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Hybrid sports education and step game approach: Improving volleyball skills

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Abstract

Mastering the technique of playing volleyball is important for every player. This will come in handy in gaming. Mastering it will make it easier to play and win. This study aims to determine whether step play and a hybrid approach to sport instruction will improve the skills of volleyball players. An experimental research methodology using a one-shot case study design was applied. This study was attended by 36 elementary school students using total sampling technique. They were instructed to participate in a joint sports education program between the Sport Education Model (SEM) and the Step Game Approach (SGA) for 14 meetings spread over two months, twice a week. The instruments used in this study were the Sport Orientation Questionnaire (SOQ) and the Game Performance Assessment Instrument (GPAI) were used to collect data. The results show good game performance, with yields exceeding 80% and a high proportion of each SOQ indicator, with an average of >80%. This shows that the combined learning model between SEM and SGA makes a positive contribution to students' volleyball playing techniques and skills. Through this combined learning it is hoped that students can learn techniques as well as their playing skills in real situations.

Keywords: Sport education model, step game approach, skills, volleyball.

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Authors contribution: a – Preparing concepts; b – Formulating methods; c – Conducting research; d – Processing results; e – Interpretation and conclusions; f - Editing the final version

INTRODUCTION

Learning the game of volleyball at school does not only focus on mastering playing technique skills. Students who learn volleyball also need to master the skills of playing it. Problems related to the objectives of basic competencies in the current curriculum focus more on sports skills, such as practicing variations and combinations of basic techniques of various forms of play (Schmidt, 2016). The purpose of this competency causes branching sports skills to be more dominant. There needs to be an approach or model that gives students more flexibility in playing sports games to ensure the

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balance between technical and playing skills. The problem with conventional learning is that the dominant teaching method applies skills training and technical practice in physical education (Stolz & Pill, 2014). Technical skills often ignore skills in playing, especially when playing in a team. Playing volleyball requires not only technical skills but also playing skills. Physical education learning in schools often uses direct learning, which results in a high level of student inactivity (Roberts & Fairclough, 2011). This causes students to become passive.

There are several ways to teach volleyball. Professionals concur that success in volleyball can be influenced by fundamental volleyball skills, including passing, serving, and hitting.

There are several ways to teach volleyball. Success in playing volleyball can be influenced by the basic skills of playing volleyball which include passing, serving, and hitting. Consequently, improving one's playing skills is crucial to learning and coaching volleyball. Modern volleyball requires players to move quickly, explosively, and in a variety of complicated ways while also developing actions and solving situational problems (Indrakasih et al., 2022). As the concept has changed over the last few decades, the current approach is more student-centered, problem-based, and far from a teacher-centered approach (Tan et al., 2012). Various volleyball skills can be done in various ways. For example, using various learning models such as reciprocal, TGFU, or games that lead to various techniques in volleyball games (Abbas & Reflianto, 2018; Abbott, 2019; Aini et al., 2020; Arifin et al., 2021; Aryanti et al., 2022).

Volleyball has now developed both in terms of gameplay and tactics used. Volleyball games require regular monitoring to evaluate strengths and weaknesses. Beginners, especially young students, often struggle with this skill because they are so used to the eye–hand coordination involved in performing lifetime fitness activities, such as hitting, striking or kicking, or playing other sports. Teachers must carefully introduce this skill to their students and train them through well-designed activities and drills to receive optimal teaching outcomes (Casebolt et al., 2014b). Modern scientific

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research has highlighted various methodological directions regarding the development of game technique in young volleyball players, focused on determining and implementing a training sequence, taking into account the age peculiarities of the functioning of the sensory systems. besides that currently the technology is used in various training and learning volleyball (Doroshenko et al., 2022).

In teaching the game of volleyball many methods that can be used. In this study the researchers tried to combine two models, namely Sport Education Model (SEM) and Step Games Approach (SGA). SEM is considered as one of the innovative sport-based pedagogical models, and is designed to provide an authentic and rich sport education experience in the context of physical education. At the heart of the Sports Education concept is team survival, and within these teams the allocation of students to roles other than players. Examples of roles within a team include coach, equipment manager, or fitness leader, while roles within a match include referee, scorekeeper, and statistician (R. M. F. Araújo et al., 2017). While SGA is learning with a game approach. This approach aims to make it easier for students to learn techniques in game situations (Laporta et al., 2019). In this study learning to play volleyball will use a combination of these two models. Based on the explanation above, it is clear that good basic technical skills strongly support success in playing volleyball. Learning volleyball through (SEM) and (SGA) SEM and SGAs integrated into one unit. Students will first learn Engineering through SGA and on the other hand it will also be accompanied by SEM. Students will practice and will show the results of their practice through matches. The good basic technique is one of the determinants apart from playing skills. In addition, appropriate learning is also needed so that all basic skills and playing skills can be developed. Therefore, combining SEM and SGA is expected to improve the students' technical and playing skills simultaneously. According (Turner & Martinek, 2013) Future research is expected to be able to reveal what knowledge, cognitive, and motor processes should be taught by teachers and how students can be properly assisted to acquire cognitive and motor skills

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during games. Future research is expected to be able to reveal what knowledge, cognitive, and motor processes should be taught by teachers and how students can be properly assisted to acquire cognitive and motor skills during games (Turner & Martinek, 2013). Through this research it is hoped that techniques and skills can be carried out simultaneously in real situations.

METHOD

This study used an experimental method with the one-shot case study design (Fraenkel et al., 2012). Thirty-six elementary school pupils in grade 6 were involved as the participants of the study. Volleyball lessons were conducted for seven weeks (twice per week) with 90 minutes of each meeting. This study used an experimental method with the one-shot case study design (Fraenkel et al., 2012). This study involved 36 grade 6 students, using the total sampling technique. In practice, the learning was divided into two sessions: the first with the SGA model and the second with SEM.

The research process was carried out as follows, the students involved in this study were students from grade 6. All students on each team would train skills in playing volleyball both passing, spike, block. Besides that, you will also learn defense and attack techniques. This activity will be carried out for 14 meetings which will last for three months. students are placed into nine teams of four students each for meetings 1 and 2 during the first week. The teacher's assessment of each student's volleyball learning ability guides team formation. Each team has relatively the same skill level as students are also introduced to the aims and practices of sport education in this class. This study was carried out until the fourth meeting. At meetings 5 to 10 students are allowed to practice skills in playing volleyball and playing roles in the game. Finally, at meetings 11 to 14, all students take part in the competition. at the end of the lesson an assessment will be carried out through a questionnaire and playing skills for each student.

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Table1. Hybrid SEM and SGA treatment program

Meeting	Activity
1 and 2	A description of the competition model and format, team allocation, and individual roles. Overhead passes, 1v1 team drills directed by the teacher
3	Using overhead passes and 1v1 intervention (teacher-directed instruction)
4	Exercises for teams
5	Instruction directed by the teacher: top pass, 1v1 (intervention)
6	Team drill
7	Students lead 1v1 (versus) instruction during the warm-up and overhead passes
8	Teachers-planned lesson
9	Team drills and role-playing (teacher- and student-directed joint monitoring) Student directed instruction: warm-up, overhead passing, and 1vs1 (versus)
10	Teacher-planned lessons
11-14	Students' direct instruction: warm-ups, overhead passes, and 1v1 (versus) drills (teacher-student-directed joint monitoring).

This study used the Sport Orientation Questionnaire (SOQ) to collect the data (Almond, 2014; Farshad et al., 2013; Ginanjar et al., 2019a) SOQ consists of several sub-scales: 1) competitiveness (13 items), 2) winning orientation (6 items), and 3) goal orientation (6 items). Therefore, the questionnaire consists of 25 items in total.

Table 2. Rating scale (Ginanjar et al., 2019b)

Rating	Information
81-100	Very High
61-80	High
41-60	Average
21-40	Low
0-20	Very low

In addition, systematic observation of video recordings of students' behavior while playing 4vs4 games with a time of 10 minutes was used to analyze their playing performance. The game performance assessment instrument was carried out through the Game Performance Assessment Instrument (GPAI). The GPAI instrument used referred to the volleyball game instrument (Karisman, 2020a; Memmert & Harvey, 2010) which can be seen in the following:

Table 2. Game components observed in GPAI (General Definition)

Game Components	Descriptions
Decision making	Make the right decisions about what to do with the ball during the game
Skill execution	Efficient execution of selected skills
Adjust	Player movement, both offensively and defensively, as the flow of the game demands
Cover (Defence)	Provide proper support, assistance, and support to players with the ball
Support	Provide proper support for teammates with the ball by being in a position to receive the pass
Guard/Mark	Keep the opponent right when defending
Base	Return to the original position according to the respective duties both when attacking or defending

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Table 3. Definition of behaviour in volleyball game (Karisman, 2020b)

Score	Rating	Definition
5	Highly effective performance	Always tries to share; communicate supportively to people with or without the ball on the team. Able to place the ball correctly when attacking and able to support teammates when defending.
4	Effective performance	Mostly shares: communicate supportively to people with or without the ball on the team. Able to place the ball when attacking and able to support teammates when defending.
3	Effective enough	Tries to communicate with the team when defending or attacking. Try to hit well and try to defend as necessary.
2	Low performance	Rarely communicates with teammates both in attack and defense. Tend to be careless when performing various techniques, both attacking and defending.
1	Very low performance	Never communicates with teammates. Does not care about the team's condition, whether when attacking or defending.

Table 4. GPAI Assessment (Memmert & Harvey, 2008)

Name	Decision-making		Skill Execution	
	A	IA	E	IE
Raw Score				
Index	DMI = A/(A+IA)		SEI = E/(E+IE)	
Playing Performance	PP = PKt + PKr/2			
Involvement in Games	IG = The sum of all appropriate and inappropriate behaviors (i.e., right decisions made + inappropriate decisions made + appropriate skill execution + inappropriate skill execution)			

Description:
A : Appropriate
IA : Inappropriate
E : Effective
IE : Ineffective
PP : Playing Performance
IG : Involvement in Games

Data collection was carried out at the end of the program to ensure the data was more appropriate, as the students were still in the atmosphere of competition. The data generated in this study is quantitative data which will later be processed through SPSS 20. This data is in the form of descriptive data, which in turn will further discuss the results of this data processing through theoretical studies and research results.

RESULT

The data gathered for this study demonstrated the outcomes of assessing sports orientation and the elements of game performance. The following are the study's findings:

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Table 5. The study's findings

	Scale	Average	Standard Deviation	Percentage
SOQ	competitiveness	54,00	2,30	83,20%
	winning orientation	25,25	1,90	84,16%
	goal orientation	25,22	1,57	84,07%
	Average	34,82	1,92	83,63%
GPAI	Decision making	4,03	0,61	80,56%
	Skill execution	4,06	0,67	81,11%
	Adjust	4,11	0,67	82,22%
	Cover (Defense)	4,06	0,63	81,11%
	Support	4,31	0,75	86,11%
	Guard/Mark	4,08	0,65	81,67%
	Base	4,22	0,76	84,44%
	Average	4,81	0,79	82,46

The research process was carried out as follows, the students involved in this study were students from grade 6. All students on each team would train skills in playing volleyball both passing, spike, block. Besides that, you will also learn defense and attack techniques. This activity will be carried out for 14 meetings which will last for three months. students are placed into nine teams of four students each for meetings 1 and 2 during the first week. The teacher's assessment of each student's volleyball learning ability guides team formation. Each team has relatively the same skill level as students are also introduced to the aims and practices of sport education in this class. This study was carried out until the fourth meeting. At meetings 5 to 10 students are allowed to practice skills in playing volleyball and playing roles in the game. Finally, at meetings 11 to 14, all students take part in the competition. at the end of the lesson an assessment will be carried out through a questionnaire and playing skills for each student.

Overall, the data from SOQ indicated that students had a high orientation, with an average of 34,82, a standard deviation of 1,92, and a percentage of 83.63%. This shows that students had a strong desire to participate in the game and win it. In addition, on the competitiveness scale, the students had an average of 54 with a standard deviation of 2.30 and a percentage of 83.20. On winning orientation, the students had an average of 25.25, a standard deviation of 1.90, and a percentage of 84.16%. Meanwhile, for goal orientation, they had an average of 25.22, a standard

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deviation of 1.57, and a percentage of 84.07%. These findings showed that the students' commitment to learning volleyball was very high, > 80% in each sub-indicator. This is in accordance with the rating table 1 which states that above 80% is a very high category.

DISCUSSION

The results showed that the average commitment to learning volleyball was above 80%. In addition, the results of measurements through GPAI showed results after conducting hybrid learning between SEM and SGA showing an increase in students' volleyball playing abilities. This is because, all of these skills were developed during the implementation of the Hybrid Model. (Gil-Arias et al., 2021) stated that the hybrid learning model (SGA and SEM) could be implemented in physical education learning to increase the students' motivation and decisions toward themselves. In addition, physical education learning with this hybrid model can encourage independence, inclusiveness, and justice for all students. Students had the opportunity to be directly involved with pleasure and have social interactions in physical education learning. Furthermore, the findings of other studies showed that cognitive enhancement and solid playing skills were carried out with the sports education model. This model can be modified and combined with other models so that they can complement each other (Minhat & Jeganathan, 2019). Hybrid models also positively affect commitment to practice, respect for the referee's rules, and good sportsmanship (Buendía et al., 2021). The strongest predictor is that teachers who teach games in Physical Education through TGFU (Teaching Game for Under Standing) are those who use tactical complexity as a way of managing curriculum progression so that learning becomes more meaningful (García-López et al., 2019).

In addition, students can get a thorough understanding of the game thanks to TGfU's numerous phases and the educational nature of mini volleyball. Therefore, the use of TGfU mini volleyball can aid in encouraging additional participation chances and helping participants build their physical

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literacy.Physical education teachers should consider mini volleyball and TGfU as an alternative to teaching volleyball (Meléndez Nieves & Estrada Oliver, 2019). Furthermore, SEM generates a new vision of physical education learning, especially for teachers, this model provides opportunities for teachers to meet the special needs of students (Chen et al., 2013; Hastie, 2013). In addition, through SEM students who previously had no motivation in learning physical education became more enthusiastic about learning (Perlman, 2012) and enabled students to achieve and compete in various academic fields and learning scenarios (Estrada et al., 2019).

Combining models with other models can be a practical way to apply techniques and games at the same time. The pedagogical approaches of these two models can complement one another. The ultimate objective is for all pupils to be able to play, adapt to the game, and have solid technique. (Ramos et al., 2020) Then, education units that use hybrid models can strengthen physical education teachers to be more successful in educating their students as it creates more success for the students. In addition, this program can help students apply their skills outside the classroom (Casebolt et al., 2014a). Furthermore, according to (R. Araújo et al., 2019), combining several learning models will support the achievement of cognitive, affective, and psychomotor goals. The such combination also provides a more focused didactic framework for physical education in schools. In hybrid learning, the teacher gets multiple experiences in teaching volleyball. In addition, students get more experience through learning with a hybrid model (Kim, 2016). (Ramos et al., 2020) In addition to giving pupils greater experience, hybrid learning has a noticeable impact on volleyball game skills. This is evident as their skill levels in each component greatly improved regardless of gender. Regardless of the gender and level of student skills in each component developed significantly. Apart from skills, there are also other developments in using the sport education model in the learning process to increase physical activity (Ginanjar et al., 2020). Furthermore, it was stated in the findings that Sport Education using three stages modified

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with the Invasion Games Competence Model can be used in physical education learning, especially in improving game performance in the form of invasion (Agustan et al., 2020). This model is also relatively easy to implement by teachers in schools so that increased learning outcomes can be guaranteed. Hybrid TGFU and SEM can encourage students to increase their own responsibility and decision making. This encourages students to be happier in carrying out competitive and learning activities (Gil-Arias et al., 2020).

This study found that hybrid models, particularly SEM and SGA, improved volleyball learning outcomes. Integrating these two learning models enhanced each student's technical and playing skills. Students could also work together to complete each learning activity. Therefore, this hybrid model is one of the models that can be used in teaching volleyball. However, the limitation of this study was related to the students' playing ability which was not measured at the beginning. Future research is expected to be able to conduct a pretest and posttest so that the improvement in skills can be observed clearly. Future research is expected to use a larger sample and at the junior or senior high school level. Through combined learning, it is hoped that it can complement each other and cover any weaknesses. The hope is that learning becomes more meaningful and enjoyable for every student.

CONCLUSION

Learning technical and playing skills is essential to improve the quality of playing volleyball. By having good technical and playing skills, every game can be won. Those skills can simultaneously develop and improve through hybrid learning, such as SEM and SGA. Future research is expected to develop games through various media and technologies. This will be important in order to evaluate the game as a whole. Through learning with this model, the students were given the opportunity to learn and manage their parts independently. Therefore, this hybrid model can be used as a model in teaching volleyball at various levels.

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