

Sports education model (SEM) on students' motivation and physical activity in classroom: A literature review

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Abstract

Siedentop developed the Sports Education Model (SEM) to provide students with sports knowledge. As research on SEM has continued, attention has focused on (a) student motivation and (b) opportunities for physical activity in physical education classes. This study contains a literature review related to the Sport Education Model (SEM) on motivation and physical activity to provide evidence to support the idea that this model can achieve physical education learning. This study used 20 journals from 6 databases, namely Google Scholar, Sage Journal, Taylor & Francis, ScienceDirect, ResearchGate, and Academia.edu, with further analysis using synthesis techniques. The research aimed to pursue sports education (SEM) of student motivation and physical activity in physical education classes. This study is an updated review of how implementing the Sport Education Model (SEM) can build students' physical activity motivation and engagement in physical education classes, including the latest research trends for future research.

Keywords: Sport education model, motivation, physical activity.

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INTRODUCTION

The Sports Education Model (SEM) is an educational program and model that helps students become active and healthy and promotes a comprehensive experience. SEM effectively provides students with physical education's cognitive, emotional, and psychomotor aspects. The results showed that students who experienced SEM had higher to moderate physical activity levels (Rocamora et al., 2019). Other studies have shown that increasing physical activity increases men's overall participation in physical activity and aerobic exercise (Cawley et al., 2013). Participation is a social goal that determines the choice of leisure-time physical activity for

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young people and a way to create opportunities for social connections that are developed in effective curricular programs (Wallhead et al., 2013).

Physical education promotes an intellectual climate, and students experience greater independence, competence, and connection than in traditional physical education methods, which naturally facilitates self-motivation in physical education (Chu & Zhang, 2018). Research student motivation in PE and find the positive effects of Physical Education in increasing motivation (Perlman & Caputi, 2017). Motivating students who are more engaged in physical education show greater enjoyment in physical education (Perlman & Caputi, 2017). In addition, motivation in physical education can also provide other benefits, including improved social skills, self-confidence, and positive attitudes (De Meyer et al., 2014).

The development of student's social skills and physical activity is also observed. Group participation is an important part of this development, as it helps develop students' good communication, assertiveness, cooperation, empathy, independence, and relationships (Book et al., 2020). The feeling of being part of a team and the unity it creates also helps promote fair play, pride, and motivation among students (Wahl-Alexander et al., 2016). A previous study found that SEM improved student enjoyment and satisfaction in promoting physical education (Cuevas et al., 2016) this is particularly important for increasing student motivation (Perlman, 2012b). Role models (coach, captain, referee, or umpire) also seem to influence students' motivation by increasing their self-imposed capacity (Romar et al., 2016) through self-determined competency building (Menéndez-Santurio & Fernández-Río, 2016).

Physical activity is also linked to the statement that some physical activities do not allow students to be physically active. Therefore, strategies to meet these needs are essential. To help students stay active in a physical education class, teachers must make the class effective with the right teaching strategies. One of the tools that can help teachers in learning is using models (Ginanjar et al., 2019). Evidence regarding the potential of SEM to support the recommended minimum levels of MVPA during PE.

More importantly, the program proved to be an effective tool to promote equal participation, as girls and boys demonstrated similar levels of MVPA, exceeding the minimum recommended levels for physical education classes (Puente-Maxera et al., 2021).

Several studies highlight that SEM can improve students' skill levels, perceived competence, and tactical knowledge (Pereira et al., 2014), as well as their participation and motivation (Evangelio et al., 2018) compared to other educational frameworks. Nonetheless, many studies have shown similar improvements in sports learning within the same structure (Pereira et al., 2014), and their participation and enthusiasm (Evangelio et al., 2018) compared to other learning frameworks. Nonetheless, many studies have shown similar improvements in sports learning across both structures (Hastie & Casey, 2014; Hastie & Wallhead, 2016). When considering student skill levels and the impact of SEM on student outcomes, the study did not conclude: (1) less engaged students experience greater motivation and inclusion (Perlman & Caputi, 2017); (2) students with intermediate skill levels experienced more significant improvement (Mahedero et al., 2015); dan (3) both male and female students of all skill levels experienced improvements (Hastie & Wallhead, 2016). In all cases, students with high levels of ability as student leaders appear to play an essential role in helping other students (Burstiando, 2015).

Some of the above research results show that SEM supports students' game performance and tactical knowledge by increasing their abilities. However, when SEM is combined with other models, such as Teaching Games for Understanding (TGfU) or Innovation Game Competency Model (IGCM), have different effects, as such complex frameworks can also lead to negative consequences for students' understanding of tactical principles.

Some of the results above show that SEM promotes students' play and cognitive skills by improving their abilities. However, integrating SEM with other models, such as the Teaching Game Competency Model (TGfU) or the Innovation Game Competency Model (IGCM) (Farias et al., 2015), is

different due to the complexity of this process. It intentionally negatively impacts the students' understanding of tactical concepts (Evangelio et al., 2018).

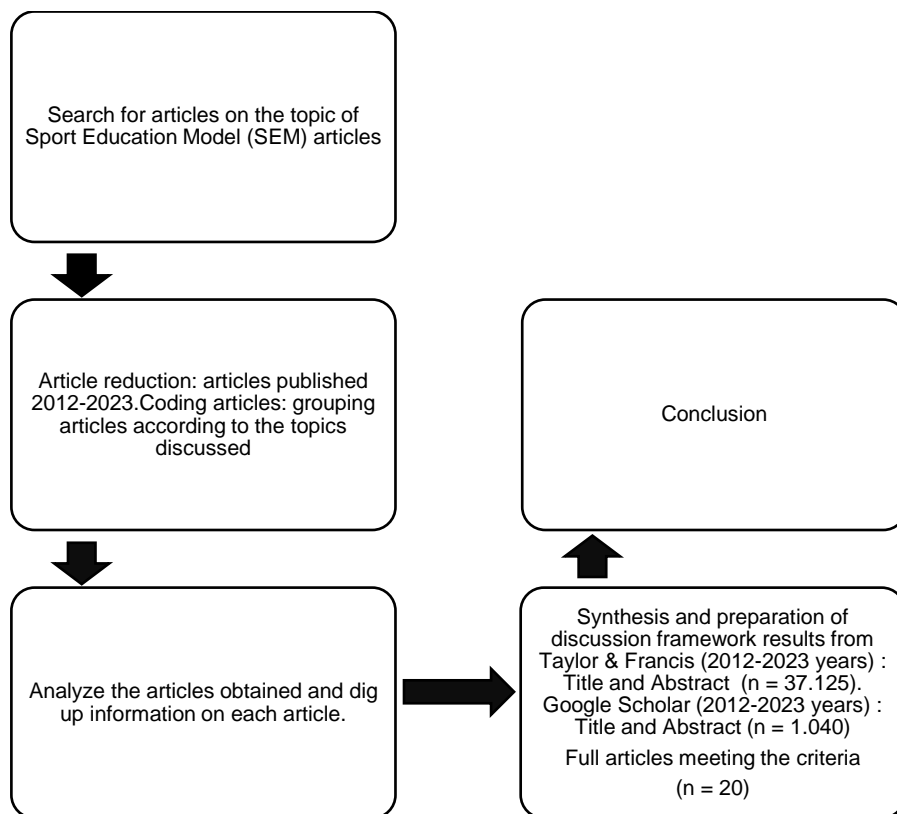
This systematic review is organized around the impact of SEM on motivation and physical activity in physical education classes. It is considered a process in physical education learning that should be considered, as well as examining the differences in physical activity between students motivated to take part in SEM versus other learning models in physical education classes. For all of the above, the purpose of this article is to provide an updated international systematic review of the implementation of SEM on motivation and physical activity in physical education classes to identify new trends in research.

METHOD

The research method used is the literature review. The literature review includes reviews, summaries, and author opinions on various documents (articles, books, slides, websites, etc.). This data analysis aims to explore the use of the Sports Education Model (SEM) in physical education classes. The analysis used in this literature review includes four steps that must be followed sequentially to provide an optimal answer to the research question. The steps for verifying this information are as follows. 1) Research and collect data with SEM content for motivation and physical activity; 2) reduce and code, filter, and classify the data according to the discussion; 3) Analysis and connection of information about the information received, research, and investigation; 4) The final stage of the thesis examination, the stage of presenting the conclusions and explaining the novelty of the research.

The researchers obtained information in this study from a number of research papers in research articles published in national and international journals. Data was collected online via Google Scholar, Taylor & Francis, Sage Journal, ScienceDirect, ResearchGate, and Academi.edu. Then, we read and selected the articles one by one until obtaining 20 research articles that served as samples in this literature review. The criteria for selecting

articles in this literature review process are items preferred to articles on SEM topics on motivation and activities published in the last decade (2012-2023). The review process can be found below.



Picture 1. Article review process

RESULT

This literature review will examine how the sports education model affects students' motivation and physical activity in the classroom. This literature review also summarizes and compares articles on sport education models on motivation and physical activity. There are 10 other articles discussing research on sport education models on motivation in Table 1 and sport education models on physical activity in Table 2.

The review revealed that the sports education model (SEM) requires students to play a variety of roles rather than the usual sports role of players, so students become more physically motivated and more active.

Table 1. Sport education model literature of motivation

Author and Year	Purpose Research	Titel	Country	Source and database	Type Research	Result
Dana Perlman (2012)	This study examined the influence of the Sport Education approach on pre-service teachers' autonomous instruction.	The Influence Of The Sport Education Model On Amotivated Student's In-Class Physical Activity	Australia	European Physical Education Review (EPER): Q1	Quantitative Study	These results show that offering students sports that promote bodily changes is possible. Research has shown that physically motivated students are more active in SEM than in SDG classes.
Mika Manninen, Sara Campbell (2022)	Provide a quantitative synthesis of the effect of the SEM on essential need satisfaction, intrinsic motivation, and prosocial attitudes in PE. To this end, this study had two broad research questions: (a) what is the effect of the SEM on basic need satisfaction, intrinsic motivation, and prosocial attitudes compared to traditional PE instruction?; (b) what study features moderate the effects detailed in research question one?	The Effect of The Sport Education Model On Basic Needs, Intrinsic Motivation And Prosocial Attitudes: A Systematic Review And Multilevel Meta-Analysis	Ireland	European Physical Education Review (EPER): Q1	Systematic reviews and meta-analyses on experimental studies, with 25 articles	This meta-analysis shows that SEM is more effective in promoting physical motivation and positive attitudes than other, more formal physical education programs. This model increases students' interest and motivational expectations, especially in physical education.
Yuehong Liang, Jiling Zhang, Yingbo Cui, Ren Yuan (2016)	The paper analyzes the sport motivation change of students before and after the sports education model by setting and implementing the sports education model, which takes elective volleyball courses in university, for example.	Experimental Study For Culvating College Students' Sports Motivation In Sports Education Model	China	Scientific Research Publishing: International Journal	Quasi-Experimental, with 236 (72 female and 164 male)	The sports education model provides a competitive environment for increasing the level of motivation of pupils to participate in physical education. Volleyball during the school year supports the motivation of pupils. There is a positive relationship between sports motivation and pupils' emotions.
Angelo Montoya, Kelly Simonton & Karen L. Gaudreault (2020)	This paper aims to review two highly motivational instructional models and provide a detailed explanation and discussion of their positive ramifications on students.	Enhance Student Motivation And Social Skill: Adopting The Sport Education And Cooperative Learning Models	Mexico	Journal of Physical Education, Recreation & Dance: Q2	Literature review	The educational model provides students with many educational advantages and benefits that standard education cannot provide. These standards have a significant impact on student motivation and on the development of student attitudes and behaviors.
Lidia Hernández-Andreo, Alberto Gómez-Mármol, María Isabel Cifo-Izquierdo (2020)	The present study aimed to compare the effects on motivation and implicit beliefs about self-ability when implementing a Sports Education model and a traditional style.	Effects On Motivation And Implicit Beliefs About Self Ability Using The Sport Education Model And Traditional Style In Secondary Education	Spain	MDPI Journal: Q1	The CMEF questionnaire (cuestionario de motivacion en educacion fisica), with a total of 54 students	There is a significant difference in the sports education model in terms of motivation, self-identification, internal control of investment, and external control (p<0.01). Optimal sports education model to increase motivation

Dana Perlman (2012)	This study aimed to examine the perceptions and experiences of 33 motivated students (i.e., students with low levels of motivation) during four consecutive seasons of the Sport Education Model.	An examination of a motivated student within the Sport Education Model	Australia	Asia-Pacific Journal of Health, Sport and Physical Education: Q3	A qualitative case study with a total of 33 motivated students (male:10; female:23)	The characteristics of group participation and the appreciation of the game as a whole lead to a change in the perception of students who are motivated by sports and physical education lessons
Ricardo Tendinha, Madalena D. Alves, Tiago Freitas, Gonçalo Appleton, Leonor Gonçalves, Andreas Ihle, Élvio R. Gouveia and Adilson Marques (2021)	This study aimed to analyze the impact of the SEM on students' motivation.	Impact Of Sports Education Model In Physical Education On Student's Motivation: A Systematic Review	Portugal	MDPI Journal: Q1	Systematic review, with records identified through database searching (n = 146)	This analysis shows that SEM offers many opportunities for students to develop their self-determination in physical education classes with a high level of responsibility and participation. In this regard, SEM can be seen as a useful tool to change the current pattern of discouragement and participation in PA by using SEM in PE classrooms.
Chun-Chieh Kao, Yu-Jy Luo (2019)	Explored the moderating effect of elective motivation on the relationship between the SEM and low student performance in PE.	The Influence Of Low-Performing Students' Motivation On Selecting Courses From The Perspective Of The Sport Education Model	Taiwan	Physical Education of Students: Jurnal International	Quasi Experiment, with 115 students	Research has shown that physical education teachers can use SEM to develop effective learning strategies and improve underachieving students' motivation to choose
Tristan L. Wallhead, Alex C. Garn & Carla Vidoni (2014)	This study aimed to examine the effect of a high school sports education curriculum program on students' motivation for physical education and leisure-time physical activity.	Effect of a Sport Education Program on Motivation for Physical Education and Leisure-Time Physical Activity	US	Research Quarterly for Exercise and Sport: Q2	Quasi Experiment, with 568 high school students from two high schools, Romulus (n: 281) and Remus (n: 287; pseudonyms)	The sports education model supports many types of support for students in necessary physical education, but the ability to transition to physical activity will only be achieved with the appropriate activities.
Tsz Lun (Alan), Tao Zhang (2018)	The purpose of this study was to conduct a literature review on the motivational processes in a Sport Education curriculum model among high school-aged students using self-determination theory and achievement goal theory as theoretical frameworks.	Motivational processes in Sport Education programs among high school students: A systematic review	China	European Physical Education Review (EPER): Q1	Literature Review, with a total of 18 articles	The sports education model is linked to the SDT and the AGT to support the promotion of the results of high school students. In order to improve student motivation in physical education and recreational PA, teachers are encouraged to use sports lessons rather than short courses in various teaching methods.

Table 2. Literature sports education model of physical activity

Author and Year	Purpose Research	Titel	Country	Source and database	Type Research	Result
Irene Rocamora, Sixto González-Villora, Javier Fernández-Río and Arias Palencia Natalia María (2019)	The goal was to assess the effects of two instructional approaches, the Sport Education Model (SEM) and Direct Instruction (DI), on Primary Education students' physical activity intensity levels, game performance, and friendship goals.	Physical activity levels, game performance, and friendship goals using two different pedagogical models: Sport Education and Direct Instruction	Spain	Physical Education and Sport Pedagogy: Q1	Experiment study	Students who experienced SEM had more moderate physical activity, a friendly approach, and friend avoidance goals, and students who experienced DI had more body strengthening. GPAI scores showed significant improvement in student performance in both study groups, but more so in the SEM group
Agi Ginanjar, Adang Suherman, Tite Juliantine, Yusuf Hidayat (2019)	This study aimed to examine physical activity differences in each phase of SEM through badminton. The method used in this study was an experimental research method with a factorial design.	The Effect of Sport Education Model in Badminton Games on Moderate to Vigorous Physical Activity of Junior High School Students	Indonesia	Jurnal Pendidikan Jasmani dan Olahraga (JPJO): Sinta 2	Quantitative study with 80 students.	In the competition phase of SEM, the physical activity achievement tended to decrease, caused by the opportunities to decrease the physical activity to start the game.
Federico Puente-Maxera Antonio Méndez-Giménez Diego Martínez de Ojeda (2021)	The goal was to assess the effects of two instructional approaches, the Sport Education Model (SEM) and Direct Instruction (DI), on Primary Education students' physical activity intensity levels, game performance, and friendship goals.	Physical activity levels during a Sport Education season of games from around the world	Spain	European Physical Education Review (EPER): Q1	Quasi Experiment, with A total of 71 seventh-grade students (boys:138; girls:33)	The results of this study present evidence regarding the ability of SEM to promote MVPA at least as recommended during PE. More importantly, the program is an excellent tool to encourage greater participation. Because girls and boys had similar levels of MVPA, both exceeded the recommended minimum for physical education classes.
Carolina Casado-Robles, Daniel Mayorga-Vega, Santiago Guijarro-Romero & Jesús Viciano (2020)	The study aimed to compare the effect of a Sport Education-based irregular teaching unit on high-school students' physical activity (PA) during school recess.	Sport education-based irregular teaching unit and students' physical activity during school recess.	Spain	The Journal of Educational Research: Q3	Quasi Experiment.	The competitions phase of the Sport Education model performed at school recess is a valuable strategy for increasing students' PA, contributing to the achievement of the daily recommendations.
Carlos Evangelio, Jacob Sierra-Díaz, Sixto González-Villora Javier	This study is an updated review of the most recent implementations of the Sport Education Model (SEM) from	The Sport Education Model In Elementary And Secondary Education: A Systematic Review	Spain	Movimento: Q3	A systematic review	SEM impacts participants' learning (playful and cognitive skills), social and meaningful (emotional,

Fernández-Río (2018)	1st to 12th grades (ages 6-18), including the newest research trends for future studies.					affirmative, or equitable playful), interests, enjoyment, and interests, regardless of skill level and sex. SEM also helped students develop their skills, independence, and relevance by meeting their psychological needs
Agi Ginanjar, Adang Suherman, Tite Juliantine, Yusuf Hidayat (2019)	This study aimed to determine the differences between team and individual sports when using SEM towards sports orientation in physical education for junior high school students.	Sports Orientation During Learning Team Or Individual Sports Using A Sports Education Model	Indonesia	Cakrawala Pendidikan: Sinta 2	Quasi Experiment, with 80 grade seventh junior high school students.	Sport orientation in SEM team sports is more influenced by goal orientation based on the statement that success in sports competition (sport orientation sport) depends on target orientation, but not in SEM individual sports.
Chun-Chin Liao, Chien-Huei Hsu, Kuei-Pin Kuo, Yu-Jy Luo and Chun-Chieh Kao (2023)	This study fills this gap in the literature.	The ability of the Sport Education Model to Promote Healthy Lifestyles in University Students: A Randomized Controlled Trial	Taiwan	MDPI Journal: Q1	Eksperimental	Sport education model has a more vital ability to promote healthy lifestyles than conventional teaching. Additionally, the results suggest that teachers should apply specific teaching strategies to cultivate and reinforce exercise habits and healthy behaviors among students.
Colin G. Pennington, Ph.D. (2020)	This study aimed to determine what impact preservice teachers had on students accruing the recommended levels of moderate to vigorous physical activity (MVPA) during their early field experience of an undergraduate secondary methods course while teaching within the Sport Education curriculum model.	Models-based instruction: the Sport Education curriculum model and accruing physical activity	South America	Clausius Scientific Press (CSP): Journal International	Quasi Experiment	The impact of student teachers on student uptake of moderate-intensity physical activity (MVPA) in secondary school experiments while teaching sports education curriculum model
Todd Layne, Kelly Simonton, Carol Irwin (2022)	This study aimed to examine the effectiveness of student learning/performance through MBI and technology.	Effects of a sports education instructional model and heart rate monitor system on the physical activity and jump rope performance of fourth-grade students	USA	Journal of Physical Education and Sport (JPES): Q2	Quasi Experiment, with of 130 (Female, 69 Male) 4 th -grade student	The SE model produced favorable results in jump rope performance and overall MVPA in 4 th -grade students

Neşe Saraç Oğuzhan, Deniz Hunuk.(2017)	The study aimed to examine the experiences of students with special needs on the sports education model (SEM)	Experiences of Students with Special Needs on Sport Education Model	Turkey	Scientific Programming Journal: Q1	Quasi Experiment, with 7 of them (3 girls, 4 boys)	SEM, giving active roles to the students with special needs in the team in accordance with their talents and interests, has promoted their active participation in class, motivation, and socialization
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DISCUSSION

The Sports Education Model (SEM) is an educational model that educators can use to promote the empowerment and enjoyment of sports in schools (Montoya et al., 2020). This sports education model is designed to allow students to practice sports as part of school sports (Tendinha et al., 2021). This literature review suggests that SEM is more effective than other physical education programs in promoting physical activity and positive attitudes. This model seems to keep students more interested and motivated, especially in physical education (Burstiando, 2015; Hartono et al., 2014; Hernández-Andreo et al., 2020; Kao & Luo, 2019; Liang et al., 2016; Manninen & Campbell, 2022; Montoya et al., 2020; Perlman, 2012b, 2012a; Tendinha et al., 2021). In order to provide students with physical activity that promotes physical change, research has shown that student physical activity is higher in SEM classes than in SDG classes (Perlman, 2012c).

Promote physical activity through support to influence the interests and skills of students in schools, from early childhood to secondary school (Suwandar & Hidayat, 2021). This review suggests that sports education (SEM) provides a competitive environment to increase students' motivation to participate in physical education. Research reveals a relationship between motivation and students' behavioral emotions (Liang et al., 2016). The sports education method (SEM) has many benefits and advantages that standardized education cannot provide. These standards significantly impact student motivation and the development of student attitudes and behaviors (Montoya et al., 2020). The Sports Learning Model (SEM) makes an important distinction between motivation, self-appraisal, investment in

internal control, and external control, making the Sport Education Model (SEM) best for increasing motivation ([Hernández-Andreo et al., 2020](#)).

Encouraging physical activity during free time at school (recess, lunch, and class changes) is crucial. Initiation of physical activity, such as jogging, is associated with cardiometabolic biomarkers, as seen in children in the United States ([Kirby et al., 2013](#)). To improve physical strength, self-awareness influenced by various personal (motivation, enjoyment, self-efficacy) and environmental (open space) factors must be done ([Payán et al., 2019](#)).

Physical education helps students prepare well, but physical education can only be done with good sports ([Wallhead et al., 2014](#)). Research shows that SEM provides many opportunities for students to develop independence in sports lessons with high responsibility and participation. In this context, SEM can be seen as an important tool for changing PA expectations and participation patterns when using SEM in PE lessons ([Tendinha et al., 2021](#)). Moreover, physical education teachers need to understand this concept. Other research has shown that physical education teachers can use SEM to develop effective teaching strategies for low-motivation students ([Kao & Luo, 2019](#)). The results of a parallel study revealed that the sports education model was associated with SDT and AGT to increase secondary school students' motivation. However, to increase students' motivation in sports and physical education, teachers are encouraged to use the sports lesson model (SEM) as an alternative teaching method ([Chu & Zhang, 2018](#)).

Sports education models (SEM) conducted in schools are seen as an important strategy to increase student's physical activity and contribute to the implementation of recommendations on a daily basis ([Casado-Robles et al., 2020](#)). In the competitive phase of SEM, physical activity may decline due to reduced physical activity ([Lutfi Nur, 2019](#)). Physical education should promote physical activity for students as they review results provide evidence that SEM can promote MVPA at least as much as recommended in physical education. This model is a good tool to encourage greater

participation ([Puente-Maxera et al., 2021](#)). Similarly, students who received SEM had more moderate activity, friendly attitudes, and intentions to avoid friends, while students who underwent DI had more physical activity. GPAI scores showed increased student achievement in both model groups but higher in the group that did SEM ([Rocamora et al., 2019](#)).

Thus, using SEM affects participants' learning (play and intelligence), social and meaningful (emotional, good, or fair play), care, happiness, and interest, regardless of their skill level and sex. By meeting their intellectual needs, SEM also helps students develop skills, independence, and a sense of purpose ([Evangeliio et al., 2018](#)). SEM team sport orientation is more influenced by goal orientation, with the understanding that success in sports is more dependent on individual sport orientation ([Ginanjar et al., 2019](#)).

On the other hand, the sports education model (SEM) can promote health more than the conventional education model ([Liao et al., 2023](#)). Teachers should use specific teaching strategies to develop and promote the health and behavior of their students. Another study found that teachers influence high school physical education students' mean physical activity (MVPA) ([Pennington, 2020](#)). In another study, SEM showed positive results in jump rope and total MVPA in grade 4 ([Manninen & Campbell, 2022](#)). Another study showed that SEM provides an important role to students with special needs in groups based on their skills and interests, encouraging motivation in the classroom and socialization ([Oğuzhan & Hunuk, 2018](#)).

CONCLUSION

This literature review shows sufficient evidence to conclude that SEM effectively promotes and increases physical activity in physical education classes. Research has shown that the sports education model (SEM) provides positive student outcomes such as competence, motivation, and happiness. To achieve the physical activity, the competitive sports education model (SEM) requires students to play many roles in sports so that students will be more active in physical education classes.

The results of this study are expected to be the basis for sports experts, especially sports education, to begin studying the Sport Education

Model (SEM) to provide students with a better understanding of the role and function of sports participation in schools and communities, and can be implemented in sports learning in the classroom.

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