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Submission date: 03-Dec-2025 01:43PM (UTC+0700)
Submission ID: 2834120290
File name: 8_JPHR_IKADARNY.docx (47.34K)
Word count: 3147
Character count: 17385

Journal Physical Health Recreation (JPHR)
Volume * Nomor * ; Bulan ****
https://jurnal.stokbinaguna.ac.id/index.php/JP
e-ISSN : 2747-013X

Forward Roll Ability of PJKR FIKK UNM Students

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Abstract. This study aimed to analyze the forward roll ability of Physical Education, Health, and Recreation students at the Faculty of Public Health, Universitas Negeri Malang (FIKK UNM). The forward roll is a basic floor gymnastics skill and a prerequisite for mastering complex movements. The research method used was a descriptive quantitative survey. The sample consisted of 40 Physical Education, Health, and Recreation students, and data was collected through a structured assessment rubric covering the initial stance, execution, and final stance. The results showed that 4 students (10%) were in the very good category and 5 students (12.5%) were in the good category. However, the majority of the sample fell into the "fair" to "very poor" category, with 17 students (42.5%) in the fair category, 13 students (32.5%) in the poor category, and 1 student (2.5%) in the very poor category. Overall, the forward roll ability of the Physical Education, Health, and Recreation students at FIKK UNM was in the fair category. This is evident from the average scores obtained and the data distribution, which indicates that although some students had good mastery, the majority still experienced difficulties, particularly in the execution and final stance aspects of the movement.

Keywords: Forward Roll, Floor Gymnastics.

1 Introduction

Education is closely related to the study of humankind. When considering the overall development process of a country, education is a crucial component. One might argue that improving a nation's education system is directly related to improving the nation's overall standard of living. Education begins at a young age, with children, continues through adolescence, and continues into adulthood. Education is a lifelong process; it has no end point, and continues throughout life. Formal education begins at a young age and continues throughout life. According to Law No. 20 of 2003 concerning the National Education System, education is defined as a conscious and planned effort to create an atmosphere and learning process in which students can actively develop their potential to possess spiritual and religious strength, self-control, personality, intelligence, noble character, and the skills necessary for society, the nation, and the state. Education serves as a means to explore individual potential, thus becoming individuals who uphold intellectual, humanitarian, and religious principles (Trisnawati, 2021).

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Therefore, education is an agent of change that can influence both the individual who receives it and society as a whole. Education is generally defined as a human effort to develop their personality in accordance with cultural values and societal norms (Suwandayani and Isbadrianingtyas, 2017).[1].

Physical Education, Sports, and Health plays a vital role in producing superior human resources, not only in terms of theoretical knowledge, but also practical competencies in the field of sports. As prospective physical education teachers, PJKR students are required to master various basic movement skills, which will later become the main provision in the learning process. Physical education, sports, and health have a vital role in encouraging physical growth, psychological development, motor skill development, increased knowledge and thinking abilities, as well as the formation of attitudes, mental well-being, emotional stability, sportsmanship, spiritual-social values, and a healthy lifestyle. All of this aims to stimulate balanced growth and development (Ita et al., 2023; Kumagai et al., 2023). [2]. Physical education plays a significant role in character building and life skills development. In a dynamic learning environment, students are faced with situations that require them to work together, make quick decisions, and resolve conflicts. Team activities such as sports teach important values, including sportsmanship, discipline, leadership, and responsibility. These hands-on experiences through movement help students translate abstract concepts into concrete experiences. Thus, physical education produces not only physically fit students but also emotionally and socially mature students, ready to interact and contribute positively to society.Physical Education can be defined as education about and through human movement when educational goals are achieved through the media of muscle activity, including: sports, games, gymnastics, and exercise. The desired results are physically educated individuals. This value is part of the values of an educated individual, and is meaningful only when it relates to aspects of the individual's life. (Budi, 2021). [3]. In general, Physical Education serves as a long-term investment in the health and well-being of students. By instilling active lifestyle habits from an early age, Physical Education plays a crucial role in preventing public health problems, such as obesity, heart disease, and mental disorders triggered by a sedentary lifestyle. Physical Education empowers students with the knowledge and motivation to choose a healthy lifestyle, enabling them to manage stress and improve their mood through physical activity. Through effective implementation, Physical Education becomes a strong foundation for creating productive human resources (HR) with a high quality of life in the future.

One of the sports that is a mandatory curriculum and holds a fundamental position is gymnastics, especially floor gymnastics. Gymnastics, as a long-established sport, has continued to experience significant evolution in recent decades. Gymnastics, known as a sport in Indonesian, is a direct translation of the word "gymnastics" in English or "gymnastiek" in Dutch. The origin of the word "gymnastics" comes from the Greek, namely "gymnos," which means naked. According to Hidayat (1995), the term "gymnastiek" was used to refer to physical activities that required freedom of movement, so at that time, it was performed naked or semi-naked. This explanation can be linked to the state of clothing manufacturing technology at that time, which had not yet reached the current level of advancement, making it difficult to create

clothing that could flexibly follow movements. These developments have not only influenced the competitive world, but have also had a major impact on how gymnastics is taught and integrated into physical education in schools. Professional gymnastics teachers are required to not only understand, but also be able to adapt and implement these latest trends into their curriculum. One of the most prominent trends in modern gymnastics is the emphasis on a functional approach. Functional gymnastics focuses on movements that have direct application in everyday life and other sporting activities. [4]

Floor gymnastics is an important foundation for developing physical fitness components such as flexibility, strength, balance, and coordination, which are prerequisites for mastering more complex movements. From the characteristics and structure of its movements, gymnastics can be said to be a physical activity that is suitable to be used as a physical education tool, because it is considered to be able to contribute to the quality of motor development and physical quality. The characteristics of movement are very important in increasing understanding of the principles of motion mechanics and the laws of nature that work on a moving body. Gymnastics skills are always built on basic skills consisting of: 1) locomotor skills, namely movements from place to place such as walking and jumping; 2) non-locomotor skills, namely movements that do not move from place to place such as bending and 3) manipulative skills, namely manipulating certain objects with body parts: hands, head and feet. [5]. In floor gymnastics material, what students need to master are basic movements. According to Agus Mahendra (2007:9) the development of motor skills refers to the process of mastering a skill or motor task which involves the process of perceiving external stimuli, then the stimuli are processed and programmed until a response occurs in the form of an action that is appropriate to the stimulus. [6]

Gymnastics is a physical activity that involves specific movements with the aim of improving health and fitness. The goal of gymnastics is to increase strength, speed, flexibility, and endurance, as well as burn calories and improve posture. Gymnastics can be done with a variety of movements, such as aerobics. Additionally, gymnastics can be accompanied by music or dance to increase motivation and enjoyment of exercise. Gymnastics is usually done in groups or classes with the help of an experienced trainer or instructor. When performing gymnastics, it is important to pay attention to adequate warm-up and stretching, the type of exercise that suits your body's abilities, and correct body position to avoid injury and obtain optimal benefits.

Among the various basic movements in floor gymnastics, the forward roll is the most essential skill. This movement is not just a physical activity, but a series of movements that require perfect coordination between the body's limbs, courage to roll, and a proper understanding of biomechanics. Mastering the forward roll is an early indicator of a person's motoric readiness. The forward roll is a body movement that rolls forward through the back of the body (nape), hips, waist, and back of the pelvis. Rolling exercises are useful for developing agility and flexibility. Rolling movements should be performed on a soft floor to avoid pain. Rolling exercises usually use a tool called a mat. According to Tilarso (2015), in more detail, the forward roll movement is divided into several phases, starting from a standing position, then lowering the body until it becomes unstable by shifting the body's center of gravity forward or

from both feet to both hands. This is the initial phase of the movement as the initial phase supporting movements 1-3. Starting from the push of both feet, the body's weight is brought to both hands that are supporting or the second phase of the supporting phase of movements 4-5. In the main phase, both hands are bent, the speed of the body's descent begins to decrease until both shoulders touch the mat. Next, the body is rolled forward quickly with the help of the push of both feet and hands, namely movements 6-11. After reaching a stable squat position, it continues to stand upright as the final function phase 12-13. [7]

However, in practice, students often experience difficulties in performing this movement correctly, such as loss of balance, imperfect landings, or even inhibiting fear. This phenomenon raises questions about the level of mastery of this basic skill among PJKR students, especially at the Faculty of Sport Science (FIKK) of Makassar State University (UNM), which is known as one of the leading institutions in the field of sports. Therefore, this study is important to analyze in depth the forward roll ability of PJKR FIKK UNM students. This analysis not only aims to obtain a quantitative picture of their level of mastery, but also to identify aspects of movement that are common weaknesses. The results of this study are expected to provide valid data as a basis for curriculum evaluation and designing more effective training programs. Thus, the quality of PJKR students' practical competencies can be improved, ensuring they become not only knowledgeable educators, but also skilled and confident in teaching basic gymnastics skills to future generations. Based on the description above, the researcher is interested in conducting research on the level of forward roll ability among PJKR FIKK UNM students.

2 Method

This research uses a descriptive quantitative approach with a survey method. However, determining the population and sample size within the context of quantitative and qualitative research is still necessary to gain a comprehensive understanding. The quantitative approach aims to generate generalizations from the sample to the broader population, while the qualitative approach emphasizes in-depth exploration of social phenomena (Creswell, 2014; Neuman, 2014; Sugiono, 2013). These two approaches complement each other in providing a better understanding of a phenomenon. The selection of the right method must be adjusted to the research objectives, research questions, and the nature of the data collected. Population and sample are two fundamental concepts that are at the heart of drawing valid and generalizable conclusions or providing in-depth understanding. Population includes all objects or subjects that are the target of research, while a sample is a part of the population selected to represent the characteristics of the population as a whole (Sugiono, 2013).[8].

The sample of this study consisted of 40 PJKR FIKK UNM students who actively participated in floor gymnastics courses using a purposive sampling technique. Data were collected through observation and assessment using a structured rubric, which included aspects of the initial position, implementation, and final position of the forward roll movement with a scoring scale of 1 to 5. Data obtained from each student, including scores from all three aspects,

were carefully recorded on an assessment sheet. After the data were collected, the next stage was data analysis. The quantitative data obtained were processed using descriptive statistical methods. Calculations of the average value (mean), standard deviation (standard deviation), and percentage were carried out to describe the distribution of students' forward roll abilities as a whole and per assessment aspect. The results of this analysis were then presented in tabular form.

3 Result and Discussion

The results of the study on forward roll ability among PJKR FIKK UNM students yielded the data in the table below.

Table 1. Forward Roll Ability Results among PJKR FIKK UNM Students.

Statistics	Front Roll
Number of Samples (n)	40
Minimum Value	1
Maximum Value	5
Mean	2.95
Standard Deviation	0.986
Variance	0.972

Based on Table 1, data analysis from 40 PJKR FIKK UNM students, their forward roll abilities show varying degrees of variability. Descriptive statistics yielded a minimum score of 1, a maximum score of 5, a mean score of 2.95, a standard deviation of 0.986, and a variance of 0.972. The data were then categorized according to the levels: excellent, good, moderate, poor, and very poor. The following shows the frequency distribution of forward roll ability levels among PJKR FIKK UNM students.

Table 2. Forward roll ability assessment categories for PJKR FIKK UNM students.

No	Intervals	Category	Frequency	Percentage (%)
1	5	Very good	4	10
2	4	Good	5	12.5
3	3	Sufficient	17	42.5
4	2	Poor	13	32.5
5	1	Very poor	1	2.5
amount			40	100

Based on Table 2, data analysis from 40 PJKR FIKK UNM students, the forward roll ability shows a varied distribution and tends towards the lower category. The frequency distribution shows that 4 people (10%) are in the very good category and 5 people (12.5%) are in the good category. However, the majority of the sample is concentrated in the "sufficient" to "very poor" category, with 17 people (42.5%) in the sufficient category, 13 people (32.5%) in the poor category, and 1 person (2.5%) in the very poor category. This finding indicates that although there is a group that has mastered the forward roll skill very well, the majority of students still face significant challenges in mastering this basic movement, especially the forward roll. In this case, there is a significant difference in the level of ability among the sample, with some students having very good movement mastery and others still in the very poor category. These data demonstrate that although the average ability is acceptable, there are still movements that need to be addressed.

A deeper analysis shows that the students' main weaknesses lie in the execution and final stance of the forward roll. This is in line with the motor theory put forward by experts such as Schmidt & Lee (2014) in their book Motor Control and Learning: A Behavioral Emphasis. They argue that mastering a motor skill involves not only cognitive understanding (initial stance), but also neuromuscular coordination and effective sensory feedback during movement execution. In the case of the forward roll, the students' ability to control body momentum, position the nape of the neck correctly, and maintain balance when returning to the squat position are indicators of suboptimal motor control.

The causes of this variation in ability can be attributed to several factors, both physical and psychological. Physically, a lack of core muscle strength, neck and back flexibility, and balance are often the main obstacles. Sports Biomechanics Theory explains that core muscle strength is vital for body stabilization and power transmission during rolling movements. Without adequate strength, students will have difficulty controlling their movements and tend to use their hands as support, resulting in an imperfect final stance. Psychologically, fear of falling or injury can inhibit courage and fluidity of movement, ultimately affecting the quality of execution. This condition is explained in the concept of self-efficacy by Albert Bandura (1997), where a person's belief in their ability to succeed significantly influences their performance.

Thus, the results of this study confirm that improving forward roll ability requires a holistic approach. Relying solely on theoretical understanding is not sufficient. Training programs must be designed to specifically develop core muscle strength, increase flexibility, and improve motor coordination. Furthermore, educators need to consider psychological aspects by creating a supportive learning environment and providing motivation to boost self-confidence. By integrating theories from various disciplines, from biomechanics to sports psychology, learning programs can be more effective in helping students master these fundamental skills, essential for their future careers as physical education teachers.

4 Conclusion

Based on the results of the study, it can be concluded that 4 people (10%) are in the very good category and 5 people (12.5%) are in the good category. However, the sample is mostly displayed in the "sufficient" to "very poor" category, with 17 people (42.5%) in the sufficient category, 13 people (32.5%) in the less category, and 1 person (2.5%) in the very poor category. The forward roll ability of PJKR FIKK UNM students as a whole is in the sufficient category. Although a small number of students showed very good mastery, most of the sample had a level of ability that still needs to be improved.

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