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Unpacking the Sport Education Model (SEM) in Indonesia: a systematic review of implementation and impact

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ABSTRACT

Background: Research on pedagogical models in physical education has increased rapidly in the past two decades, with the Sport Education Model (SEM) being the most dominant approach. However, systematic mapping for SEM implementation in Indonesia is limited. **Research Objectives:** This study aims to critically examine the application of SEM in Indonesia to provide more comprehensive and up-to-date picture. **Methods:** The articles used for analysis were initially sourced from the Scopus, Web of Science, and Sinta databases. We conducted the search according to the Preferred Reporting Items for Systematic Reviews and Meta-Analyses (PRISMA) guidelines. Review studies meeting the following inclusion criteria: (i) Peer-reviewed journal articles published and written in Indonesian or English between 2015 and 2024, (ii) Included participants from elementary, middle and high schools and colleges, (iii) Conducted in the physical education context, and (iv) Intervention studies implementing one, several or combined pedagogical models. Exclusion criteria were: (i) Not scientific review studies and (ii) Not about SEM implementation. After the exclusion criteria, only 17 articles were categorised, all published between 2015 and 2024. **Findings/Results:** A total of 17 articles involving 1,184 students were analysed. Interventions lasted between 8 and 16 meetings per semester, with the content dominated by invasion games (football, handball, basketball) and net games (badminton, volleyball). The research design was largely experimental, although not all used a control group. Variables tested included motivation, leadership, game play, tactical awareness, and sport orientation. **Conclusions:** SEM was found to be effective in enhancing student learning across multiple domains (cognitive, social, physical, and effective). However, we identified weaknesses in the lack of exploration of individualised sports, limitations in methodological design, and narrow coverage of variables. This study emphasises the need for diverse approaches and further exploration in local contexts.

Keywords: Sport education model; physical education; review

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INTRODUCTION

Physical education is recognised globally as having a good impact on children (Andermo et al., 2020), but of course until now experts continue to strive for meaningful physical education from planning, experiencing, teaching, analysing, and reflecting on meaningful participation (Ní Chróinín et al., 2018). Initially, the favoured learning design

was the multi-activity and sport technique-based approach to sport especially in secondary schools (Casey & Kirk, 2020). Multi-activity and sport technique-based physical education became a global phenomenon that emerged after the second world war until the millennial era, and persisted despite different curricula regardless of the 'local wisdom' that emerged in some regions (Quennerstedt, 2019). However, this approach has many limitations, namely that it cannot be applied to all students, and can only develop physical aspects (Casey & MacPhail, 2018; Casey & Kirk, 2020). Therefore, the solution proposed by experts is model-centred physical education, or what some call models of physical education pedagogy or models-based practice (MbP) or often called model-based learning (Casey & Kirk, 2020).

Over the past thirty years or so, model-based practice (MbP) has replaced traditional physical education, and MbP has provided an alternative structure to enhance students' physical education experiences (Casey & Kirk, 2020). Among the pedagogical models most widely applied in the last two decades in physical education learning in many countries is the Sport Education Model (Hastie & Wallhead, 2016; Wallhead et al., 2021; Fernandez-Rio & Iglesias, 2024). The Sport Education Model (SEM) is widely recognised for its alignment with physical education standards in various countries. Research results have demonstrated its effectiveness in increasing studesnt engagement through student-centred learning activities, thus contributing significantly to students' development as physically educated individuals (Hastie & Wallhead, 2016). SEM is a learning model that has been shown to provide authentic and educationally rich experiences (Araújo et al., 2015; Brock & Hastie, 2016; Hastie et al., 2017; Bessa et al., 2021), and has more potential to deliver psychomotor, cognitive and affective learning outcomes (Wallhead et al., 2021).

SEM has in the last two years been adopted in a Ministry of Education and Culture Professional Development Programme (PPKG PJOK) as one of the models developed to improve the pedagogical skills of student-centred physical education teachers. The program is a continuous professional development programme conducted by the Ministry of Education and Culture of Indonesia, especially for physical education teachers in public and private schools in formal education units at the elementary, junior high, high school, vocational and special school levels through training and collective teacher activities. One of the biggest reasons why SEM was used in the development programme is because it is an approach to learning physical education that offers a complete learning experience in a real-life sport context (Wallhead et al., 2014). The SEM model also provides opportunities for students to learn skills, tactics, strategies, game rules, and understand social responsibility through various roles according to their abilities or interests (Burgueño & Medina-Casaubón, 2020). In addition, students can explore various roles such as player, coach, manager, referee, and spectator, and even more broadly can become match analysts, journalists and so on (Siedentop et al., 2019). These things show that SEM will provide a more complete meaning in learning physical education, because sport is an inseparable part of various aspects of people's lives.

The urgency of this study lies in the importance of improving the quality of physical education through model-based approaches that have been proven effective in enhancing students' learning experiences (Fernandez-Rio & Iglesias, 2024), specifically SEM. By understanding the implementation of SEM more deeply, educators can adopt more effective strategies in increasing students' participation, motivation and engagement in physical learning. Previous research such as that conducted by Bessa et al. (2021) includes a large number of positive learning outcomes: responsibility, affiliation and belonging, inclusion, peer support and equality, teamwork, cooperation and compliance, autonomy, empathy and friendship, fair play, empowerment, problem solving and decision making, leadership, trust and confidence, self-determination, and assertiveness.

In addition, Araújo et al. (2014) and Evangelio et al. (2018) revealed the impact of SEM in student learning in the social, cognitive, and affective domains. But SEM research on its implications in the Indonesian education system is still lacking. Findings from this study can inform the formulation of more evidence-based physical education policies, thereby improving the quality of learning as well as students' physical and mental well-being. Thus, this study not only fills a gap in literature but also has practical implications.

Although the Sport Education Model (SEM) has been widely applied in physical education, research on its implementation and impact in Indonesia is still limited in several aspects. Previous studies have mostly focused on the application of SEM in team sports such as basketball (Agustan et al., 2020; Burstiando, 2015; Ginanjar et al., 2020; Ramadhan & Effendy, 2021), futsal (Ginanjar et al., 2021; Ginanjar, Mudzakir, et al., 2023; Ishak, 2017) and handball (Ramadhan et al., 2024; Slamet et al., 2021), while exploration of its application in individual sports is still minimal. In addition, the research designs used in previous studies tend to be less varied, with a predominance of experimental methods without control groups (Burstiando, 2015; Ginanjar, Ramadhan, et al., 2023; Ishak, 2017; Sukiri et al., 2024), thus limiting the validity of conclusions regarding the effectiveness of SEM. Furthermore, existing studies have mostly evaluated variables such as motivation, leadership, and tactical awareness. Some previous systematic reviews, such as those conducted by Hastie et al., (2011) and Manninen and Campbell (2021), have evaluated the implementation of SEM in various contexts, but there is still no review that specifically analyzes the application of SEM in physical education in Indonesia.

This study offers a novel contribution by conducting a systematic review of the implementation and impact of SEM in Indonesia, which has not been done previously. By organising and evaluating existing evidence, this study aims to identify gaps in literature, such as the lack of application of SEM in individual sports as well as limitations in the research designs used. In addition, this study also provides recommendations for future research directions to be more comprehensive in assessing the effectiveness of SEM in various learning contexts. Several overseas review studies have demonstrated the effectiveness of SEM in increasing student participation and learning experiences (Araújo et al., 2014; Hastie et al., 2017; Wallhead et al., 2014), but no research has specifically examined its effectiveness in the Indonesian physical education system.

Regardless of the various factors that cause SEM not to be widely applied by teachers, this review is expected to provide reinforcement and further information for researchers and practitioners or physical education teachers. The purpose of this study is to systematically review the extent of SE research that has been conducted in Indonesia. The four research questions guiding the review of this study are: Q1. What is the distribution of participants from the implementation of SEM so far? Q2. What materials are used in the season of SEM? Q3. What are the methodologies that have been used to investigate SEM research? Q4. What impact variables are studied from SEM implementation?

METHOD

This review adhered to the guidelines established by the Preferred Reporting Items for Systematic Reviews and Meta-Analyses (PRISMA), as PRISMA emphasises reporting reviews that evaluate randomised trials, which can be the basis for reporting systematic reviews in (Sarkis-Onofre et al., 2021). The search started by using Scopus, Web of Science (WoS) and Sinta (Science and Technology Index) databases. We used Sinta because we focused on research conducted in Indonesia, and most likely publications were made in domestic journals. The search strategy used a combination of keyword variations such as "Sport Education Model" OR "Sport Education Model in Indonesia". Review studies meeting the following inclusion criteria: (i) Peer-reviewed journal articles

published and written in Indonesian or English between 2015 and 2024, (ii) Included participants from elementary, middle or high school and college, (iii) Conducted in the physical education context, and (iv) Intervention studies implementing one, several or combined pedagogical models. The exclusion criteria we used were (i) duplicated articles, (ii) articles in languages other than Indonesian and English, (iii) research articles, not reviews, book chapters or similar, and (iv) did not explicitly mention the sport education model. The next steps from three databases, Web of Science (3 articles), Scopus (6 articles), and Sinta (20 articles), produced 30 publications from the search results. After adjusting the exclusion criteria, only 17 articles remained. We discarded most of these articles because they mentioned and examined SEM in physical education. All articles were extracted from the database and analysed through Mendeley software to remove duplicate articles.

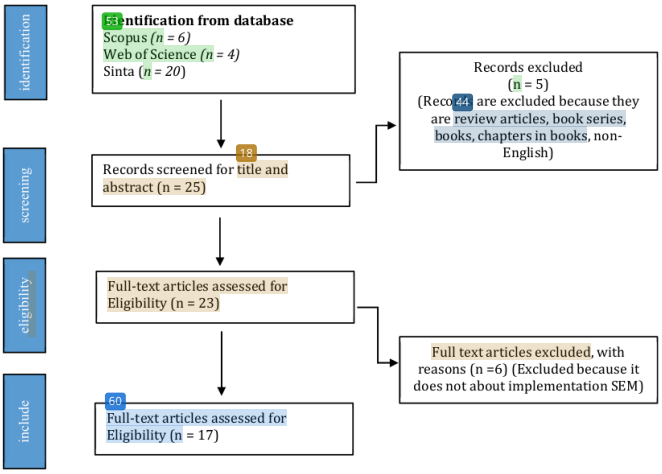

Figure 1. Flow Diagram of Research Selection

RESULTS AND DISCUSSION

Table 1 presents a comprehensive overview of each of the 17 empirical articles that serve as the foundation for this review, providing key data-driven insights and findings. The papers were collected from 2015 to 2024, or the last 10 years; of the 30 papers we got, only 17 are worthy of review and are the result of SEM implementation. In this review, referring to previous reviews, it includes 9 columns: author, focus of the study, participants/context, sports, length of research, data sources, analysis, and results. The table also lists the journals that published the papers.

Tabel 1. Summary of Data-Driven Research on Sport Education

No	Author	Focus of The Study	Participant/ Context	Sports	Length of Research	Data Sources	Analysis	Results
1	Burstiando, (2015)	Increasing intrinsic motivation and extrinsic motivation	18 boys and 20 girls Junior High School 7th grade	Basketball	10 lesson, 56 minutes/ meeting	Questionare to students	Quantitative: one group pretest-posttest; Uji t	SEM significantly increases both intrinsic and extrinsic motivation of students in basketball games.
2	Ishak, (2017)	The influence of SEM on futsal passing ability	24 student senior high school	Futsal	-	Passing futsal test	Quantitative: one group pretest-posttest; Uji t	SEM influences positively towards passing in futsal to the students
3	Ginanjar et al., (2019)	Sport orientation in teaching team or individual sports using the Sport Education model	80 Junior High School 8th grade	Basketball and Badminton	15 lesson	Using the Sport Orientation Questionnaire for student	Quantitative:posttest-only control group design;	There is a difference between team sport SEM and individual sport SEM on sport orientation in physical education of junior high school students. sport orientation is more influenced by goal orientation, supporting the idea that success in sports competition (sport orientation) relies on goal orientation. However, this relationship is not observed in the individual sport SEM group.
4	Ginanjar et al., (2020)	To investigate the differences in the impact of physical activity within the Sport Education (SE) model	40 students (male) Junior high school 8th grade	Basketball	15 lesson	Using Polar RC3 GPS	Quantitative: one-shot case study; One way anova	Differences in the impact of physical activity during each phase of the Sport Education (SE) model using basketball
5	Agustan et al., (2020)	Hybrid SE-IGCM to improve basketball play	20 student senior high school 10th grade	Basketball	15 lesson	Basketball Offensive Game Performance Instrument (BOGPI)	Quantitative: one-group pretest-posttest design; paired t test	Basketball game performance after treatment using Hybrid SEIGCM provides a higher level of significance compared to basketball game performance before treatment.
6	Ginanjar et al., (2021)	SEM for College Students' Motivation	35 college students	Futsal	15 lesson	Questionnaire (SRQ-L) to student	descriptive quantitative approach	The motivation level of coaches is higher compared to all other roles, and the roles within the team exhibit greater motivation than those outside the team.

No	Author	Focus of The Study	Participant/ Context	Sports	Length of Research	Data Sources	Analysis	Results
7	Ramadhan & Effendy, (2021)	The impact of the Sport Education (SE) model on student learning motivation	40 student junior high school 8th grade	Basketball	15 lesson	Learning motivation questionnaire	Quantitative: pre-experiment, intact-group design	There is an increase in learning motivation. Can be an alternative in k-13
8	Slamet et al., (2022)	The impact of the Sport Education Model (SEM) on physical self-concept and the learning outcomes of invasion game activities	42 student elementary school	Invasion Game Activities	-	Using PSCQ-C questionnaire and TGMD-2	Quantitative: quasi-experimental control group pre-post design Paired t-test	There is an effect of the Sport Education Model (SEM) on both physical self-concept and learning outcomes in invasion games.
9	Slamet et al., (2021)	To identify the differences in student development and mastery through the implementation of the Sport Education Model (SEM) with and without leadership content.	80 college students	Handball	8 meetings	Pre-post using Identity Leadership Inventory (ILI) and Games Performance Assessment Instrument (GPAI)	Quantitative: Quasi-experimental pre-post control group design manova	There was a 27% difference in leadership development between the simulated SEM group and the non-simulated SEM group. However, regarding game performance, both groups showed positive outcomes.
10	Karisman, (2023)	Hybrid sports education and step game approach	36 elementary school students	Volleyball	14 meeting, twice a week	Sport Orienttation Questionaire (SOQ) and The Game Performance Assesment Instrument (GPAI)	Quantitative: one-shot case study	The combined learning model of Sport Education Model (SEM) and Step Game Approach (SGA) positively enhances students' volleyball playing techniques and skills.
11	Ginanjar et al., (2023)	SEM for College Student Sport Orientation	35 college students	Futsal	15 lessons with 100 minutes, time once a week	Pre-post Sport Orientation Questionnaire	Quantitative: one-group pretest-posttest design; Paired t-test	SE as much as possible is used in lectures for college students in physical education and sports programmes that used a variety of sports.
12	Ginanjar, Mudzakir, et al., (2023)	Investigated influence SE on student motivation	20 student elementary school	Badminton	one semester	Motivation questionare to student and	Quantitative description: one-shot case	Badminton Sport Education (SE) has an effect on the learning motivation of upper primary school students, the level of

No	Author	Focus of The Study	Participant/ Context	Sports	Length of Research	Data Sources	Analysis	Results
			6th grade			interview teachers	study	learning motivation of upper primary school students after using badminton SE as a whole tends to be categorized as good.
13	Kharisma et al., (2024)	Investigated influence SE on colloge student motivation	78 college students	Volleyball	15 lessons	Used the SRQ-L for student	Quantitative: matching-only posttest-only control group design; independent t test	There is a difference in the impact of student learning motivation between the Sport Education (SE) model and conventional methods, with SE proving to be more effective than conventional approaches.
14	Ramadhan et al., (2024)	The impact of Sport Education (SE) on students' motivation to learn through handball	58 college students	Handball	15 lessons	Used a learning Self-Regulation Questionnaire	Quantitative: one-shot case study; descriptive statistics.	SE using handball influenced student learning motivation.
15	Agustin et al., (2024)	Impact of SEM on student leadership	22 college students	Badminton	-	Identity Leadership Inventory-Short Form (ILI-SF)	Quantitative: posttest only design	The Sport Education (SE) model influences student leadership.
16	Andriani et al., (2024)	The Effect of the Sport Education Model (SEM) Learning Model on Increasing Positive Youth Development (PYD)	72 junior high school students, 8th grade	Not Mention	14 lessons	Used a Positive Youth Development scale	None-quivalent control group design	Sport Education Model (SEM) can improve students' Positive Youth Development (PYD).
17	Sukiri et al., (2024)	The effect of sport education model on self-empowerment and self-confidenc	429 high school students	Not Mention	co-education and meet twice a week for 8 weeks	Psychological Empowerment Instrument and the Competitive State Anxiety Inventory-2 (CSAI-2)	One-group pretest-posttest design	Sport Education Model (SEM) is able to significantly increase students' self-confidence and self-empowerment better than the traditional teaching.

Q1. What is the distribution of participants from the implementation of SEM so far?

The distribution of participants in terms of education level that appeared most frequently in this study was junior high school and college students with six studies, followed by elementary school with three studies, senior high school with two studies, and college students with 343 studies. Regarding the participants, a total of 1.184 students were surveyed, consisting of elementary school = 98, junior high school = 294, high school = 449, and college = 343. The interventions ranged from 8 to 16 meetings in one semester.

Q2. What materials are used in a season of SEM?

Figure 1 illustrates the variety of sports selected for the season under study. Although the graphic categories list the parent's name for each sport, it is important to recognise that many of these sports are modified versions of the original game, especially in the match preparation sessions. This is in accordance with the characteristics of SEM, which demands a modification in the selection of student learning activities, with the aim of students becoming more active and maximising their learning according to their developmental level (Siedentop et al., 2019).

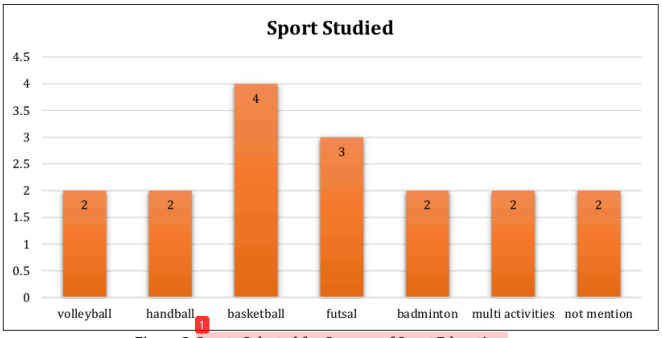

Figure 2. Sports Selected for Seasons of Sport Education.

Figure 2 shows the use of materials in SEM learning, mostly using invasion games (handball, basketball, futsal) and net games (volleyball, badminton). There were two articles that mentioned implementing SEM with more than one game, and the other two articles did not mention the types of games implemented in one SEM season.

Q3. What are the methodologies that have been used to investigate SEM research?

The research methodology used was experimental design, but not all used a control group as a comparison. 13 articles used a pre-experiment design, three articles used a control group and 1 article used the ex post facto method. If we look at the dominance of the research design carried out, it is actually not strong enough for internal validity because the pre-experimental design lacks a control group (Fraenkel et al., 2012). Therefore, the impact of SEM reported by previous researchers can still be questioned for its accuracy and deserves to be re-examined with a better research design with a comparison class, for example, using a quasi-experimental or factorial design. Another interesting point is that all of the papers we reported used a quantitative approach in

contrast to the reviews conducted by Wallhead and O'sullivan (2005) and Hastie et al., (2011) which were dominated by qualitative. Therefore, it is very necessary for future researchers to try to use qualitative research. Instruments used in qualitative research can complement information needs that do not appear in quantitative approaches, such as field notes during the research process and interviews with subjects who will certainly be able to dig deeper into the information needed. In a study, sometimes research subjects for elementary school age are constrained in conducting certain tests or in filling out questionnaires, therefore other methods are needed, such as Macphail et al., (2004) and Mowling et al., (2006) using pictures and asking students to narrate about the pictures to gain a deeper understanding of 4-5 year old students' perceptions of SEM learning. For example, Hastie and Curtner-Smith (2006) and Curtner-Smith & Sofo (2004) employed critical incident techniques to obtain a more detailed and enduring account of students' and pre-service teachers' experiences with SEM learning.

Q4. What impact variables are studied from SEM implementation?

Next, we report an overview of the variables tested as a result or impact of the SEM implementation. In our review, motivation is the most developed in the application of SEM, which is about six papers, both the motivation of elementary school students and students in higher education. The motivation referred to specifically from the study is related to learning motivation and also motivation in doing movements and sports. The second most common variables are leadership, gameplay, tactical awareness and sport orientation. In general, the variables that emerge are non-physical aspects, and it is not surprising because it is in line with many studies that have been conductedby (Bessa et al., 2021; Araújo et al., 2014; Chu & Zhang, 2018).

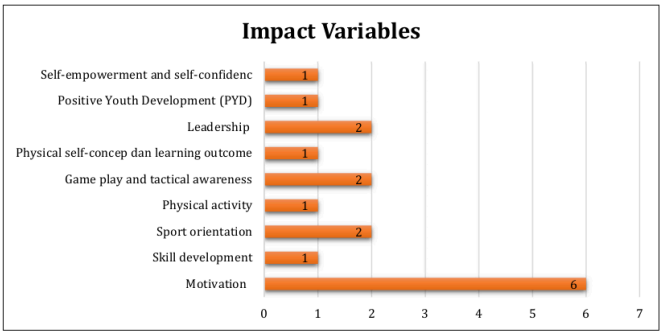

Figure 3. Impact Variables for are Studied from SEM Implementation

The purpose of this systematic review is to describe and examine what is currently known about the implementation of SEM in physical education in Indonesia in order to provide direction for future research and practice. The first question was, 'What is the distribution of participants from the implementation of SEM so far? In fact, SEM is indeed the most widely used model, especially in developed countries, with more than 200 studies grouped in seven literature reviews from 2005 to 2019 (Fernandez-Rio & Iglesias, 2024). One reason behind this success could be that it focuses on sport contents, which

still are the most popular in physical education everywhere (Casey & Kirk, 2020). However, this model still has weaknesses that must be anticipated in the future, SEM is considered less suitable for girls and low-skilled children (Fernandez-Rio & Iglesias, 2024). SEM reviews acknowledged that some implementations favoured high-skilled boys (Araújo et al., 2014).

The second research question was: (Q2) What materials are used in a season of SEM? Results showed that the materials are dominated by team sports, and there is no implementation that uses individual sport materials. Of these studies, none of the SEM seasons utilised individual game materials, continuing the trend identified by Wallhead and O'sullivan, (2005), and by Hastie et al. (2011) review that only one study used fitness activities as "sport" over the course of a season. Casey et al. (2021) have also noted that one of the weaknesses in the implementation of Model based Practice is that individual exercise is underutilised, and therefore it is recommended to try to adapt it in the future. The under-representation of individual sports has also been revealed in the study (Bessa et al., 2021; Evangelio et al., 2018). Therefore, it is very necessary to try individual sports material in the future so that it can be a comparison and can be a new alternative in implementing SEM.

The third research question was: (Q3) What are the methodologies that have been used to investigate SEM research? When referring to what Hastie et al. (2011) wrote and also looking at the findings of the review presented in Table 1 there are several recommendations for future research. The first is the need for comparative research and a more sophisticated design. In research, the existence of a comparison is important so that the internal validity of the research results is strong or in other words, a comparison group can ensure that the observed cause-and-effect relationship is truly accurate and not affected by external factors (Fraenkel et al., 2012). If we look at the SEM review in table 1 above, which is dominated by the absence of comparison classes and limited participants, then future researchers should use comparison classes to improve the accuracy of research results on SEM. This is also in line with Manninen and Campbell (2021) review, which suggests better experimental designs and comparisons to test the efficacy of SEM, and Zhang et al. (2024), who suggest a large number of participants.

Next, referring to Siedentop et al. (2019), that the recommended duration for one season of SEM at the junior and senior high school levels is a minimum of 18 meetings; most of the studies in this review failed to achieve this goal. Despite the positive result achieved by SEM in this review, units of longer duration can certainly lead to significant differences between the analysed models and meaningful experiences, given that SEM has more to accomplish. Therefore, to be successful and ensure more reliable results, we recommend that future research should prioritise proper unit/season planning and design. The next recommendation is the need for qualitative studies. Although qualitative data eliminates metric comparisons among SEM learning outcomes, qualitative analysis can help understand the change processes inherent in learning, as well as student and teacher perceptions and feelings when SEM is implemented (Bessa et al., 2021). In addition, empirical information regarding teachers' goals and experiences in implementing Curtner-Smith et al. (2008) or other teacher development versions of SEM elements is needed to ensure sustainability of SEM use over time (Gutiérrez et al., 2021).

The final research question was (Q4): What impact variables are studied from SEM implementation? In general, there are still very limited aspects tested in the implementation of SEM in Indonesia. SEM is the most widely used model, according to previous reviews covering a large set of positive learning outcomes: responsibility, affiliation and ownership, inclusion, peer support and equity, teamwork, cooperation and compliance, autonomy, empathy and friendship, fair play, empowerment, problem-solving and decision-making, leadership, trust and confidence, self-determination, and

assertiveness (Fernandez-Rio & Iglesias, 2024). This is in line with Wallhead and O'Sullivan (2005) and Hastie et al., (2011), which focused on variables like cooperation, empathy or self-discipline, but also on attitudes (enthusiasm, enjoyment) and values (affinity, equity, culture). They mention too that SE has the potential to promote the positive cultural dimensions of sport and physical activity and offer a challenge to the exclusionary discourses of much institutionalised sport.

CONCLUSION

The overview conducted in this study has provided an opportunity to assess the implementation of SEM in physical education learning and to understand it from a systematic perspective. There is ample evidence to support the effectiveness of SEM interventions in promoting positive outcomes across four domains of learning: physical, cognitive, social, and affective. However, some weaknesses have been identified, including the lack of studies on individualised sports, limited diversity in research designs, and the narrow scope of impact variables examined. Additionally, this literature review is constrained by the availability and scope of existing studies, which may lead to potential biases in the interpretation of SEM implementation and outcomes. These limitations highlight the need for further exploration and refinement of SEM implementation to ensure its broader applicability and effectiveness in various physical education settings.

From a literature review perspective, this study is limited by the inclusion of articles primarily published in indexed journals, which may exclude relevant research from non-indexed sources or grey literature. Furthermore, variations in methodologies across the reviewed studies may affect the consistency of findings, making it challenging to draw definitive conclusions about SEM effectiveness across different educational contexts. Future research should address these limitations by conducting meta-analyses to quantify the impact of SEM more systematically, incorporating a broader range of studies, and utilising diverse methodological approaches to strengthen the evidence base. Additionally, more longitudinal studies are needed to assess the long-term impact of SEM interventions beyond short-term classroom settings. This study contributes to the growing body of knowledge on SEM by systematically synthesising evidence on its implementation and impact within the Indonesian context. By identifying key strengths, limitations, and research gaps, this review serves as a foundation for future studies aimed at refining and optimising SEM for diverse learning environments. It also provides valuable insights for educators and policymakers to enhance physical education curricula through evidence-based pedagogical models. Strengthening SEM research and practice through more robust literature reviews and empirical studies can ultimately lead to improved student engagement, learning outcomes, and overall quality of physical education programmes.

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