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The F2R1 Model for Enhancing Forward Roll Learning in Eighth Grade Students

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Abstract

The aim of this study is to develop and evaluate the effectiveness of the Fikri Forward Roll 1 (F2R1) Model in enhancing forward roll learning among eighth-grade students. This model was developed using the ADDIE (Analysis, Design, Development, Implementation, and Evaluation) instructional design approach. The research subjects consisted of eighth-grade students, with a small-scale trial involving 60 students from SMPN 01 Belitang and a large-scale trial involving 100 students from SMPN 02 and SMPN 03 Belitang. The product validation test was conducted by three experts: one instructional media expert, one movement learning expert, and one Physical Education, Sports, and Health (PJOK) practitioner. Data analysis employed the Content Validity Index (CVI) and Content Validity Ratio (CVR), yielding a CVI score of 3.77 and a CVR score of 0.15. These results indicate that the F2R1 Model is valid and suitable for use as a learning tool for forward rolls. Based on the findings, the F2R1 Model positively contributes to students' understanding and skills in performing forward rolls. Therefore, this model is recommended for educators to enhance movement learning at the junior high school level.

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INTRODUCTION

Human motor development is both a process through which we pass during the course of life and an academic field of study. As a human process, motor development refers to the changes that occur in our ability to move and our movement in general as we proceed through the lifespan (Payne & Isaacs, 2020). Children's physical and motor development significantly influences their daily lives (Sa'diyah,dkk.2023). Physical Education is a core subject that must be implemented in every school and attended by all students(Sari et al., 2024). It is taught across all educational levels due to its significant role in developing students' skills to maintain their well-being independently (Hasanah & Rodiah, 2021).

Physical Education, Sports, and Health (PJOK) play a crucial role in national development, particularly in advancing knowledge and technology in the fields of physical well-being, health, and recreation. To achieve optimal fitness and health, individuals must engage in regular physical activity and sports. Physical education is closely related to behavioral changes, especially in strategic aspects that contribute to the development of affective and psychomotor domains, ultimately serving as measurable benchmarks for individual growth, both physically (visibly) and psychologically (non-visibly) (Hadjarati & Haryanto, 2020). Physical education can be an effective tool for improving both mental and physical health (Pratama et al., 2024).

Physical education is a structured physical activity integrated into the curriculum, serving as a medium for the educational process that develops three key domains: the cognitive domain, which includes reasoning, knowledge, and critical thinking; the affective domain, which encompasses positive attitudes, spiritual values, and social behavior; and the psychomotor domain, which focuses on physical skills and movement proficiency(Slamet et al., 2023).

The role of physical education is crucial in providing students with opportunities to engage directly in various learning experiences through systematically structured physical activities. These learning experiences are designed to cultivate and develop a lifelong commitment to a healthy and active lifestyle (sudarsinah, 2021). One of the key aspects of physical education is gymnastics. Floor gymnastics is a branch of gymnastics, referred to as "floor excercise" because the movements are performed on a mat. (Riyanto, 2022).

Floor excercise is one of the learning materials taught in eighth-grade junior high school physical education**.** The purpose of learning floor gymnastics is to develop motor skills, balance, flexibility, and body coordination optimally. Additionally, it helps cultivate courage, discipline, and self-confidence in performing movements that require precise techniques and body control (Dasar et al., 2023).

Gymnastics is considered a fundamental activity that engages all parts of the body and develops various motor components, such as strength, speed, balance, flexibility, agility, and precision. One example of floor gymnastics movements is the execution of forward and backward rolls (Dewi Irma Ristanti et al., 2019).

The latest techniques in floor excercise include the use of ergonomic equipment such as mats, more complex and dynamic movement variations, and the integration of breathing exercises and meditation to strengthen the connection between body and mind (Amanda & Bahfen, 2024). By mastering floor

gymnastics, students can improve their physical fitness and build a strong foundation for the development of other movement skills in various sports activities. Teaching and learning activities are a process of communication (Junanda & Solihin, 2020). Media is a medium that can be used in the transfer of knowledge. (Suhairi et al., 2022). Learning media plays a strategic role in the learning process. Through a teacher's creativity, learning media can evolve into something engaging and motivating, encouraging students to be more active and enthusiastic in following lessons.(Sihab et al., 2023). Ideally, the success of physical education learning is closely linked to the teacher's role in instruction. The development and use of innovative media significantly impact the quality of physical education teaching in schools. (Santoso, 2019).

The results of field observations (Researcher, 2024) on the floor gymnastics material, specifically the forward roll movement for eighth-grade students, are as follows: (1) Fear of performing the movement**,** with concerns about personal safety, which hinders students' confidence in practicing the forward roll; (2) Technique errors, such as incorrect hand and neck placements, often leading to injuries like neck strains and pain during landing, particularly among students who are hesitant when lowering their bodies; and (3) Inaccurate movement direction and control**,** where many students struggle to control the direction of their forward rolls, with most rolling sideways rather than straight ahead, affecting the effectiveness of the learning process for this movement.

PJOK teachers must be able to address shortcomings in the teaching and learning process by applying creative, innovative, and enjoyable game models that align with the characteristics and needs of students, thereby improving their learning outcomes.(Amar, F. Andi., Nukrawi, 2023). The purpose of developing a learning model for the forward roll gymnastics material is to enhance students' basic technical skills in performing the forward roll correctly and safely. Additionally, it aims to improve learning outcomes in physical education, specifically in floor gymnastics, using the cooperative learning model of the Jigsaw type (Irham et al., 2024). Teaching strategies are a crucial factor in achieving good learning outcomes, as the success of the learning process can be influenced by the games-based teaching strategies employed.(Istiqomah et al., 2019). The success of the teaching and learning process in physical education can be measured by the achievement of students participating in the activities. This success is reflected in their level of understanding, mastery of the material, and learning outcomes (Prasetyo & Sunarti, 2016).

The developed learning model is a modified movement learning model aimed at improving the forward roll skills in PJOK. Additionally, this model aims to minimize fear and injury risks by providing a more effective and engaging learning approach. With the implementation of this appropriate model, it is expected that students will enhance their self-confidence, coordination, and understanding of the forward roll movement in floor excercise, as designed and developed by the researcher. (Khoirunisa, Bunga., Anting Dien G, n.d.) Related to the background of the problem, the researcher formulates the research problem as follows: "Can the F2R1 model improve the forward roll learning outcomes of eighth-grade students?". With the implementation of the F2R1 model, it is expected to enrich teachers' knowledge in applying new variations to prevent monotonous teaching and help

students engage actively, with a sense of enjoyment and confidence, thereby achieving the desired learning objectives.

Model F2R1

The F2R1 model is a form of play-based learning that includes movements and equipment for play, led by a teacher. The purpose of the F2R1 model is specifically designed to improve forward roll learning. It is a game-based model intended for eighth-grade students to practice the forward roll movement using equipment such as rings, cones, mats, and balls.

Through play, students will be actively involved in physical activities and improve their participation. Learning that incorporates media content can stimulate students' intellectual engagement (Yulianti & Ekohariani, 2020). Game-based learning is effective in enhancing students' intrinsic motivation through elements such as challenges and rewards.(Sappile et al., 2024).

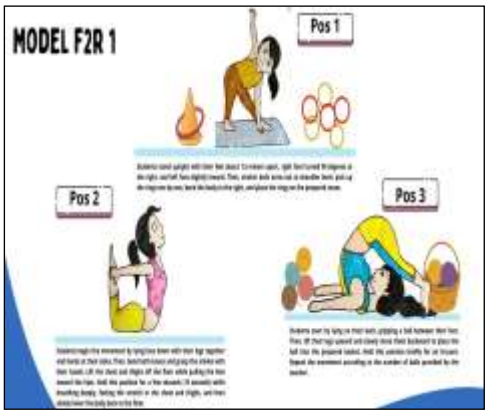

Fig.1
Model F2R1 (Researcher, 2024)

Engaging in movements through play provides enjoyment and helps develop manipulative movement skills. The movements in gymnastics presented in the form of games are highly beneficial for improving body flexibility, which is an essential aspect of human life and well-being.(Elmuna et al., 2024).

Product Specifications

The developed F2R1 model consists of 3 stations that students must perform.

(1) **Station 1**: The movement starts in an upright position with legs spread 1.5 meters apart. The right foot rotates 90 degrees to the right and left, with the goal of transferring the ring into the cone.
(2) **Station 2**: The student lies face down with legs together and arms by the sides of the body. The ankle is lifted with the hands holding it in position for 15 seconds.
(3) **Station 3**: The student lies on their back, squeezing a ball with their feet, lifting it upward, and then moving it backward to place the ball into a basket.

The F2R1 model was validated by 4 experts based on the following criteria:
(1) **Safety** (materials used, procedures, and equipment usage standards, suitability for student characteristics),
(2) **Cost/Price** (production cost and ease of making the equipment),
(3) **Suitability** (functionality and usefulness of the equipment for the users).

METHOD

This research uses a Research and Development (R&D) approach with the ADDIE model. This model was chosen because it is widely used, as the stages in the ADDIE model represent a systematic approach for instructional development (Mie et al., 2018). The ADDIE model is an excellent choice for development as it is one of the key factors in creating a model that can be easily applied,

effective, and beneficial for users. The ADDIE model consists of five development stages: (1) Analyze, (2) Design, (3) Develop, (4) Implementation, and (5) Evaluate. The study participants were eighth-grade students. A small-scale trial was carried out with 60 students from SMPN 01 Belitang, while a large-scale trial involved 100 students from SMPN 02 and SMPN 03 Belitang. The product validation was assessed by three experts: an instructional media specialist, a movement learning expert, and a practitioner in PJOK.

RESULT

The research product, which is the Fikri Forward Roll 1 (F2R1) forward roll learning model, was evaluated by experts using an assessment rubric. The evaluation results were then analyzed using the Content Validity Index (CVI) and Content Validity Ratio (CVR) tests. Based on the analysis using the CVI and CVR (table 1), the F2R1 model received an average score of 0.85, indicating high validity. This means that the F2R1 model is considered safe for use and has the potential to effectively enhance the learning of front rolls for eighth-grade students.

Tabel 1.
CVI and CVR Test Results by Experts

No.	E1	E2	E3	E4	ne	N/2	ne-(N/2)	CVR	C
1	4	3	4	4	4	4	2	2	1	V
2	4	4	4	4	4	4	2	2	1	V
3	4	3	4	4	4	4	2	2	1	V
4	4	4	3	4	3	4	2	1	0.5	V
5	4	4	4	4	3	4	2	1	0.5	V
6	4	3	4	4	4	4	2	1	1	V
7	4	4	4	3	4	4	2	2	1	V
8	4	4	4	3	3	4	2	1	0.5	V
9	3	4	4	4	4	4	2	2	1	V
10	4	4	4	4	4	4	2	2	1	V
Total	39	37	39	38		Total		8.5		
Mean	3.9	3.7	3.9	3.8		Mean		0.85	Valid	
Means	3.82									

The F2R1 Model at these three stations engage various anatomical and biomotor aspects that contribute to students' motor skill development. Station 1, emphasizes dynamic balance, agility, and coordination through foot rotations and ring transfers, primarily involving the gluteus, quadriceps, and gastrocnemius muscles. Station 2, focuses on flexibility in the thighs and ankles, as well as static balance, requiring students to hold a position for 15 seconds, with key involvement of the hamstrings, gastrocnemius, and quadriceps. Station 3, highlights core muscle strength and coordination through a ball-lifting movement using the feet, directing it toward a target. This activity engages the abdominal muscles, iliopsoas, and adductor longus for movement control. Overall, these exercises enhance balance, flexibility, core strength, and body coordination, which are essential components of both fundamental and advanced motor skills for students.

DISCUSSION

The forward roll in floor gymnastics is a movement that involves rolling forward while coordinating various anatomical systems, including the skeletal, muscular, and joint systems. The spine acts as the main axis of movement, while the arms and legs help support and maintain balance. Flexibility in the neck, shoulder, elbow, hip, knee, and ankle joints is crucial for smooth execution and injury prevention.

This movement also requires the coordination of multiple muscle groups, such as the neck muscles for tucking the head, core and back muscles for balance, and arm and leg muscles for support and propulsion. To perform a forward roll safely and effectively, eighth-grade students need to understand their body's

mechanics, improve flexibility, and strengthen their core muscles for better movement control.

The F2R1 model for eighth-grade students integrates media and movements designed with anatomical and physiological analysis of the front roll motion, aimed at stimulating the developmental aspects of students. The movements target strengthening and improving flexibility in key areas such as the waist, abdomen, and neck, which are crucial for executing the front roll effectively. The tools and media used in the model are designed to motivate students to repeatedly practice the movement. In addition to the repetition of the movements, the development of self-confidence and body flexibility also play a significant role in performing the front roll correctly and safely (Olahraga et al., 2023).

CONCLUSION

Play holds significant value in the development of children's daily life, as it allows them to develop their imagination, creativity, and fantasy. Through play, children experience joy and satisfaction, while also gaining important skills such as socialization, learning, emotional expression, and the development of moral, physical, and personality traits.

The F2R1 model can be effectively used by teachers in teaching the front roll to enhance students' basic manipulative movement skills. The F2R1 model developed for improving these fundamental skills is suitable for use in front roll instruction.

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