



The Application of Inclined Field Media to The Level of Anxiety In Learning Outcomes of Forward Roll Movements

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ABSTRACT

Forward roll movement is one of the materials that exists in the learning of Physical Education. However, there were many students who did not dare to do forward roll movement because of anxiety. The researchers used inclined field media to help reduce anxiety. The goal of this research is to find out how much the influence of the inclined field media in reducing the level of anxiety of the students. The approach used in this research is quantitative descriptive with a pre-experimental design one group pre-test posttest method. The results of the research showed that the pretest for the level of anxiety had an average score of 83.44, after given treatment the students obtained an average rating of 80.89. From the results of the treatment using the media of the inclined field, the student's anxiety rate decreased by 4% and the learning outcome of the student also improved. The anxiety level of 11th-grade students from SMAN 21 Surabaya, specifically in the IPA 3 class, towards forward roll learning, is included in the medium category. As for the learning outcomes, the pretest scores for the forward roll were an average of 65.28, while after the treatment, students achieved an average score of 76.67. Therefore, students experienced an 18% improvement in learning outcomes.

Keywords: *Anxiety, Forward Roll, Inclined Field*

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INTRODUCTION

The learning activities of Physical Education, Sports, and Health (PESH) certainly involve physical activities. No other subjects are quite similar to PESH, as it plays a crucial role in human development, particularly in the physical aspect. One of the aspects or scopes of PESH is gymnastics. Gymnastics was introduced in Indonesia as one of the many sports. In English, gymnastics refers to "senam" in Bahasa Indonesia, and it originates from the Greek word meaning "naked." The term "gymnastic" is used to signify that physical activity requires one thing: freedom of movement. Thus, being naked or partially naked provides more freedom

for movement. During that time, according to Joko, there was no technology to produce clothing with highly flexible materials as we have today (Joko Riyanto, 2022). During the teaching and learning process of Physical Education, Sports, and Health (PESH), a teacher should be able to instruct various fundamental movement skills, basic techniques, strategies in sports, sportsmanship, teamwork, and so forth. According to Rizki, something inherent in PESH aims to encourage individuals to engage in physical activities, such as various sports disciplines like swimming, football, athletics, and one of the topics to be discussed in this research, which is artistic gymnastics (Rizki Ramadhani, 2014). According to Dewi, artistic gymnastics is one of the materials in Physical Education, Sports, and Health (PESH) learning. Peter H. Werner explains that gymnastics can enhance a person's stamina, flexibility, agility, coordination, strength, and body control (Dewi Irma Ristanti et al., 2019). The body must be moved while in the air and on various equipment, such as balance beams, parallel bars, balance boards, acrobatic floors, and so on. Their bodies must move quickly and return to the center of gravity position (Nunomura & Oliveira, 2017). One type of artistic gymnastics in the Physical Education, Sports, and Health (PESH) curriculum is floor gymnastics. Floor gymnastics includes several movements commonly taught in PESH classes in each school, such as front and back rolls, cartwheels, handstands, and so on. Floor gymnastics movements are performed on the floor, using a mat as a learning aid. Some of the many internal factors that enable students to achieve good learning outcomes in gymnastics teaching and learning activities are motivation and having body flexibility (Prakoso, 2019). One highly familiar floor gymnastics movement in the teaching and learning activities is the front roll. The front roll is one of the topics covered in floor gymnastics instruction. It involves a simple technique and is commonly included in the PESH curriculum in various schools. Rolling movements entail rounding the body according to the stages of the front roll (Ahya Gosporwa Prajatma, 2020).

In floor gymnastics learning, there are several physical components that must be possessed, one of which is isometric strength. The isometric strength component is important because during the movements, many are performed with slow or sustained motions. (Mkaouer et al., 2018). The body's ability to perform a movement as freely as possible in the range of joint motion and relies on the flexibility of muscles, tendons, and ligaments at the joints to induce the necessary movements in artistic gymnastics is called Flexibility (Đorđević et al., 2022). The learning of front roll movements is a gymnastics activity aimed at developing the participants' motor skills. During the implementation of Practical Learning Program (PLP) activities at SMAN 21 Surabaya, where the researcher also conducted observations, the

researcher sought to understand the anxiety of the students during the front roll exercise. In the Physical Education class during the front roll session, the researcher observed that students were hesitant to perform the front roll. One of the students was afraid to execute the front roll, refraining from rolling his body. According to Yaseer S., a teacher at SMAN 21 Surabaya, students experienced anxiety when performing the front roll on a flat surface. The students felt anxious during the front roll exercise due to the fear of injury, as fear itself is one of the factors contributing to anxiety. This fear led to a reluctance to execute the movement, affecting the floor gymnastics learning process, particularly in the front roll exercise. Given the issues mentioned above, there is a need for problem-solving efforts to ensure effective and fear-free learning of the front roll movement. Therefore, the author took the initiative to use an inclined learning medium to help reduce excessive anxiety among students. In a flat surface, executing rolling movements is more challenging due to the significant pressure and the need for more force. On the other hand, in an inclined surface, the rolling movement becomes easier as there is additional support during the roll. An inclined surface, according to Fauzi, is a flat surface with an angle, where one end is higher than the other, and it is considered one type of simple machine (Muhamad Fauzi Antoni, 2019).

METHOD

In this study, a pre-experimental research design with a quantitative approach is employed. Various data collection methods are possible, and this research utilizes methods such as pretests, treatments, posttests, and surveys administered to the students. The research design employed in this study is the One Group Pretest-Posttest Design. The advantage of this research design lies in the implementation of both pretests and posttests, allowing for a precise determination of the differences in outcomes resulting from the given treatment (Maksum, 2018). Population and sample in this study consists of all 11th-grade students at SMAN 21 Surabaya, totaling 359 individuals. For data collection, the author intends to use the cluster random sampling technique. By choosing the cluster random sampling technique, the selected sample is not individual students but rather a group or area referred to as a cluster. In this study, the cluster is the 11th-grade classes, totaling 10 classes. A sample is taken from one class, each class containing approximately 35 students, and the class is randomly selected through a draw. After the draw, XI IPA 3 class was chosen as the research sample. According to Maksum and other experts, it is generally recommended to have a minimum sample size of 30 or to take

10% to 15% of the population size (Maksum, 2018). In this study, there are two variables: the independent variable is Inclined Surface Learning Media, and the dependent variable is the Level of Anxiety in Learning the Front Roll Movement. Research instruments are tools necessary for obtaining or collecting data and measuring the objects of a variable. The measuring tools used in this study are in the form of a questionnaire and a rubric. Procedures in this study involve conducting a pretest for the front roll movement, filling out a pretest anxiety questionnaire, administering the treatment, conducting a posttest for the front roll movement, and finally filling out a posttest anxiety questionnaire. The stages to be carried out during the research are as follows:

- 1) The first step in this study is to administer a pretest for the front roll movement to each student on a flat surface mat.
- 2) After conducting the pretest for the front roll on a flat surface, students are given a pretest anxiety questionnaire.
- 3) Once all students have filled out the pretest anxiety questionnaire, they are given treatment using a modified inclined surface.
- 4) The treatment is administered for two sessions.
- 5) Each student then performs a posttest for the front roll movement on a flat surface mat.
- 6) After completing the posttest for the front roll movement, students are given another posttest anxiety questionnaire.

In this study, the scale used in the questionnaire is the Likert scale. Data analysis in this research involves descriptive analysis, normality test, and independent sample t-test. To explain the data analysis process, categorization is conducted by summing up the Mean (average) and SD (Standard Deviation).

RESULTS AND DISCUSSION

Result

Based on the results of the previous research that has been conducted, every data has been calculated and obtained results. Does the implementation of the inclined surface have an effect on the level of anxiety among students in learning the front roll movement? After the completion of the study to determine the level of anxiety and learning outcomes of the students, the results of the mean and standard deviation values have been determined through SPSS 26 calculations, as follows: [Results to be provided based on the actual findings from the SPSS

analysis]:

Table 1. Descriptive Anxiety Level

<i>Pretest</i>		<i>Posttest</i>	
Min	Max	Min	Max.
68	98	60	97
Standard Deviation			
<i>Pretest</i>		<i>Posttest</i>	
7.850		8.776	
Mean			
<i>Pretest</i>		<i>Posttest</i>	
83.44		80.89	
Median			
<i>Pretest</i>		<i>Posttest</i>	
83.00		81.50	
3004		2912	

Table 2. Descriptive Learning Outcomes

<i>Mean</i>		<i>Standard Deviation</i>	
<i>Pretest</i>	<i>Posttest</i>	<i>Pretest</i>	<i>Posttest</i>
65,28	76,67	14,240	13,093
<i>Min</i>		<i>Max</i>	
<i>Pretest</i>	<i>Posttest</i>	<i>Pretest</i>	<i>Posttest</i>
40	50	90	100

Based on the research results that have been presented, which analyze the anxiety level of students regarding the application of inclined surfaces in the front roll movement in floor gymnastics at SMAN 21 Surabaya, it is known that the research results indicate a "moderate" category. Furthermore, from the above results, data was obtained for four aspects: psychological, cognitive, somatic, and motor aspects. For clarity, the table below can be referred to:

Tabel 3. Statistics of Questionnaire Results for Each Aspect

<i>Pretest</i>			<i>Posttest</i>		
<i>Mean</i>	<i>SD</i>	<i>Sum</i>	<i>Mean</i>	<i>SD</i>	<i>Sum</i>
Psikologis					
32,83	3,393	1182	31,22	3,818	1124
Cognitive					
32,86	3,091	1183	32,14	3,697	1157
Motoric					
34,00	2,530	1224	32,78	3,199	1180
Somatic					
33,50	2,830	1206	33,06	2,756	1190

According to the formula, data is categorized based on the mean (average) and standard deviation (SD) values, which will be determined into 5 categories: very high, high, moderate, low, and very low. The distribution of anxiety levels among students of class XI IPA 3 from SMAN 21 Surabaya in performing the front roll movement in floor gymnastics is as follows: [Results of the anxiety level distribution will be provided based on the mean and standard deviation values obtained from the data analysis using the formula and SPSS]:

Tabel 4. Frequency Distribution of Students' Anxiety Levels in the Pretest

No	Interval	Category	Frequency	Frequency Relative
1	More than 95,21	Very High	4	11%
2	87,36 – 95,20	High	8	22%
3	79,51 – 87,35	Medium	14	40%
4	71,66 – 79,50	Low	7	19%
5	Less than 71,65	Very Low	3	8%
Total			36	100 %

Table 5. Frequency Distribution of Students' Anxiety Levels in the Posttest

No	Interval	Category	Frequency	Frequency Relative
1	More Than 95,21	Very High	3	8%
2	87,36 – 95,20	High	7	19%
3	79,51 – 87,35	Mediun	13	36%
4	71,66 – 79,50	Low	8	22%
5	Less than 71,65	Very Low	5	15%
Total			36	100 %

Furthermore, the results of the normality test for the anxiety questionnaire and the front roll learning outcomes of the students show values exceeding 0.05, indicating normal distribution. The following is the table of results from the normality test calculation using SPSS 26:

Table 6. Results of Normality Test

Normality Test			
Angket		Hasil Belajar	
<i>Pretest</i>	<i>Posttest</i>	<i>Pretest</i>	<i>Posttest</i>
0,800	0,860	0,52	0,53

The results of the independent-samples t-test on the anxiety questionnaire and learning outcomes show a significance value of 0.000 at sig (2-tailed), indicating a significant difference between the pretest and posttest after the treatment was administered to the students. The following is the table of results from the independent-samples t-test:

Table 7. Results of Independent Samples t-test

Angket	Hasil Belajar
0,000	0,000
Have differences	
<i>Sig (2-tailed)</i>	

Based on the research results, the anxiety level of 11th-grade students at SMAN 21 Surabaya regarding the learning outcomes of the front roll movement in floor gymnastics falls into the "moderate" category. This can be seen in Diagram below, which indicates that the research results show a decrease in the anxiety level of students. During the pretest, students had an average score of 83.44, and after the treatment and posttest, the average score was 80.89. This signifies a decrease in the anxiety level by 3.1%.

Discussion

Severe anxiety has a significant impact on how individuals perceive things, often focusing attention on very detailed, specific aspects, and experiencing difficulty thinking about other matters. All behaviors that manifest aim to alleviate tension levels. At this level, individuals may experience physical symptoms such as dizziness, nausea, trembling, frequent urination and bowel movements, as well as diarrhea. Emotionally, individuals feel fear, and their entire focus is centered on themselves. Previous research conducted by Muhammad Fauzi showed that the anxiety level of students decreased by 30.99% in floor gymnastics learning with back roll material. Meanwhile, in the present study, the anxiety level of students during the front roll decreased by 3%. Based on the results of the previous research, the inclined surface has an impact on the learning outcomes of students. This is supported by a study conducted by Muhammad Fauzi Antoni titled "The Influence of the Use of Inclined Surface Learning Media on the Learning Outcomes of Backward Rolls and Anxiety Levels (A Study on Grade X Students at SMAN 7 Surabaya)", which found that the implementation of the inclined surface in learning backward rolls increased learning outcomes by 92.71%. Based on Diagram 4.4, it can be seen that after the treatment on students, the learning outcomes of students in the front roll increased by 17%. This proves that the application of the inclined surface in the front roll has a positive impact on students in the learning process.

Based on the research results, the anxiety level of 11th-grade students at SMAN 21 Surabaya regarding the learning outcomes of the front roll movement in floor gymnastics falls into the "moderate" category. It can be observed that the research results indicate a reduction in the anxiety level of students. During the pretest, students had an average score of 83.44, and after the treatment and posttest, the average score was 80.89. This signifies a decrease in the anxiety level by 3.1%. In terms of specific aspects, improvements were observed in psychological, cognitive, somatic, and motor aspects. The highest improvements were noted in the psychological and motor aspects, with an increase of 5.1% in psychological aspects and 3.7% in motor aspects.

CONCLUSION

The results of the research and discussion will be outlined based on the background, theoretical review, and the research findings explained earlier. This can be observed from the

research results after conducting treatment on the students, which indicate that 3 students (8%) fall into the "very high" category, 7 students (19%) in the "high" category, 13 students (36%) in the "moderate" category, 8 students (22%) in the "low" category, and 5 students (15%) have anxiety levels categorized as "very low." The most frequent frequency is found in students with a "moderate" anxiety level, specifically 13 students (36%).

Based on the outlined research results, it is evident that the anxiety level of 11th-grade students at SMAN 21 Surabaya in class XI IPA 3 towards learning the front roll in floor gymnastics falls into the "moderate" category. As for the learning outcomes of the students, there is an improvement of 18%. It can be concluded that the inclined surface has an impact on students, as it is able to reduce anxiety.

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REFERENCES

- Ahya Gosporwa Prajatma. (2020). Kecemasan Siswa Kelas X Terhadap Pembelajaran Senam Lantai Guling Depan Di Sma Muhammadiyah 3 Yogyakarta. *Kaos GL Dergisi*, 8(75), 147–154.
<https://doi.org/10.1016/j.jnc.2020.125798>
<https://doi.org/10.1016/j.smr.2020.02.002>
<http://www.ncbi.nlm.nih.gov/pubmed/810049>
<http://doi.wiley.com/10.1002/anie.197505391>
<http://www.sciencedirect.com/science/article/pii/B9780857090409500205>
Ahttp:
- Dewi Irma Ristanti, Wawan Setiawan, & Donny Setiawan. (2019). Pengaruh Pembelajaran Menggunakan Media Hullahop Terhadap Peningkatan Hasil Belajar Senam Lantai Pada Siswa Kelas VIII Di SMP Negeri 1 Pakusari. *Jurnal Kejaora (Kesehatan Jasmani Dan Olahraga)*, 4(1), 16–20. <https://doi.org/10.36526/kejaora.v4i1.617>
- Đorđević, D., Paunović, M., Ćular, D., Vlahović, T., Franić, M., Sajković, D., Petrović, T., & Sporiš, G. (2022). Whole-Body Vibration Effects on Flexibility in Artistic Gymnastics—A Systematic Review. *Medicina (Lithuania)*, 58(5), 1–12.
<https://doi.org/10.3390/medicina58050595>

- Joko Riyanto. (2022). Peningkatan Hasil Belajar Senam Lantai Guling Depan Melalui Alat Bantu Siswa Kelas Iv Semester Ii Sdn 1 Ngampelkulon Kecamatan Ngampel Kabupaten Kendal Tahun Pelajaran 2015/2016. *Dwihaloka Jurnal Pendidikan Dasar & Menengah*, 3(2), 262–273.
- Maksum. (2018). Metodologi Penelitian Dalam Olahraga. *Jawa Barat: CV Jejak*, 298.
- Mkaouer, A. B., Hammoudi-nassib, S., Amara, S., & Chaabène, H. (2018). *Evaluating the physical and basic gymnastics skills assessment for talent identification in men ' s artistic gymnastics proposed by the International Gymnastics Federation*. 20–26.
- Muhamad Fauzi Antoni, S. (2019). *Pengaruh Penggunaan Media Pembelajaran Bidang Miring Terhadap Hasil Belajar Guling Belakang Dan Tingkat Kecemasan*. <https://jurnalmahasiswa.unesa.ac.id/index.php/jurnal-pendidikan-jasmani/issue/archive>
- Nunomura, M., & Oliveira, M. S. (2017). Science of Gymnastics. *Science*, 9(1), 5–17.
- Prakoso, S. A. (2019). Hubungan Motivasi Dan Fleksibilitas Terhadap Hasil Belajar Guling Depan. *Carbohydrate Polymers*, 6(1), 5–10.
- Rizki Ramadhani. (2014). *Upaya Meningkatkan Hasil Belajar Sikap Lilin Dalam Pembelajaran Senam Lantai Melalui Bantuan Teman Pada Siswa Kelas Vii Smpswasta Kartika I.1 Medan Tahun Ajaran 2013/2014*. 1–23.