

# REVIEW OF EMPIRICAL RESEARCH ON SPORTS EDUCATION MODEL (SEM) IN RECENT FIVE YEARS (2019 - PRESENT)

Xiaoyuan Liu<sup>1</sup>  
Radzliyana Binti Radzuwan<sup>2</sup>  
Nadiah Diyana Tan Binti Abdullah<sup>3</sup>

<sup>1</sup> Faculty of sport science and recreation, Universiti Teknologi Mara (UiTM), Malaysia,  
(E-mail: lxy0209@ncu.edu.cn)

<sup>2</sup> Faculty of sport science and recreation, Universiti Teknologi Mara (UiTM), Malaysia.  
(E-mail: radzliyana@uitm.edu.my)

<sup>3</sup> Faculty of sport science and recreation, Universiti Teknologi Mara (UiTM), Malaysia.  
(E-mail: nadia750@uitm.edu.my)

## Article history

Received date : 2-1-2024  
Revised date : 3-1-2024  
Accepted date : 15-3-2024  
Published date : 15-4-2024

## To cite this document:

Tao, H. J., & Mustaffa Halabi, K. N. (2024). Rural homestays design towards sustainable tourism in Nanchang. *Journal of Islamic, Social, Economics and Development (JISED)*, 9 (61), 703 – 715.

**Abstract:** *Siedentop developed SEM to provide students with sports knowledge. As more and more researchers continue to study SEM, empirical research has become the content of most researchers' research on SEM. By using the method of literature review, the researcher obtained and sorted out relevant literature through google research, WOS, CNKI and other databases, in order to provide evidence to support the view that this model can realize physical education learning. The research aim to summarize and analyze the empirical research conclusions of SEM in recent five years, and provide some valuable reference for the application and development of SEM in physical education in China. This study is the latest review of SEM empirical research, including the latest research trends in future research.*

**Keywords:** *Sport Education Model, Empirical Research, Physical Education Teaching Model.*

## Introduction

SEM refers to expanding different teaching units into different sports seasons in the whole teaching cycle. Divide the learning members into several teams with equal strength, take competition as the main carrier, and make full use of direct teaching, peer teaching, cooperative learning, teamwork and role-playing, so that students can experience and personally experience various real and rich sports situations. It aims to cultivate students into people with certain sports skills, sports enthusiasm and sports cultural literacy (Li, 2020).

Since the idea of SEM was put forward by Siedentop in the late 1970s, matured in the 1990s, and gradually systematized in the early 21st century, many scholars have systematically improved the theory of SEM and conducted a large number of empirical studies on teaching. Among them, the empirical research involves students' physical health, knowledge and technical and tactical ability, social ability and adaptability, learning interest and sports motivation, social responsibility and values, and other aspects. Including the relationship between teachers and students, the inclusiveness in physical education teaching, the mixed application of SEM and other teaching models and so on.

SEM is an educational project and model, which helps students become active and healthy, and promotes a comprehensive experience. SEM effectively provides students with cognitive, emotional and psychomotor aspects of physical education. The results show that students who have experienced SEM have a higher to moderate level of physical activity (Rocamora et al., 2019). Other studies show that increasing physical activity can increase men's overall participation in physical activity and aerobic exercise (Cawley et al., 2013). SEM promotes an intellectual atmosphere more than traditional physical education methods, and students experience more independence, ability and connection, which naturally promotes self-motivation in SEM (Chu & Zhang, 2018). In addition, it is found that SEM plays a positive role in increasing motivation (Perlman & Caputi, 2017). Meanwhile, motivation in SEM can provide other benefits, including improving social skills, self-confidence and positive attitude (De Mayer et al., 2014). On the basis of the original research results, more researchers have studied SEM in recent five years and obtained some new results.

The innovation of physical education and teaching is of great significance to the development of physical education and the construction of a sports power in China in the new era. Therefore, more and more physical education workers in China are trying to explore a physical education teaching model that conforms to China's national conditions. This systematic review is organized around the impact of SEM on different aspects in physical education classes. For all of the above, the objective of this article is to provide an updated international systematic review of the implementation of SEM on different influences in physical education classes to identify new trends in research.

## Method

The research method of this study is literature review. Literature review includes comments, summaries and author's opinions on various documents (articles, books, slides, websites, etc.). The purpose of this study is to explore the application of SEM in physical education class, China. The analysis used in this literature review includes the following three steps: 1) Collect the literature of SEM empirical research; 2) Classification according to the research contents of literature; 3) Analyze and summarize all kinds of literatures, and put forward conclusions.

The researchers collected online through Google Research, WOS, CNKI, and then read and selected articles one by one until they obtained 79 empirical documents related to SEM.

## Result and Discussion

### **The Influence of SEM on Physical Fitness and Health Level**

Zhang and Su (2020) compared the traditional physical education teaching model (TPETM) with SEM, and the results showed that SEM was more helpful to improve the teaching effect of college students' physical fitness, and effectively improved students' physical health. In the same year, Segovia and Gutierrez (2020) verified that SEM was regarded as a teaching model with higher demand by students, and SEM improved students' physique.

Liu (2021) used WeChat platform to assist SEM in experimental design and compared it with TPETM. The results show that WeChat-assisted SEM is more effective than TPETM in improving speed and sensitivity. In the same year,

Ginanjar et al. (2023) conducted an experimental study on 40 primary school students in Darfur. The results showed that the students who studied by SEM achieved better results than those who studied by TPETM in terms of physical activity and performance of primary school students learning to skip rope. Cheng (2023) studied the influence of multimedia-assisted SEM on tennis teaching in universities of China, and the results proved that multimedia-assisted SEM can effectively improve students' physical fitness.

Wahl-Alexander and Camic (2022) explored the health-related fitness level and physical activity trend of teenagers who participated in the fitness-based SEM season in the camp environment. The research results show that teenagers have accumulated a high level of physical activity in each class, and made significant improvements in muscle strength, cardiovascular endurance and body mass index. Under the background of COVID-19, Quinonero-Matinez et al. (2023) studied the influence of SEM on health. He took 76 secondary school students aged 12-14 as the research object and developed a mixture of two models in the experimental group, namely, the teaching personal and social responsibility and sport education model. The experimental results show that the physical activity level of the control group and the experimental group has been improved, and the standing long jump and speed agility of the control group have also been significantly improved. On the contrary, in the experimental group, neither of the two tests improved significantly, but the rate of extracurricular sports activities was higher.

It can be seen that SEM can promote the change of sports habits (Quinone ro-Matinez et al., 2023) so as to realize lifelong physical exercise (Zhang & Su, 2020; Zhang, 2020). Therefore, SEM has a stronger ability to advocate a healthy lifestyle than TPETM.

### **The Influence of SEM on Knowledge Learning, Technical Ability and Tactical Ability**

In the field of table tennis teaching research, Xu et al. (2019) explored the influence of SEM on the skills of high school table tennis students. The results show that the skills of SEM and TPETM have been significantly improved. However, SEM students have made more progress in forehand drive and serve than TPETM students. In addition, SEM has a very significant effect on improving students' footwork and agility. Zhang et al. (2019) found in the research that SEM has better learning effect and stronger stability in the secondary evaluation of

backhand block and stroke of table tennis, and it also has better learning effect in the secondary evaluation and technical evaluation of forehand attack. Moreover, SEM has effectively improved students' understanding and application of table tennis theory knowledge and basic referee rules (Mao, 2020).

In the field of volleyball teaching, Araujo et al. (2020) research shows that applying multiple sports seasons to the same sport in SEM can improve students' tactics and stimulate the development of students' tactical awareness. Li et al. (2022) research shows that: compared with TPETM, all students who use SEM have made remarkable achievements in all indicators, and have also shown greater progress in the whole course. Hastie et al. (2023) participated in TPETM and SEM volleyball courses for one semester for 110 students majoring in physical education in Central China, China. Research shows that students in the SEM classes had 6.67 times higher odds to reach the benchmark than students in the traditional instruction classes. The results show that SEM's unique accountability mechanism has been proved to improve knowledge and performance. Therefore, SEM has a more significant effect on students' volleyball skills than TPETM (Shi, 2021).

In the field of basketball teaching research, Dong (2023) conducted a teaching experiment by comparing SEM with TPETM in order to explore the most suitable teaching model of basketball compulsory course for physical education majors in China University. The research shows that SEM has a more significant effect on improving basketball skills of college students majoring in physical education. In addition, SEM can also improve students' basketball ability and knowledge (Guo, 2021) and competition level (Iserbyt et al., 2022).

In the field of football teaching research, Zhang (2019) integrated SEM into the high school football classroom to carry out teaching experiments. The research proved that SEM has incomparable advantages in learning and improving the level of football skills such as ball-jumping technology and dribbling technology. In addition, the teaching game for understanding integrated SEM is helpful to college students' football cognitive learning, including understanding the rules of the game, acquiring the basic knowledge of football, cultivating sports etiquette and perceiving the application of tactics (Jia, 2021).

In the field of badminton teaching research, Wang (2022) took the first-year students of China Shanghai High School as the experimental object to carry out the teaching experiment of integrating SEM into badminton course. The research shows that compared with TPETM, SEM is more helpful to promote the mastery and application of badminton skills of students. Xu et al. (2023) found that the integration of SEM into badminton teaching can effectively improve the tactical literacy, professional content knowledge and competition ability of students majoring in physical education in China University. Its characteristics play a highly guiding role in developing students' tactical awareness, teaching knowledge and competition ability in real scenes.

A large number of empirical studies on SEM mostly focus on popular ball games. In the research of other sports, some scholars have also found that SEM has obvious improvement effect on the technical level of other sports, which is more advantageous than TPETM. For example, sports dance in university (Liu, 2022a), yoga in college (Zou, 2022), aerobics in college (Zhang, 2020), cheerleading in senior high school (Liu, 2020), sanda in universities (Ren, 2021) and Wushu in primary schools (Bai, 2021). Li et al. (2022) emphasized that SEM can help motivate students to achieve multiple goals of physical education in China University.

However, in the research of Liu (2022b), the results show that SEM is not as effective as TPETM in cultivating middle school students' track and field skills. Therefore, SEM may have different teaching effects in different projects and different age groups, and detailed classification and empirical research are needed in future research.

### **The Influence of SEM on Social Ability and Adaptability**

Kao and Luo (2019) selected 115 students from badminton class as subjects. Through the comparative teaching research between SEM and DI, the research shows that students can experience success in the SEM teamwork environment and avoid the common sense of loss and helplessness in individual competitive learning. In the same year, in Kang's (2019) study, a total of 46 college students took a 15-week taekwondo course with SEM. The research shows that the use of SEM in Taekwondo classes can create a learning environment that enhances students' learning and enables them to have fun in learning. Kao (2019) proved that SEM can effectively improve team cohesion and related social skills in college basketball courses, and students may continue into adulthood. Not only in universities, Guo (2021) has also proved that SEM enables junior high school students to have the ability of active unity and cooperation, makes the emotional connection between students and teachers and students closer, and actively creates intimate interpersonal relationships. At the same time, SEM can effectively enhance teamwork spirit, improve peer interaction, enhance leadership, enhance sense of responsibility and social adaptability (Zou, 2022), and help to start new positive social relations and eliminate negative relations among students in the team (Casado-Robles et al., 2022).

Luna et al. (2020) used the behavioral assessment system for children and adolescents (BASC) to assess their psychosocial adaptation through the intervention of SEM and DI. The results showed that the anxiety of the experimental group (SEM) was significantly reduced. In the same year, Luna et al. (2020) studied and evaluated the effectiveness of the intervention measures based on SEM and the intervention measures based on the traditional direct guidance model for children. The study showed that the emotional component of subjective well-being in the experimental group was significantly improved and anxiety was reduced.

Choi et al. (2021) found that SEM can reduce the perceived frustrating motivational atmosphere. Under the limited control and self-evolution atmosphere, SEM is beneficial to the development of college students' behavior field. In the same year, Mendez-Gimenez et al. (2021) conducted an experimental teaching research on 212 senior high school students, and the results confirmed that SEM has the potential to alleviate the decline of adolescent motivation and meet basic psychological needs. In addition, SEM has been proved to be an effective method to improve the quotient dimension in PE environment.

It can be seen that SEM is more conducive to cultivating students' interpersonal skills than TPETM (Zhang, 2020; Mao, 2020; Fernandez-Rio et al, 2020). Moreover, Fernandez-Rio et al (2020) research also shows that SEM's cognition of group handling, positive interdependence, promoting interaction, personal responsibility and global cooperation is significantly higher than TPETM. SEM reflects the positive influence of physical exercise on improving mental health and interpersonal communication, and constantly improves psychological quality (Liu, 2022a), so SEM can improve the ability of social adaptation more than traditional teaching method (Zhang, 2020).

### **The Influence of SEM On Learning Interest and Sport Motivation**

In the past five years, a large number of researchers have proved that SEM can effectively stimulate and improve students' interest in physical education (Liu, 2020; Guo, 2021; Zhang, 2019; Wang, 2022; Liu, 2022b, Cheng, 2023) and sports motivation (Shi, 2021; Hastie et al., 2023; Cheng, 2023), strengthened students' initiative and enthusiasm in learning (Zhang, 2020), and fully and efficiently developed students' autonomous and voluntary learning ability (Neslihan, 2020; Guo, 2021). In the research of Shi (2021), both SEM and TPETM can improve the sports motivation of college students, but SEM can stimulate students' internal motivation (Ren, 2021 ; ; Manninen & Campbell, 2022; Martinez et al., 2021) and autonomy (Bai, 2021) are more effective and have a better effect on students' sports motivation. Therefore, SEM has a greater impact on students' sports motivation than TPETM, especially in increasing the sports motivation of low-achieving students (Kao & Luo, 2019).

At the same time, Franco et al. (2021) also found that the SEM intervention developed in the special situation of COVID-19 affected the motivation of different students in physical education class. The research results show that students can improve their autonomy, ability and satisfaction of relevant needs in physical education class. In addition, it can also enhance students' behavioral involvement. Therefore, even under special circumstances, SEM seems to be an effective method to improve students' positive motivation in sports environment.

The research results of Hernandez-Andreo et al. (2020) show that SEM has significant differences in the dimensions of intrinsic motivation, identity regulation, internalization regulation and external regulation, and thinks that SEM is the best mode to promote motivation, emphasizing that teachers should consider it as a method to improve students' motivation. In the same year, Garcia-Gonzalez et al. (2020), based on the theory of self-determination (SDT), aims to test whether the volleyball teaching unit of mixed SEM and understanding teaching game (TGfU) has the same effect on a set of SDT-related variables according to students' initial motivation. The results show that SEM/TGfU can be a tool to improve the motivation of students with low enthusiasm in volleyball. Liu (2021) also confirmed the view that the mixed mode of SEM has a positive influence on students' motivation, and the research proved that using WeChat to assist SEM can greatly improve students' motivation to learn tennis. It can be seen that SEM mixed with other teaching models can further enhance sports motivation. Rocamora et al. (2022) explored the effects of SEM and cooperative learning mode on pupils' motivation, and the results showed that SEM mixed mode also positively influenced students' sports motivation.

Different from other researchers' research fields, Ginanjar et al (2021) studied the motivation of the role in SEM. Compared with all other roles in SEM, the role of coach has a higher level of motivation. Martinez et al. (2021) analyzed the influence of progressive and multi-year SEM on pupils' motivation. Comparative analysis shows that self-education conditions have a positive impact on intrinsic motivation (girls), but have a negative impact on boys' enthusiasm. It can be seen that the promotion of motivation by SEM is also related to age and gender.

### **The Influence of SEM On Social Responsibility and Values**

Burgueno et al. (2020) point out that SEM is an effective pedagogical model to be taken into consideration by physical education teachers in order to optimally promote the high school student's moral and ethical education via the development of sportsmanship orientations in the context of school physical education. Bessa et al. (2020) conducted an eight-week teaching experiment on 480 senior high school students from eight different schools in northern Portugal.

The research shows that students who participated in SEM significantly improved their sense of personal and social responsibility, but there was no significant difference in student engagement. In the same year, the research of Burgueno and Medina-Casaubon (2020) proved that students under SEM teaching have increased their respect for social customs, rules and judgments, and their full commitment and respect for their opponents. Therefore, these two scholars believe that SEM is an effective model for schools to optimize ideological and moral education for high school students.

Anwar et al. (2020) used quasi-experimental and semi-qualitative research methods to study middle school students in Caraven, and integrated students' positive attitudes through SEM provided by physical education class. The research shows that the cultivation of students' responsibility and leadership attitude through SEM and students' attitude towards learning achievements have undergone positive and significant changes. Ji. (2020) proved that SEM has a significant advantage in promoting the benign changes of students' mental health in all dimensions, and can more effectively and comprehensively promote the cultivation and formation of students' core literacy in physical education and health courses.

Manninen and Campbell (2022) systematically summarized the influence of SEM on prosocial attitude with multilevel meta-analysis, and thought that SEM could promote prosocial attitude more than TPETM. Garcia-Lopez et al.(2022) analyzed the coaches' views on the effect of SEM training, especially the role assignment in enhancing the ability of socially vulnerable background (SVB) children who participated in community projects. The results showed that the coaches thought that SEM role was a real empowerment strategy, which could help SVB children gain meaningful participation experience in a safe environment, share power, collaborate and challenge gender stereotypes through their responsibilities.

SEM also has a significant impact on students' sense of responsibility (Liu et al. 2021; Chu et al., 2022), team sense of responsibility (Zhang, 2020), cooperative spirit (Zhang, 2019) and SEM Presents Remarkable Effects on Exercise Self-efficacy (Liu et al. 2021). According to Choi et al. (2021), SEM has been improved in the effective field of sports literacy and social field. Therefore, SEM conforms to the advanced concept of the current curriculum standards of physical education and health in ordinary senior high schools in China (Ji, 2020).

### **The Influence of SEM on Other Aspects**

In addition, some scholars have studied SEM in other aspects. Pan et al. (2019) combined TPRS (Teaching Personal and Responsiveness) with SEM and TPETM for 16 weeks, with a total of 32 classes. The results show that the TPRS-SEM experimental group can improve the learning effect more than the TPRS-TPETM control group in the dependent variables such as sports self-efficacy, sports passion, responsibility and game performance. At the same time, TPRS-SEM group can improve more learning effects in the fields of cognition, psychomotor and emotion than TPRS-TPETM group. In the same year, Pritchard et al. (2019) investigated the influence of SEM tactical model on college students' physical activity level. Research shows that SEM combined with tactics can help participants reach the recommended 50% level of moderate to intense physical activity.

Rocamora et al. (2019) evaluated the effects of SEM and direct instruction (DI) on physical activity intensity, game performance and friendship goals of primary school students. The results show that students who have experienced SEM have a significantly higher level of light and moderate physical activity, friendship approaching and avoiding friendship goals, while

students who have experienced DI have a significantly higher level of sedentary physical activity. At the same time, the game performance of the two groups of students has improved significantly, but the progress of SEM group is even greater.

In the research from Morales-Ortiz et al. (2021), the results derived from MANOVA test showed a significant increase in the levels of perception of PE and the teacher, difficulty of PE, usefulness of PE and preference for PE in students after teaching by SEM. These findings are discussed highlighting the importance of SEM in the development of the students' attitudes towards PE as a means to promote their comprehensive education.

After that, Rocamora et al. (2022) explored the effect of SME and cooperative learning model on the physical activity level of primary school students in handball course. The results showed that SEM students had a higher level of moderate to intense physical activity level than mixed model. Amato et al. (2022) research shows that the code of conduct and the role of coaches help to guide students' attention to the goals of teaching units, such as attitude and tactical and technical knowledge. Lopez-Lemus et al. (2023) research shows that the application of SEM/TGfU mixed model can increase and help promote boys and girls' game participation and performance, fun, perception and willingness to participate in sports activities.

In addition, SEM has been proved by researchers to improve students' learning attitude (Xu et al., 2019; Zhang et al., 2019; Guo, 2021; Zou, 2022; ), students' subjective well-being and trait emotional intelligence (Luna et al., 2019), emotional attitude (Dong, 2023), health awareness (Zhang, 2019), mental health level (Zou, 2022), emotional intelligence level (Neslihan, 2020), leadership ability (Chu et al., 2022), empowerment and self-confidence (Bessa et al. 2021), and discovering literacy and enthusiasm (Martinez et al., 2019). It can be seen that researchers have studied SEM in various fields, and it has been proved that SEM has considerable advantages in helping to learn sports knowledge.

## Conclusion

To sum up, scholars generally believe that SEM can have a more positive impact on students' learning enthusiasm, sports motivation, social skills and values than TPETM. In addition, the promotion of teacher-student relationship, the progress of low-level students and the effect of mixed teaching mode are more remarkable. It can be seen that scholars' empirical research on SEM is mature and detailed. Most of the empirical research is based on comparative teaching experiments. The experiment takes SEM and TPETM as independent variables, students' physical fitness, knowledge and skill learning, sports motivation, social ability and team cohesion as dependent variables, and measures them through relevant scales and evaluation criteria, and draws a conclusion after analysis. It is generally believed that students' sports motivation, social skills and team cohesion under SEM are obviously superior to the traditional teaching mode, and it also has a significant effect on physical fitness and knowledge and skills learning.

In addition, more and more researchers began to combine SEM with other teaching modes, aiming at creating more new physical education teaching modes by using the advantages of SEM, but the combination of SEM needs further verification and research. Generally speaking, SEM is very effective and worthy of reference for psychological influence. This also confirms the view of China scholar Gao & Gao (2020), the goal of SEM is highly consistent with the current physical education curriculum reform that advocates core literacy in China. They think

that the construction logic of SEM is highly consistent with the curriculum reform concept advocated by China policy, and it is supported by empirical research.

## Reference

- Amato, C., de Oliveira, E. R., leonardi, T. J., Ginciene, G. (2022). Emerging Learning From Different Role Played BY Students in The Sport Education Model. *Movimento - Porto Alegre*, 28, <https://doi.org/10.22456/1982-8918.114101>
- Anwar, A. S., Hendrayana, Y., Ma'mun, A. (2020). The Development of Responsibility and Leadership Through Sport Education Model. *Proceedings of the 4th International Conference on Sport Science, Health, and Physical Education (ICSSHPE 2019)*. <https://doi.org/10.2991/ahsr.k.200214.049>
- Araujo, R., Delgado, M., Azevedo, E., Mesquite, I. (2020). Students' Tactical Understanding During a Hybrid Sport Education / Step-Game Approach Model Volleyball Teaching Unit. *Sustainability*, 26. <https://doi.org/10.22456/1982-8918.97764>
- Bai, M. Y. (2021). Research on The Application of Sports Education Model in Wushu Teaching in Primary Schools —— Taking Taiyuan Yuancheng Teachers Bilingual School as an example. [Master. Northwest Normal University]. Lanzhou.
- Bessa, C., Hastie, P., Rosado, A., Mesquita, I. (2020). Differences Between Sport Education and Traditional Teaching in Developing Students' Engagement and Responsibility. *Journal of Physical Education and Sport*, 20(6), 2536-3545. <https://doi.org/10.7752/jpes.2020.06477>
- Bessa, C., Hastie, P., Rosado, A., Mesquita, I. (2021). Sport Education and Traditional Teaching: Influence on Students' Empowerment and Self-Confidence in High School Physical Education Classes. *Sustainability*, 13(2). <https://doi.org/10.3390/su13020578>
- Burgueno, R., Medina-Casabon, J. (2020). Sport Education and Sportsmanship Orientations: An Intervention in High School Students. *International Journal of Environmental Research and Public Health*, 17(3), 837. <https://doi.org/10.3390/ijerph17030837>
- Casado-Robles, C., Mayorga-Vega, D., Guijarro-Romero, S., Vicina, J. (2022). Effect of a Sport Education-based Teaching Unit in Physical Education on High School Students' Social Networks and Quantitative Networks and Quantitative sociometry Scores: A Cluster Randomized Control Trial. *Revista de Psicodidáctica*, 27(1), 66-75. <https://doi.org/10.1016/j.psicoe.2021.10.001>
- Cawley, J., Frisvold, D., & Meyerhoefer, C. (2013). The impact of physical education on obesity among elementary school children. *Journal of Health Economics*, 32(4), 743–755. <https://doi.org/10.1016/j.jhealeco.2013.04.006>
- Cheng, X. H. (2023). The Effect of Multimeidia-Assisted Sport Education Model on Teaching Tennis Lessons in Universities. *Applied Mathematics and Nonlinear Sciences*, 9(1). <https://doi.org/10.2478/amns.2023.2.01168>
- Choi, S. M., Sum, K. W. R., Leung, F. L. E., Wallhead, T., Morgan, K., Milton, D., Ha, S. C. A., Sit, H. P. C. (2021). Effect of Sport Education on Students' Perceived Physical Literacy, Motivation, and Physical Activity Levels in University Required Physical Education: A Cluster - Randomized Trial. *Higher Education*, 81(6), 1137-1155. <https://doi.org/10.1007/s10734-020-00603-5>
- Chu, Y. C., Chen, C., Wang, G. Q., Su, F. Z. (2022). The Effect of Education Model in Physical Education on Student Learning Behavior. *Frontiers in Psychology*, 13. <https://doi.org/10.3389/fpsyg.2022.944507>
- Chu, T. L. (Alan), & Zhang, T. (2018). A systematic review of motivational processes in Sport Education programs among high school students. *European Physical Education Review*, 24(3), 372–394. <https://doi.org/10.1177/1356336X17751231>

- De Meyer, J., Speleers, L., Tallir, I. B., Soenens, B., Vansteenkiste, M., Aelterman, N., Van den Berghe, L., & Haerens, L. (2014). Does observed controlling teaching behavior relate to students' motivation in physical education? *Journal of Educational Psychology*, 106(2), 541– 554. <https://doi.org/10.1037/a0034399>
- Dong, H. J. (2023). Experimental Research on Sports Education Model in Basketball Compulsory Course for Physical Education Majors —— Taking Guangzhou Institute of Physical Education as an example. [Master. Guangzhou Institute of Physical Education]. Guangzhou.
- Fernandez-Rio, J. & Casey, A. (2020). Sport Education as a Cooperative Learning Endeavour. *Physical Education and Sport Pedagogy*, 26(4), 275-287. <https://doi.org/10.1080/17408989.2020.1810220>
- Franco, E., Tovar, C., González-Peño, A., Coteron, J. (2021). Effects of a Sport Education Model-Based Teaching Intervention on Students' Behavioral and Motivational Outcomes within the Physical Education Setting in the COVID-19 Scenario. *Sustainability*, 2021, 13(22).
- Gao, H., & Gao, R. (2020). On the Times Value and Development of Sports Education Model. *Sports Culture Guide*, (01), 105-110.
- Garcia-Gonzalez, L., Abos, A., Diloy-Pena, S., Gil-Arias, A., Sevil-Serrano, J. (2020). Can a Hybrid Sport Education/Teaching Games for Understanding Volleyball Unit Be More Effective in Less Motivated Students? A Examination into a Set of Motivation- Related Variables. *Sustainability*, 12(15). <https://doi.org/10.3390/su12156170>
- Garcia-Lopez, L. M. & Kirk, D. (2022). Empowering Children From Socially Vulnerable Background Through The Use of Roles in Sport Education. *Sport Education And Society*, 27(6), 676-688. <https://doi.org/10.1080/13573322.2021.1897563>
- Ginanjar, A., Mubarak, M. Z., Mudzakir, D. O. (2021). College Students' Motivation after Teaching Using Sport Education Season. *International Journal of Human Movement and Sports Sciences*, 9(4A), 1-7. <https://doi.org/10.13189/sai.2021.091301>
- Ginanjar, S., Rihatno, T., Widyawan, D. (2023). The Sport Education Models on Physical Activity of Jumping Pore Performance in Elementary School. *Juara Jurnal Olahraga*, 8(3). <https://doi.org/10.33222/juara.v8i3.3413>
- Guo, Y. Z. (2021). An Experimental Study on Improving Junior High School Students' Basketball Learning Motivation by Sports Education Model. [Master. Jilin Institute of Physical Education]. Jilin.
- Hastie, P., Li, P., Liu, H. R., Zhou, X., Kong, L. S. (2023). The Impact of Sport Education on Chinese Physical Education Majors' Volleyball Content Knowledge and Performance. *Research Quarterly for Exercise and Sport*, 94(3). <https://doi.org/10.1080/02701367.2022.2026866>
- Hernandez-Andreo, L., Gomez-Marmol, A., Cifo-Izquierdo, M. (2020). Effects on Motivation and Implicit Beliefs about Self Ability Using the Sports Education Model and the Traditional Style in Secondary Education. *Sustainability*, 12(9). <https://doi.org/10.3390/su12093843>
- Iserbyt, P., Dehandschutter, T., Leysen, H., Mars, H. (2022). The Effect of a Coaching Clinic on Student-Coaches' Behavior During a Basketball Sport Education Season With Preservice Teachers. *Journal of Teaching in Physical Education*, 42(3), 563-572. <https://doi.org/10.1123/jtpe.2021-0147>.
- Ji, M. J. (2020). Experimental study on the effect of sports education model on badminton teaching in Nanxiang senior high school affiliated to Shanghai University. [Master, Shanghai Institute of Physical Education]. Shanghai.

- Jia, Z. R. (2021). Effect of Teaching Game for Understanding Integrated Sport Education Model on College Students' Football Cognitive Performance and Motor Skills. *Revista de Cercetare si Interventie Sociala*, 72, 274-287. <https://doi.org/10.33788/rcis.72.17>
- Kang, B. J. (2019). Collegiate Students' Experience and Changes: Applied Sport Education Model in Taekwondo Class. *World Taekwondo Culture Journal*. 10(3), 183-194. <https://doi.org/10.18789/jwstc.2019.24.183>
- Kao, C. C. (2019). Development of Team Cohesion and Sustained Collaboration Skills with the Sport Education Model. *Sustainability*, 11(8). <https://doi.org/10.3390/su11082348>
- Kao, C. C. & Luo, Y. J. (2019). The Influence of Low-performing Students' motivation on Selecting Courses From the Perspective of the Sport Education Model. *Physical Education of Students*, 23(6). <https://doi.org/10.15561/20755279.2019.0601>
- Li, H. Y. (2020). Multi-dimensional research on physical education in and universities in the new era and exploration of sports education model. People's Sports Press. Beijing.
- Li, P., Wang, W., Liu, H. R., Zhang, C. Hastie, P. A. (2022). The Impact of Sport Education on Chinese Physical Education Majors' Volleyball Competence and Knowledge. *Sustainability*, 14(3), 1187. <https://doi.org/10.3390/su14031187>
- Liu, L., Luo, X., Wang, Y. S. (2021). Student Self-Efficacy on Personal and Social Responsibility within A Sport Education Model. *Revista de Cercetare si Interventie Sociala*, 72, 236-247. <https://doi.org/10.33788/rcis.72.15>
- Liu, L. J. (2020). Experimental Study on The Influence of Sports Education Model on Cheerleading Teaching Effect in Senior High School. [Master. Ludong university]. Ludong.
- Liu, K. L. (2021). Experimental Study on the Influence of Wechat-assisted Sports Education Model on The Teaching Effect of Tennis General Course in Universities. [Master, Shanghai University Of Sport]. Shanghai.
- Liu, J. X. (2022a). Research on The Application of Sports Education Model in The Teaching of Sports Dance Major in Universities. [Master. Hubei Normal University]. Wuhan.
- Liu, X. Y. (2022b). Application of Sports Education Model in Junior High School Track and Field Teaching. [Master, Harbin Institute of Physical Education]. Harbin.
- Lopez-Lemus, I., Del Villar, F., Rodriguez-Gutierrez, A., Gonzalez-Silva, J., Moreno, A. (2023). Could the Hybridization of the SE/TGfU Pedagogical Models Be an Alternative for Learning Sports and Promoting Health? School Context Study. *Children-Basel*, 10(5). <https://doi.org/10.3390/children10050877>
- Luna, P., Guerrero, J. Cejudo, J. (2019). Improving Adolescents' Subjective Well-Being, Trait Emotional Intelligence and Social Anxiety through a Programme Based on the Sport Education Model. *International Journal of Environmental Research and Public Health*, 16(10). <https://doi.org/10.3390/ijerph16101821>
- Luna, P., Rodriguez-Donaire, A., Debora Rodrigo-Ruiz., Javier, C. (2020). Subjective Well-Being and Psychosocial Adjustment: Examining the Effects of an Intervention Based on the Sport Education Model on Children. *Sustainability*, 12(11), 4570. <https://doi.org/10.3390/su12114570>
- Mao, Z. T. (2020). Research on The Application of Sports Education Model in Table Tennis Elective Course in Colleges and Universities. [Master. Suzhou University].
- Manninen, M., & Campbell, S. (2022). The Effect of the Sport Education Model on Basic Needs, Intrinsic Motivation and Prosocial Attitudes: A Systematic Review and Multilevel Meta-analysis. *European Physical Education Review*, 28(1). <https://doi.org/10.1177/1356336X211017938>
- Martinez de Ojeda, D., Puente-Maxera, F., Mendez-Gimenez, A. Mahedera-Navarrete, M. P. (2019). Initial Experience with the Sport Education Model in Primary School First-grade

- Students and Teachers' Perceptions. *RETOS - Nuevas Tendencias en Educacion Fisica, Deporte y Recreacion*, 36, 203-210.
- Martinez de Ojeda, D., Puente-Maxera, F., Mendez-Gimenez, A. (2021). Motivation and Social Effect of a Multiannual Sport Education Program. *International Journal of Medicine & Science of Physical Activity & Sport / Revista Internacional de Medicina y Ciencias de la Actividad Física y del Deporte*, 21(81), 29. <https://doi.org/10.15366/rimcafd2021.81.003>
- Mendez-Gimenez, A., Mahedero-Navarrete, M. D. P., Puente-Maxera, F., De Ojeda, D. M. (2021). Effect of the Sport Education Model on Adolescents' Motivational, Emotional, and Well-being Dimensions During a School Year. *European Physical Education Review*, 28(2). <https://doi.org/10.1177/1356336X211047866>
- Morales-Ortiz, E., Burgueno, R., Cueto-Martin, B., Macarro-Moreno, J., Medina-Casaubon, J. (2021). Can Sport Education Improve Attitudes Towards Secondary Physical Education? *Revista Internacional de Medicina de la Actividad Fisica y del Deporte*, 21(83), 435-350. <https://doi.org/10.15366/rimcafd2021.83.002>
- Neslihan, A. (2020). The effect Sport Education Model-Based Social-Emotional Learning Program on Emotional Intelligence. *International Education Studies*, 13(4), 41-53. <https://doi.org/10.5539/ies.v13n4p41>
- Pan, Y. H., Huang, C. H., Lee, I. S., Hus, W. T. (2019). Comparison of Learning Effects of Merging TPSR Respectively with Sport Education and Traditional Teaching Model in High School Physical Education Classes. *Sustainability*, 11(7), 2057. <https://doi.org/10.3390/su11072057>
- Perlman, D., & Caputi, P. (2017). Examining the influence of Sport Education on the precursors of amotivation. *European Physical Education Review*, 23(2), 212–222. <https://doi.org/10.1177/1356336X16643921>
- Pritchard, T., Hansen, A., Grossman, H., Williams, M., Loomis, S. (2019). Analysis of the Sport Education Tactical Model in Badminton University Physical Activity Course. *The physical Educator*, 76, 832-847. <https://doi.org/10.18666/TPE-2019-V76-13-8800>
- Quinonero-Martinez, A. L., Cifo-Izquierdo, M. I., Marinez, B. J. S. A., Gomez-Marmol, A. (2023). Effect of the Hybridization of Social and Personal Responsibility Model and Sport Education Model on Physical Fitness Status and Physical Activity Practice. *Front Psychol*, 14. [10.3389/fpsyg.2023.1273513](https://doi.org/10.3389/fpsyg.2023.1273513)
- Ren, Y. H. (2021). An Empirical Study on The Application Effect of Sports Education Model in Sanda Teaching in universities —— Taking Shanghai Donghai Vocational and Technical College as an example. [Mater. Shanghai institute of Sport]. Shanghai.
- Rocamora, I., Fonzalez-Villora, S., Fernandez-Rio, J., Arias-Palencia, N. M. (2019). Physical Activity Levels, Game Performance and Friendship Goals Using Two Different Pedagogical Models: Sport Education and Direct Instruction. *Physical Education and Sport Pedagogy*, 24(1), 87-102. <https://doi.org/10.1080/17408989.2018.1561839>
- Rocamora, I., Casey, A., Gonzelez-Villora, S., Arias-Palencia, N. M. (2022). A Comparison of Motivation and Physical Activity Levels Between a Sport Education Season and a Hybrid Sport Education and Cooperative Learning Season. *Journal of Teaching in Physical Education*, 42(2), 350-360. <https://doi.org/10.1123/jtpe.2021-0077>
- Segovia, Y. & Gutierrez, D. (2020). Perception of Exertion, involvement and physical fitness in a HIIT Program in Physical Education. *Sport Education Model VS Traditional Approach. Retos - Nuevas Tendencias En Educación Fisica, Deporte Y Recreacion*, (38), 151-158
- Shi, Y. (2021). The Influence of Sports Education Model on College students' Volleyball Skills, Sports Motivation and Team Cohesion. [Master, Shanghai Institute of Physical Education]. Shanghai.

- Wahl-Alexander, Z. & Camic, C. (2022). Physical Activity and Fitness Markers of Male Campers Participating in a Fitness-Based Sport Education Season. *Journal of Teaching in Physical Education*, 42(1),175-183. <https://doi.org/10.1123/jtpe.2021-0072>
- Wang, Y. (2022). Experimental Research on Sports Education Mode in Badminton Teaching in Senior High School. [Master, East China Normal University]. Guangzhou.
- Xu, C. C., Gao, R. Xu, S. J. (2019). Impact of a Sport Education Season on Students' Table Tennis Skills and Attitudes in China's High School. *International Journal of Information and Education Technology*, 9(11).
- Xu, Z., Wang, W., Meng, L. (2023). Experimental Study on The Effect of Sports Education Model on Badminton Teaching in universities. 13th China University of Sport Science. <https://doi.org/10.26914/c.cnkihy.2023.069466>
- Zhang, Y. Y. (2019). Research on The Application of Sports Education Model in High School Football Teaching. [Master. Nanjing model university].
- Zhang, N. & Su, R. H. (2020). Longitudinal Research on the Application of Sport Education Model to College Physical Education. *Revista de Cercetare si Interventie Sociala*. (70), 254-267. <https://doi.org/10.33788/rcis.70.21>
- Zhang, Q., Zhang, J. H., Qi, H. H., Wang, M., Wang, M. C. (2019). Experimental Study on The Sports Education Model in Table Tennis Teaching in universities. The 11th National University of Sports Science. <https://doi.org/10.26914/c.cnkihy.2019.030324>
- Zhang, T. (2020). Experimental Study on Introducing Sports Education Model into Aerobics Course of Public Physical Education in Universities. [Master. Hunan University of Science and Technology]. Changsha.
- Zou, Y. (2022). Research on the Application of Sports Education Model in The Public Physical Education Class Teaching of Fitness Yoga in Universities. [Master. Harbin Institute of Physical Education]. Harbin.