise Science (ISSES 2024)*, Advances in Health Sciences Research 81,
https://doi.org/10.2991/978-94-6463-593-5_11

movement structure will cause failure in performing the movements. Therefore, testing gymnastics skills at the beginning of learning is not appropriate because the movement tasks at the beginning of learning are relatively difficult for children who do not have sufficient basic movements so that they require time and practice [5]. Experience of motor skills in action-related motor activities is influenced by the role of visual experience on movement skills. Prior motor experience also plays an important role in activation and action [6].

Learning styles can generally be distinguished in the form of diverger-type learning styles, which like to use their feelings and pay attention to something to learn. Meanwhile, the assimilator type likes to think and observe to understand information in a logical way. Furthermore, the converger type likes to think and act to do tasks actively. While the accommodator type likes to use their feelings and do something to learn [7]. The motor and sport learning style of using verbal and visual approaches before performing a movement task has an impact on learning the movement [8]. The purpose of introducing motion structures through a non-motor training method approach is to facilitate learning skills and minimize motion errors. An overview of motion skills is needed so that students gain prior knowledge of the skills to be performed. The learning process through the imagery method is needed so that learning can improve individual abilities by involving the five senses such as visual, kinesthetic, hearing, and touch [9].

Every learning situation usually has a number of stimuli that can be considered by the learning subject before giving a response. Information stimuli become a factor that must be processed first. The learning subject has the ability to decide which must be done through a learning process that is mental training by hearing and seeing. One way coaches help athletes get better at their sport is by having them imagine themselves doing the movements in their heads. This can help them improve their skills and become better at their sport [10]. New research shows that the brain can predict what the senses will experience before moving. This prediction can happen before actually moving the muscles. This means that the brain can use prediction and observation to understand how the senses will react without physically doing anything [11]. When you want to train your mind, it needs to function before you engage in sports activities. There are various ways you can do this, one of which is by practicing imagining things in your head, such as imagining yourself performing well in a sport so that it can help you become better at it [12].

When a gymnast sees an element of gymnastic movement, the process of sensing information comes into play. The information that has been selected by the senses will then occur the perception mechanism and will then be forwarded towards the information process. Processing information when carrying out skill activities goes through three phases, namely: input, determining decisions and output. Information needed to carry out motor activities can be perceived visually, auditory, proprioceptive from the sensory system [13]. Movement learning in the early stages should involve imagery of rudimentary movements. Imagery training has long been utilized to develop abilities and skills in many sports especially for beginners [14]. Imagery is a form of stimulation in the brain domain that results in a person being able to form many images in their brain. Imagery is a good technique for developing performance in a variety of sports skills [12].

Among motor learning media is using audio-visual media. The combination of audio visual can be seen and heard by students so that in the learning process students can create motion visualization. Visualization is an effort to imagine and observe carefully about what is seen, heard and felt and then realized in the form of motion activity [15]. Movement shadow is a form of movement construction that is successfully built by a person in his mind based on the information / instructions he receives. Non-motor training method is an effort to facilitate students in learning skills while minimizing the occurrence of failure when performing movements. Non-motor training method is done before practicing motor practices. The method applied in the non-motor training method requires students to see, observe, pay attention and imagine carefully a certain movement pattern and then remember the movement before practicing it. Model information stimuli that can be done by explaining verbally, seeing visual media through image media, electronic media and examples of live movements demonstrated by model figures.

This study aims to analyze the function of non-motor training methods (verbal, visual, live) on the level of student mastery of movement skills in gymnastics classes.

2 Method

The research was conducted in a sports laboratory with the subject of all students majoring in Sports Science who attended gymnastics classes. The research used a class action design (action research) through two cycles. Each cycle uses four stages of implementation, namely 1. planning stage 2. action stage 3. observation stage and 4. reflection stage. Data includes pre test, post test 1 and post test 2. Data collection techniques through gymnastics skills tests modified by certified gymnastics referee lecturers. Research variables: 1. input: students and lecturers 2. process: learning using non-motor training method media (visual, verbal and live) and basic movement elements of gymnastics 3. output: Learning value of gymnastics class students. The indicator of the success of this class action is if the value of the learning outcomes of the gymnastics class has an increasing average. Data analysis was carried out by calculating the average value of gymnastics class learning outcomes in each cycle. The results of data analysis of the level of mastery of skills are indicated through changes in learning achievement and learning quality data are analyzed qualitatively (interactive model).

3 Results

Research data in cycle I (S1) includes pre-test-post test 1 data and learning quality. Successful learning outcomes were analyzed using gymnastics practice guidelines. The criteria for successful learning if it reaches a minimum score of 60 (range of scores 0-100). The results of research in cycle I (S1) there is a difference in the average value of learning outcomes in gymnastics classes. Pre test data, the lowest learning outcome value was 50 and the highest was 75 with an average of 60.97 and achieved learning success of 16.22%. In the cycle 1 post test, the highest score was 55, the lowest was 80 with an average of 66.62 and achieved learning success of 32.43%. Based on this data,

it can be temporarily concluded that there is an increase in the average student learning outcomes in gymnastics courses. The percentage increase in learning success has not shown a high significance when compared to the total number of lecture participants. The results of learning quality research in cycle I are included in the medium category. The results of learning quality research in cycle 1 showed that two aspects (33.33%) were categorized as less and four aspects (66.67%) were categorized as moderate.

Table 1. Cycle 1 Learning Outcome Score

	Pre Test	Post Test Cycle 1
Lowest score	50	55
Top score	75	80
Average	60,97	66,62
Learning thoroughly	16,22%	32,43%

The results of the assessment in cycle II (S2) there is a difference in the average value of learning outcomes in the gymnastics class. Pre test data average learning outcome value 60.97 and learning success 16.22%. The value of learning outcomes in cycle 1 (post test 1) the average learning outcome value is 66.62 and achieves 32.43% learning success. In cycle II (post test 2) the average learning outcome value was 76.10 and achieved learning success of 91.89%. Based on the research data, it can be concluded that there is an increase in the average learning outcomes in the gymnastics class. The quality of learning outcomes in cycle II there are 1 aspect (16.67%) categorized as moderate and 2 aspects (33.33%) categorized as good and 3 aspects (50.00%) categorized as excellent.

Table 2. Cycle 2 Learning Outcome Score

	Pre Test	Post test Cycle 1	Post Test Cycle II
Lowest score	50	55	63
Top score	75	80	90
Average	60,97	66,62	76,10
Learning thoroughly	16,22%	32,43%	91,89%

Errors in the learning process often result in deviations in one's motor experience. Therefore, motor learning requires careful planning and implementation. The various components involved in the skill learning process must be synergized and collaborated in order to minimize errors. The various components involved in the motor learning process include anatomical-physiological elements, cognitive-imaginative abilities, and the sensitivity and function of the five senses [16]; [17]; [18]. Suggests that motor learning requires various components that are integrated so that the correct set of skills is formed. Motor learning in addition to requiring various physical components such as

muscles, joints and other body segments also requires sensory tools and cognitive processing by involving understanding abilities.

4 **Discussion**

Getting the right motor and skill learning results requires efforts to reconstruct the learning process in order to minimize the occurrence of various errors that have an impact on deviating from one's motor and skill experiences. Learning media as a reference and reference model for understanding the structure of motion is an important factor that must be prepared so that mastery of skills is as expected. Media and models of motion structures presented to students both verbally, visually and live can be a learning strategy, increasing motivation and reference for students to understand motion structures. The development of learning strategies needs to be continuously pursued so that students can master skills in accordance with lecture objectives. The implementation of learning strategies must have meaning for the development of student competencies and must be continuously developed in order to increase expertise, competence and skills as a provision of expertise for students [19].

The researcher's experience in teaching gymnastics has given a lot of insight into the quality of students' gymnastics skills both at the beginning of the lecture and during the lecture for one semester. The average student learning achievement score is below the minimum standard expected. In fact, many of them experience relatively permanent motion errors that are difficult to correct. The results of this study have empirically proven the argument that the gymnastics learning process that has been carried out has a relatively low level of effectiveness. The main problem that causes is the ignorance of students about the structure and type of basic gymnastic movements / skills that will be performed as a result students have the potential to fail to be higher. Therefore, an experimental approach is needed to find out the right strategy so that students' mastery of basic gymnastic skills becomes better. A common method to find a motor learning model is by using an approach in an experimental context [20]. The results of this study prove that sharpening the imagination and perception of correct motion in students has helped a lot to provide cognitive motion experience. The training process in the cognitive domain has helped deliver students to be able to recognize movement techniques and perform motion correction steps. The implication in the psychomotor domain is that it makes it easier for students to perform movements in technical exercises. The contributing factor is that students have recognized the movement before doing the training process.

5 **Conclusion**

Learning non-motor training method (Verbal, visual, live) can improve mastery of basic movements in gymnastics class. The quality of the learning process improves for the better.

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