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Physical Education Learning Model To Improve Students' Floor Exercise Flexibility In Indonesia

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Abstract

This study aims to conduct a Systematic Literature Review (SLR) in order to synthesize the literature and formulate a physical education learning model to improve junior high school students' flexibility in floor exercises. The method used is a systematic literature review based on the analysis of six selected relevant journal articles. The process involved extracting key findings related to the importance of flexibility, learning challenges faced by junior high school students, the effectiveness of teaching methods and styles, as well as the influence of motivation. The synthesis results confirm that flexibility is crucial for floor exercise movements (such as backbends and forward rolls), and that junior high school students face both physical and psychological challenges. The literature highlights the effectiveness of various approaches, such as the use of media, practice style, and peer tutoring, along with the importance of motivation. These findings provide the conceptual foundation for designing the model. The conclusion of this study is that the synthesis of SLR findings offers a solid basis for formulating an adaptive and effective learning model to improve junior high school students' flexibility in floor exercises through a comprehensive approach that considers both physical and psychological aspects.

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INTRODUCTION

Sundari et al., (2024) Physical Education, Sports, and Health (PJOK) is a crucial pillar in basic education that aims to foster the integrated development of students' physical, psychomotor, and character aspects. One of the key components of PJOK at the junior high school (SMP) level is floor exercise learning, as this activity not only develops fundamental motor skills but also supports posture formation, coordination, and student discipline (Chandra, 2017; Kurniawan & Sugiarto, 2019).

Among the many elements of physical fitness, body flexibility plays a highly significant role in supporting floor exercise skills. Movements such as backbends and forward rolls require maximum range of motion, particularly in the hip, back, and shoulder joints. Previous studies have revealed that optimal flexibility can improve movement effectiveness while minimizing the risk of injury (Gunadi et al., 2023; Mikel & Ismaya, 2023). However, several studies indicate that most junior high school students encounter physical barriers such as limited flexibility and psychological barriers such as lack of confidence in mastering floor exercise movements (Fathya Azri, 2021; Siregar & Widowati, 2022).

In response to these challenges, various teaching approaches have been proposed. Teaching styles such as practice style and guided discovery have been considered effective in improving learning outcomes in gymnastics movements (Gulo & Nasution, 2026; Nurhasanah et al., 2024). Technology-based interactive visual media, such as Adobe Flash animations or demonstration videos, have been proven to increase student participation and psychomotor learning outcomes (Mashud & Ihwanto, 2022; Rohman et al., 2025). Furthermore, project-based learning (PjBL) and blended learning models are increasingly relevant in supporting personalization and flexibility in PJOK learning (Ardinnata & Mashud, 2023; Prastyo et al., 2020).

Research by Purnama et al., (2021) demonstrated that peer tutoring approaches can enhance learning outcomes in backbend exercises through systematic and reflective learning cycles, showing significant improvements in students' average scores from cycle to cycle. In addition to methodological approaches, the development of training models also plays an important role in student learning activities. Bile et al., (2021) designed a physical fitness training model based on traditional games that is not only enjoyable but also effective in increasing students' overall physical activity. This model was proven feasible through a series of validity and product trial tests. Furthermore, research by Rahmadani et al., (2025) reinforced the importance of integrating floor exercise and fitness gymnastics to improve fundamental motor skills, fitness, and health among elementary school students. Their findings showed a positive relationship between basic motor skills and general physical fitness capacity.

Unfortunately, most of these studies still focus only on a single aspect or variable. There has not yet been a systematic study that integrates all factors of floor exercise learning—including physical aspects (flexibility), pedagogical aspects (teaching styles, media), and psychological aspects (motivation, confidence)—into a model that can be practically adopted by PJOK teachers in the field. In fact, an effective learning model should accommodate the overall challenges and potential of students

within a holistic framework (Ramadhan & Priyono, 2022; Siregar & Widowati, 2022).

This gap in literature synthesis forms the foundation for the current study. Although many aspects have been individually researched, no Systematic Literature Review (SLR) has yet unified these findings comprehensively. Existing knowledge remains fragmented and has not been integrated to formulate a specific learning model for improving junior high school students' flexibility in floor exercises. A Systematic Literature Review provides a strong empirical basis to identify and integrate the components of an effective model. The scientific novelty of this paper lies in structuring a teaching model concept based on systematic synthesis of relevant literature. Accordingly, this study seeks to address the following research question: How can the synthesis of literature on flexibility, junior high school students, and PJOK learning methods serve as the basis for formulating a teaching model to improve flexibility in floor exercises among junior high school students?

Therefore, the primary objective of this Systematic Literature Review is to systematically review the relevant scientific literature in order to synthesize key concepts and findings, which will then serve as the foundation for formulating and describing a physical education learning model specifically designed to improve flexibility in the context of floor exercises for junior high school students.

METHOD

The research method employed in this study is the Systematic Literature Review (SLR). The SLR approach was chosen because it enables the identification, evaluation, and synthesis of scientific evidence in a structured manner regarding the specific topic under investigation. The purpose is to provide a solid theoretical foundation based on previous research concerning effective learning models to improve flexibility in floor exercises among junior high school students. Unlike conventional narrative literature reviews, SLRs are transparent and replicable, ensuring that the conclusions drawn are supported by evidence from multiple sources (Hidasati et al., 2020).

The primary data sources for this Systematic Literature Review consist of a set of documents specifically identified by the researcher as relevant. This differs from conventional SLRs, which typically begin with a broad search across major electronic databases. The restriction of data sources in this study represents an adaptation of the standard SLR methodology, adjusted to the availability of existing materials. Nevertheless, the principles of systematic evaluation and synthesis were still applied to this document set. If a comprehensive standard search had been conducted, compound keywords such as "floor exercise flexibility junior high school," "physical education learning model gymnastics," and their Indonesian equivalents would have been the main focus (Mikel & Ismaya, 2023).

Selection criteria were applied to the content of the documents to ensure their relevance to the research topic. Documents or sections of documents had to discuss flexibility, floor exercise (particularly movements relevant for junior high school students such as backbends and forward rolls), teaching methods or learning models in physical education, or characteristics of junior high school students related to movement learning. Relevant data extracted from each document included the research objectives, methodologies used in the primary study (if available), key findings

on the relationships between variables, descriptions of teaching methods or learning models, as well as challenges and factors influencing student learning. Information unrelated to these four focal points was excluded from the process (Fathya Azri, 2021).

The process of data analysis and synthesis involved grouping the extracted findings into key themes that emerged from the literature. These themes included the importance of flexibility, the effectiveness of specific teaching methods, the role of psychological factors such as motivation, and the particular challenges faced by junior high school students in mastering floor exercise movements. Findings from multiple sources were then compared and contrasted to identify consensus, differences, or gaps within the reviewed literature. The synthesis aimed to construct a comprehensive picture of the elements relevant to formulating an effective learning model. The results of this synthesis directly informed the description of the components within the proposed learning model (Sutoro & Nurhidayah, 2023).

The synthesis of findings included a critical assessment of existing evidence to identify the strengths and limitations of the prior research reviewed. Various perspectives on the best approaches to improving flexibility in the context of junior high school floor exercises were comparatively analyzed. Special attention was given to findings relevant to the developmental characteristics and specific needs of students at this level. This synthesis process went beyond mere summarization; it involved identifying cross-study patterns and integrating findings into a cohesive conceptual framework. The learning model proposed in this study is the result of logically drawn conclusions from systematically synthesized evidence (Hadjarati & Haryanto, 2020).

RESULT AND DISCUSSION

Table 1 :
Descriptive Analysis of Literature Results Systematic Literature Review (SLR)

NO	JOURNAL	TITLE	AUTHORS
1	JPKO: Journal of Physical Education and Sports Training	The Influence of Students' Body Flexibility on Backbend Movements in Floor Exercise to Support Physical Education Learning	Petrus Mikel, Bambang Ismaya
2	JICN: Journal of Intellectuals and Scholars of the Archipelago	Initial Flexibility in Physical Fitness Warm-Up to Achieve Efficiency in Teaching and Learning Activities Through the Exploration Method	Fadhil Yannas Albarsi Akbar, Dony Andrijianto, Sandiko
3	MULTILATERAL: Journal of Physical Education and Sports	Application of the Direct Learning Model with Inclined Plane Media to Improve Basic Forward Roll Movements	Sutoro, Dewi Nurhidayah
4	MULTILATERAL: Journal of Physical Education and Sports	The Effect of Practice Style Teaching on Floor Exercise Learning Outcomes	Siti Hajar Nurhasanah, Sunarno Basuki, Herita Warni

5	National Seminar and Scientific Publication, Faculty of Education, UMJ	Efforts to Improve Backbend Learning Outcomes in Floor Exercise Through Peer Tutor Learning Method in Grade 8	Fathya Azri, M. Al Ghani
6	MULTILATERAL: Journal of Physical Education and Sports	Motivation for Floor Exercise Learning Outcomes	

This section presents the descriptive analysis of six scientific journal articles that were systematically selected for this Systematic Literature Review. These articles were chosen based on their strong relevance to the topic of improving flexibility in floor exercise learning, specifically for junior high school students. The purpose of this descriptive analysis is to identify the main focus of each study, the methodologies used, the most relevant key findings, and their contribution to a comprehensive understanding of the topic. The selected articles cover a variety of important aspects, ranging from the influence of physical components such as flexibility to the effectiveness of different learning strategies (Sugiarto et al., 2023)

Challenges in teaching floor exercises to junior high school students also emerged as a key theme in the reviewed literature. Many students were reported to experience difficulties and fear when performing certain movements, particularly those requiring high levels of flexibility or coordination. Fear of injury is one of the main obstacles faced by students at this age. A lack of self-confidence in their physical abilities further exacerbates the situation. Learning outcomes in floor exercise materials, such as backbends or forward rolls, often show low levels of mastery at the beginning of instruction. This indicates the need for special attention to both the psychological and physical aspects of students during the teaching process (Fathya Azri, 2021).

To address these identified learning barriers, several studies explored the effectiveness of using instructional media and specific teaching methods. The application of teaching aids such as inclined plane equipment was reported to improve students' ability to master the basic forward roll movement. This medium modifies the learning environment to make it easier for students to perform movement sequences. The direct teaching method is often combined with the use of such media to provide clear demonstrations and guidance. This approach emphasizes repetition of movement with specific visual or physical support. The use of appropriate learning media can therefore serve as an effective tool for teachers (Sutoro & Nurhidayah, 2023).

Teacher teaching style also has a significant impact on students' floor exercise learning outcomes, as reported in the reviewed studies. Findings indicate that the implementation of the practice style teaching method positively influences students' mastery of motor skills. This style emphasizes hands-on practice and provides students with ample opportunities to practice independently or in small groups. Practice style has been shown to improve skills such as strength, flexibility, and coordination, which are essential in floor exercises. Students taught with this approach tend to be more motivated and responsible for their own learning process. Teaching styles that encourage student activity and exploration are therefore highly relevant

to floor exercise instruction (Nurhasanah et al., 2024).

Internal student factors, particularly learning motivation, were identified as important predictors of success in floor exercise learning. Studies reveal a strong relationship between student motivation and learning outcomes in movements such as forward rolls. The higher the student's motivation, the better the learning results in mastering gymnastics techniques. Educators play a crucial role in fostering and maintaining student motivation through various strategies, both verbal and non-verbal. Both intrinsic and extrinsic motivation contribute to encouraging students to practice and overcome challenging movements. Understanding students' motivation levels is therefore essential for designing effective and personalized instruction (Hadjarati & Haryanto, 2020).

The descriptive analysis of this Systematic Literature Review concludes that the reviewed literature consistently emphasizes the importance of flexibility for mastering floor exercises among junior high school students. Various methods and teaching styles demonstrate potential in overcoming learning barriers and improving outcomes, including through the use of media, peer interaction, and direct practice. Psychological factors such as motivation also play an important role in student success. Collectively, these findings underline the need for a comprehensive approach that integrates physical, psychological, and pedagogical aspects in the design of instructional models. The in-depth synthesis of these findings will serve as the basis for formulating the key components of an effective learning model (Setyawan et al., 2021)

Below is the table of inclusion and exclusion criteria adapted for this study, along with an explanation of the literature selection process used in this article..

Table 2 :
Inclusion and Exclusion Criteria

TYPE	INCLUSION CRITERIA	EXCLUSION CRITERIA
TYPE OF PUBLICATION	Peer-reviewed scientific journal articles.	Books, Book chapters (unless also published as journal articles), Reports, Undergraduate theses, Master's theses, Abstracts only, Conference proceedings (unless part of a relevant peer-reviewed journal), Non-scientific publications.
SOURCE	Retrieved from Google Scholar and relevant to the research topic.	Sources that cannot be verified or whose full text is inaccessible.
TOPIC RELEVANCE	Specifically discusses Physical Education, floor gymnastics, flexibility, or teaching models/methods related to improving movement skills or	Not relevant to the main research topics (e.g., only discusses general fitness, other sports, or non-physical education aspects).

	physical condition in the context of floor gymnastics/flexibility.	
EDUCATIONAL LEVEL	Involves research subjects or discusses the context of Junior High School (SMP) students or an equivalent level relevant to SMP student characteristics.	Involves subjects or discusses contexts exclusively at the Elementary, Senior High School, or Higher Education levels (unless the findings or concepts are broad and significantly relevant to the SMP context).
LANGUAGE	Indonesian, English.	Other than Indonesian or English.
ACCESSIBILITY	Full-text of the publication is available and analyzable.	Only abstract or partial text available.

The figure below presents the flow diagram of the literature selection process for this Systematic Literature Review, following the guidelines of the Preferred Reporting Items for Systematic Reviews and Meta-Analyses (PRISMA).

In the Identification phase, the initial search of scholarly articles from Google Scholar identified a total of 473 articles. After removing 7 duplicate records, 466 unique articles remained. Of these, 7 articles were excluded at the identification stage because they were books or publications not meeting the criteria of journal articles.

Next, the remaining 466 articles were screened during the Screening phase. A total of 123 articles were excluded at this stage because their year of publication was earlier than 2015, in accordance with the set criteria.

The full-text articles that passed the screening totaled 343. These articles then proceeded to the Eligibility phase to be further assessed against the full inclusion criteria. After evaluating the full-text eligibility, 337 articles were excluded because their content or research focus did not specifically address the junior high school (SMP) context, which is the primary focus of this study.

Finally, in the Included phase, 6 articles met all the established criteria and were included in the analysis of this Systematic Literature Review.

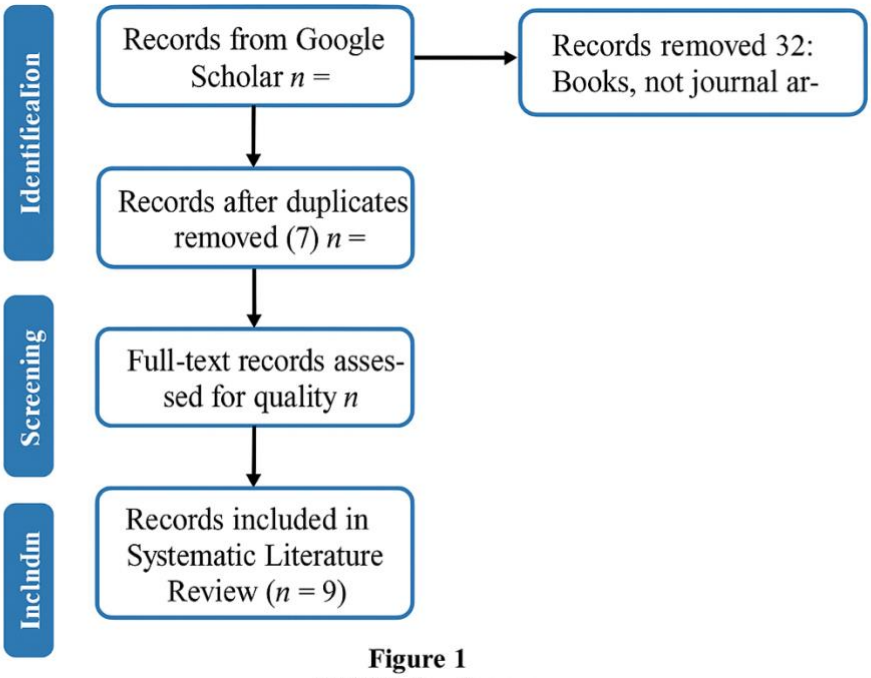

Figure 1
PRISMA flow diagram

Table 3 :
Literature Analysis

NO	RESEARCHER	RESEARCH VARIABLES	RESEARCH METHOD	RESEARCH RESULTS
1	Petrus Mikel, Bambang Ismaya	Students' Body Flexibility (especially back, hips), Basic Gymnastics Movement *Bridge*(Kayang)	Qualitative Descriptive (literature review)	Students' body flexibility greatly influences the bridge movement; there is a strong correlation between flexibility and the ability to perform the bridge.
2	Fadhil Yannas Albarsi Akbar, Dony	Initial Flexibility Warm-up, Teaching and Learning Efficiency (Learning Effort, Learning	Quantitative (Classroom Action Research)	Initial flexibility warm-up improves PE

	Andrijianto, Sandiko	Outcomes), Individual Factors (Motivation, Interest)		learning efficiency in Grade VIII students; there is a positive correlation between learning effort and outcomes, but individual factors are important.
3	Sutoro, Dewi Nurhidayah	Application of Direct Learning Model with 22° Inclined Plane Media, Students' Basic Forward Roll (psychomotor, affective, cognitive aspects)	Quantitative (Classroom Action Research – CAR)	Applying a direct learning model with 22° inclined plane media can improve junior high school students' ability in basic forward rolls.
4	Siti Hajar Nurhasanah, Sunarno Basuki, Herita Warni	Teaching Style (Practice Style), Students' Gymnastics Learning Outcomes (motor skills: strength, flexibility, coordination)	Quantitative (Literature Review)	The practice-style teaching method has a significant positive effect on gymnastics learning outcomes, including improving students' flexibility.
5	Fathya Azri, M. Al Ghani	Peer Tutoring Learning Method, Grade 8 Students' Learning Outcomes in Gymnastics Bridge (cognitive, affective, psychomotor aspects)	Quantitative (Classroom Action Research – CAR)	Peer tutoring learning method can improve Grade 8 students' learning outcomes in gymnastics bridge material.

6	Hartono Hadjarati, Arief Ibnu Haryanto	Students' Motivation, Gymnastics Learning Outcomes (forward roll)	Quantitative (Correlational)	The motivation variable has a very strong relationship with forward roll learning outcomes in gymnastics; the higher the motivation, the higher the learning outcomes.

This section delves deeper into the key findings obtained from the synthesis of six reviewed scientific journal articles, grouping them based on the most relevant themes to the objective of formulating a learning model. The analysis goes beyond individual descriptions of each study to synthesize comprehensive knowledge regarding crucial aspects of the research topic. The main themes to be discussed include the emphasis in the literature on the importance of flexibility, specific learning challenges faced by junior high school students, the influence of various tested learning approaches, and the role of psychological factors such as motivation in this process. This thematic synthesis aims to build an in-depth understanding that will form a strong foundation for the design of the learning model. Grouping findings by topic allows for the identification of patterns and interconnections among concepts from various sources (Mikel & Ismaya, 2023).

The first theme that stands out from the reviewed literature is the consensus regarding the importance of flexibility for performance in floor gymnastics. The literature explicitly states that good flexibility is a fundamental physical component that enables the correct execution of technical movements according to performance standards. Specific movements in floor gymnastics, such as backbends and forward rolls, are reported to be highly dependent on optimal flexibility, especially in the spinal, hip, and shoulder areas. A lack of flexibility in these key areas not only limits the necessary range of motion but can also cause compensatory incorrect movements by other parts of the body. This not only reduces the aesthetics of floor gymnastics movements but also potentially increases the risk of serious injuries. Developing adequate flexibility is considered an important prerequisite before students can master more complex and challenging gymnastics techniques (Widianingsih et al., 2023)

The topic analysis also confirms significant specific challenges faced by junior high school students in learning floor gymnastics, particularly those related to mastering movements that require a high degree of flexibility. Fear and lack of confidence are identified as significant psychological barriers that often arise at this educational stage. Students feel anxious about getting injured or embarrassed if they cannot perform the movements properly in front of peers or teachers. Students' initial mastery levels of movements such as

backbends or forward rolls tend to vary and often generally show low proficiency. The physical and psychological developmental characteristics of junior high school students need to be carefully considered in designing effective learning strategies. Building a sense of safety, reducing fear, and increasing students' confidence are crucial in addition to simply developing their physical abilities (Fathya Azri, 2021).

The reviewed literature presents various learning approaches that have been tested or suggested to improve gymnastics skills, either directly or indirectly relevant to the development or utilization of flexibility. The use of innovative learning media, such as inclined planes to assist mastery of the forward roll, has been reported to yield positive results in facilitating students' learning of the movement. Direct instruction methods are considered effective in providing clear demonstrations and step-by-step technical guidance. This approach emphasizes the structure and specific phases of movement that students need to follow. In this method, teachers play an active role in giving instructions, demonstrations, and direct corrections during students' practice (Sutoro & Nurhidayah, 2023).

Student-centered approaches or those involving social interaction among students also show great potential in enhancing floor gymnastics learning. Peer tutoring, for example, has proven effective in improving learning outcomes for movements such as backbends. In this method, more capable students guide their peers, which can reduce fear and increase active participation. Teaching styles emphasizing independent and collaborative practice, such as the practice style, have also been reported to yield positive effects. This style encourages repeated practice and the reception of feedback, which positively impacts motor skills, including flexibility. Providing students with structured practice opportunities and effective feedback is essential (Fathya Azri, 2021).

Teaching styles also have a significant impact on students' learning outcomes in floor gymnastics, as reported in the reviewed studies. The studies show that the implementation of the practice style teaching method has a positive influence on students' mastery of motor skills. This style emphasizes direct practice and provides ample opportunities for students to practice independently or in small groups. The practice style has succeeded in enhancing skills such as strength, flexibility, and coordination required in floor gymnastics. Students taught with this style tend to be more motivated and responsible for their learning process. Teaching styles that encourage student activity and exploration are highly relevant for floor gymnastics material (Nurhasanah et al., 2024).

Psychological factors, particularly motivation, emerge as crucial elements influencing students' learning outcomes in floor gymnastics. The reviewed studies show a strong correlation between students' motivation levels and their ability to master gymnastics movements such as forward rolls. Students with higher motivation levels tend to be more persistent and less likely to give up when facing technical difficulties or fear. Motivation acts as a strong internal driver for active participation in stretching and gymnastics training. Educators play a crucial role in fostering and maintaining students' motivation through various verbal and non-verbal strategies. Both intrinsic and extrinsic motivation play roles in encouraging students to practice and

overcome the challenges of difficult movements. Understanding students' motivation levels is important for designing effective and personalized learning (Hadjarati & Haryanto, 2020).

Overall, the topic analysis indicates that improving flexibility and mastering floor gymnastics skills in junior high school students requires a multifactorial approach. Success does not solely depend on physical exercises to enhance flexibility but also on integrated consideration of psychological and pedagogical aspects. Proper warm-ups focusing on flexibility, teaching methods that facilitate and reduce fear, as well as high student motivation, all play important and interrelated roles. The literature collectively underscores the complexity of the learning process for mastering these challenging motor skills in junior high school students. Therefore, the development of a learning model needs to integrate elements from various domains harmoniously. This synthesis strengthens the argument for the necessity of a comprehensive and integrated model (Yannas et al., 2024).

The findings from this topic analysis provide a rich empirical foundation for the formulation of an effective learning model. Various studies offer insights into successful strategies, obstacles to overcome, and factors to consider. Integrating findings on the importance of flexibility, the effectiveness of peer tutoring, the influence of the practice style, and the role of motivation can form a strong framework for the model. The model should be designed to systematically improve flexibility while addressing psychological barriers and utilizing supportive teaching styles. This synthesis represents a crucial step toward the development of an applicable model. The relevance of these findings directly applies to the context of floor gymnastics learning in junior high school students.

Furthermore, reinforcement of student-centered approaches is found in the application of the Project-Based Learning (PjBL) model. The PjBL model has been proven to not only focus on the final product outcome but also enhance social skills such as student collaboration in physical fitness activities. These collaboration skills align with efforts to overcome students' psychological barriers, as group work can build confidence and reduce the anxiety previously identified as a major challenge. This idea is reinforced by the proposal to integrate PjBL with the Inclusion teaching style, which is characterized by initial ability tests and the determination of varying difficulty levels for each student. The Inclusion approach directly addresses the issue of varying initial flexibility levels among junior high school students, ensuring that each student works at their own capability, making the learning process more personalized and effective (Ahwan et al., 2023).

Support for the use of learning media is also expanded through findings on the effectiveness of utilizing instructional videos accessed through platforms such as Google Meet. The use of videos has proven successful in comprehensively improving students' learning outcomes in the affective, cognitive, and especially psychomotor domains in rhythmic movement activities. This indicates that dynamic visual media can be a very powerful tool in demonstrating proper stretching techniques and floor gymnastics movements, making them easier for students to understand and follow compared to verbal or text instructions alone (Mashud & Ihwanto, 2022). Therefore, the synthesis of the entire reviewed literature further strengthens the

argument that the ideal learning model to improve junior high school students' flexibility in floor gymnastics is an integrated model, combining project-based learning principles, task differentiation through the inclusion style, and the use of supportive video media (Ardinnata & Mashud, 2023).

CONCLUSION

Based on the Systematic Literature Review that has been conducted, the synthesis of various relevant literature provides a comprehensive answer to the research problem regarding how literature findings can serve as the foundation for formulating a learning model to improve floor exercise flexibility among junior high school students. This systematic review consistently confirms that body flexibility is a crucial physical component that greatly influences the ability of junior high school students to perform specific floor exercise movements, such as backbends and forward rolls. It was also found that students at the junior high level face unique challenges, including a lack of initial flexibility, fear of injury, and varying levels of motivation, which significantly affect their learning outcomes. The literature indicates that various learning approaches—including the use of supporting media, the implementation of teaching styles such as practice style, interactive methods such as peer tutoring, and an emphasis on psychological factors such as motivation—have the potential to enhance mastery of floor exercise skills and flexibility. By synthesizing an in-depth understanding of the importance of flexibility and learning challenges, as well as evaluating the effectiveness of different methods and the influence of motivation based on the literature evidence, a solid conceptual foundation for formulating an adaptive and effective learning model can be established. The next step of this research is to develop a learning model based on the conceptual framework derived from this SLR and empirically test its effectiveness on junior high school students

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