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Impact of an Educational Program Using Small-Sided Games to Develop Selected Fundamental Skills and Level of Motor Satisfaction in Volleyball for Ages 15–16

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ABSTRACT

The purpose of this study was to examine the influences of an educational program with Small-Sided Games (SSGs) on the improvement of selected basic volleyball skills and motor satisfaction of junior volleyball players. It also aimed to determine the difference that existed between the research groups in terms of the development of these fundamental skills, and the level of motor satisfaction, on the post-test.

The research used the experimental method which was felt suitable for the nature of research problem. The research population was 64 junior players in Faida Sports Club and the research sample was 24 players. Group one (experimental group) and group two (control group) were equally matched with 12 players in each group. Group allocation was done by random draw to get a proper distribution of participants.

In the education program there were 32 units of instruction, 16 for each group. This program took place over eight weeks, with two sessions per week for each group, each one being 90 minutes. The experimental group was trained using Small-Sided Games method while the control group was trained using the traditional method.

The results showed that 38.000 to 80.333; p = 0.005 and indicated that the training programs used for both groups had a positive effect on the training of the basic volleyball skills in the study. The program based on Small-Sided Games however clearly had a positive impact on the motor satisfaction of the experimental group, but the traditional program used with the control group did not result in a similar motor satisfaction.

The results also showed that the selected basic volleyball skills and motor satisfaction of the experimental group was found to be better than the control group. Players' motor satisfaction also was positively affected by enhancement of basic skill performance.

Based on the above, the researchers proposed to create skill training exercises for teaching basic volleyball skills using the method of Small-Sided Games and use them scientifically to teach and develop basic skills in other team sports. Another suggestion from the study is that more use of Small-Sided Games (SSG) is recommended for all ages, especially the younger players.

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1. INTRODUCTION

Interest in physical and athletic aspect has become one of topics that tops public scene in the most societies of world, especially those that realize importance of athletic aspects and extent of their positive impact on society in general, which pushes them to take all scientific and technological means and methods in developing athletic process and searching for everything new and innovative in field of athletic and physical activity in general and in field of motor learning in particular, by finding best educational methods and using most appropriate educational means in teaching and developing skills required to reach best results at highest athletic and physical levels in order to advance educational, physical, technical, tactical and psychological aspects of athletes in general and volleyball in particular.

Field of motor learning has received widespread attention from specialists and researchers in research and development, and in finding best educational methods and situations that stimulate inclinations and motivations of learners. Goal of these educational situations is to raise learner's desire to perform and continue performing with passion and enthusiasm during educational units of educational program designed to learn required motor skills in best educational way. Motor learning process is based on method and means of transferring information about motor performance from teacher to learner. (Schöllhorn & Rizzi, 2022) “More suitable this method is for learner, better and faster results of learning process will be, taking into account economy of effort and time spent in desired learning process”. (Awaluddin et al., 2025)

“Process of choosing appropriate educational method for selected educational situations is one of most important foundations of learning process when starting to teach selected motor skills, especially if it is a new skill for learners”. (Chandrabhatla et al., 2022) "Balance in learning situations is considered one of the most important principles of modern motor learning". (Moy et al., 2024) "More a teaching method aligns with learners' inclinations and desires, more effective and time-efficient learning process will be for both teacher and learner". (Doweir et al., 2025) Motor skills in volleyball have a special significance in learning process for students, as they are known to require high levels of concentration and neuromuscular coordination to reach automatic stages of learning those skills.

"Volleyball skills are considered high-performance motor skills that require a learning environment suitable for learners' circumstances and learning situation during learning unit". (López-Ferrer et al., 2022) Salim et al. (2024) also states that "it is very important to consider learners' inclinations to overcome learning difficulties, especially in learning skills that require a special learning environment." An attractive learning environment plays an active role in enabling learners to engage in learning process and increasing their motor satisfaction (Moita). et al., 2026) since active and effective learning process has a direct and strong relationship with level of motor satisfaction of learners, importance of study emerged in proving effectiveness of educational method used according to an educational method with an attractive learning environment based on stimulating motivation of learners to enable them to learn a number of motor skills in volleyball activity and raise level of motor satisfaction.

Volleyball is a team sport with numerous requirements and specific physical and motor skills. It imposes high-intensity motor demands on learners. With development in sports field in general and field of motor learning in particular, the researchers and those interested in motor learning in volleyball have focused heavily on skill aspect of learners. Educational methods and approaches have diversified to teach motor skills in the best educational way. One of most important educational principles is choosing appropriate teaching method that is compatible with educational situations prepared within learning program used. With rapid development in sports field, it has become necessary to find alternative teaching methods that stimulate learners' interest during learning unit and avoid boredom and laziness in performing tasks required in learning unit within educational program. This is in order to bring learners to higher levels of learning and to know level of motor satisfaction resulting from application of prepared educational program.

this study aims to reveal educational program using mini-games had an effect on developing a number of basic volleyball skills, effect of educational program using small games on level of motor

satisfaction in volleyball, difference between two research groups in post-test in developing a number of basic skills and level of motor satisfaction in volleyball.

Research hypotheses educational program followed for control group has a positive effect between results of pre- and post-tests in developing a number of basic skills and level of motor satisfaction in volleyball, proposed educational program using small games for experimental group has a positive effect between pre- and post-test results in developing a number of basic skills and level of motor satisfaction in volleyball. There were no statistically significant differences in post-tests between control and experimental research groups in developing a number of basic skills and level of motor satisfaction in volleyball.

2. METHODS

The researchers used a well-controlled, randomized, two-group equivalent random selection design with pre- and post-observation. After the researchers conducted exploratory experiments on a sample of research population and applied scientific principles of testing validity, reliability and objectivity, the main research experiment was conducted from 1/3/2026 to 30/4/2026.

After consulting with a number of expert gentlemen in field of motor learning at University of Mosul College of Physical Education and Sports Sciences, Motor Satisfaction Scale was designed, and items of scale were divided into four selected skill axes, and each axis had 5 items, and thus total number of items of scale was 20 items, and correction key for each item was divided from 1-5 points, and thus minimum score of scale was 20 points and maximum score was 100 points, and scientific foundations of tests validity and reliability were applied to the scale.

Principles of validity, reliability, and objectivity, which are scientific foundations of tests used for a number of basic volleyball skills, were applied, as shown in Table (1).

Table 1. Scientific basis for testing a number of selected basic skills in volleyball

No.	Tests	Measurement unit	Reliability coefficient	Intrinsic Validity	Objectivity
1	Passing test from below with both hands	Degree	0.95	0.974	0.966
2	One-handed bottom swipe test	Degree	0.855	0.924	0.927
3	Top-forward scrolling test	Degree	0.935	0.966	0.921
4	Top-to-back scroll test	Degree	0.905	0.951	0.915

The correlation coefficient ranged from 0.855 to 0.974 as shown in Table (1) which were considered high for the validity, reliability and objectivity of the tests used in the study. These high values indicate that the tests used have good properties of measurement in science and are suitable for measuring variables studied in this research.

Moreover, the validity and reliability processes also were carried out for the volleyball motor satisfaction instrument to ensure that it is valid and reliable to be used in the main trial. The findings of these statistical techniques are shown in Table (2).

Table 2. Scientific basis for tests of motor satisfaction level in volleyball

No.	Test	Measurement unit	Reliability coefficient	Intrinsic Validity
1	Motor satisfaction scale	Degree	0.805	0.897

All the correlation coefficients in Table (2) were found to be high (0.805 to 0.897), which showed that the tests were highly valid and reliable. These results show that the instruments used in the study

were adequate and suitable in measuring the variables of the research. The research groups are homogeneous and equivalent.Research groups are homogeneous and equivalent.

Prior to implementing the educational program, the researchers checked the homogeneity and equivalence of the two research groups to ensure that any differences in the groups after the education program would be due to the experimental treatment and not to the pre-existing differences between the groups. Several growth related variables were used in the homogeneity procedures: age, height and body mass. To check if the subjects were sufficiently alike in basic physical characteristics prior to the start of the experiment, these variables were examined:

The researchers also compared values of the selected growth variables between the experimental and control group in order to determine the equivalence of the groups. Before the educational program was implemented, the independent-samples t-test was used to see if there were statistically significant differences between the two groups.

Results of t testing of comparison between the experimental group and the control group in growth related variables are shown in Table 3.

No.	Variables	Measurement unit	Group	Mean	Standard deviation	(t) Test	Sig.
1	Height	Month	Experimental	164.416	3.9876	0.203	0.841
			Control	164.750	4.0480		
2	Age	cm.	Experimental	187.333	4.2067	0.841	0.409
			Control	188.583	2.9682		
3	Mass	Kg.	Experimental	60.333	3.7979	0.510	0.615
			Control	61.083	3.3967		

Difference is not significant when probability value is greater than (0.05)

The statistics revealed that there was no significant difference between the experimental and controls in growth variables, height, age and body mass as shown in Table (3). No significant differences between the two groups were found at the 0.05 level of significance on the probability values of the calculated t values, suggesting that the two groups were similar with respect to these variables before the educational program was implemented. This relationship helps to assure that any changes that subsequently occur between the groups is more likely a result of the action of the experimental treatment and not due to the different basic growth characteristics.

The mean value of each Research Group in the selected physical fitness components was determined and the results were compared.The mean of each Research Group on the physical fitness components selected was determined and compared. The researchers also compared the match of the experimental group and the control group on selected physical fitness component which may affect the results of volleyball skills examined in this study. This had been done to make sure that both groups were starting at a similar level of fitness.

Table 4. T-test of the selected physical fitness components of experimental and control groups.

No.	Fitness abilities and Physical kinetics	Measurement unit	Group	Mean	Standard deviation	(t) Test	Sig.
1		Meter	Experimental	7.494	0.458	0.621	0.541

	Explosive power of arms		Control	7,600	0.380		
2	Transitional speed	Second	Experimental	5.090	5.224	0.846	0.407
			Control	0.418	0.351		
3	Constant balance	Second	Experimental	8.661	8.583	0.526	0.604
			Control	0.258	0.446		
4	Coordination	Second	Experimental	8.440	8.658	1.446	0.162
			Control	0.380	0.355		

Difference is not significant when probability value is greater than (0.05).

Table (4) reveals that there were no statistically significant differences in the physical fitness selected components (explosive power of the arms, speed of transition, static balance and coordination) between the experimental and control groups. The probability values for t-values calculated were greater than the significance value of 0.05, which showed that the two research groups were not different in these physical fitness variables prior to the educational program.

This was significant to establish this equivalence since the physical fitness components may directly impact the performance of the volleyball skills assessed in this study. Hence, the non-significant initial differences between the two groups confirmed the more reliable basis in evaluating the actual effect of the educational program. Selected Basic Volleyball Skills (SBVS) is used for the equivalence of the Research Groups.The equivalence of the Research Groups is conducted by means of Selected Basic Volleyball Skills (SBVS).

The researchers also investigated the similarity of experimental and control group in some selected basic volleyball skills prior to the experimental procedures. In order that both groups started the study at approximately the same skill level and that any differences noted on the post-test be more accurately credited to the educational program employed, this step was taken.

The result of t-test based on the comparison of experimental group and the control group in selected basic volleyball skill test is shown in table 5.

No.	**Skills**	**Measurement unit**	**Group**	**Mean**	**Standard deviation**	**(t) Test**	**Sig.**
1	Passing test from below with both hands	Degree	Experimental	9.750	1.912	0.218	0.829
			Control	9.583	1.831		
2	One-handed bottom swipe test	Degree	Experimental	8.166	1.850	0.547	0.590
			Control	8.583	1.880		
3	Top-forward scrolling test	Degree	Experimental	13.333	1.969	0.658	0.518
			Control	13,833	1.749		
4	Top-to-back scroll test	Degree	Experimental	5.750	1.712	0.573	0.573
			Control	6.166	1.850		

Difference is not significant when probability value is greater than (0.05)

Table (5) indicates that no significant difference was obtained between the experimental and control groups in tests of the selected basic volleyball skills. The p values obtained from the calculated

t values were higher than the significance level (0.05) so that the two groups of research were not different in their initial skill level prior to the educational program.

It was important to set this equivalence so that the two groups could start the experiment at approximately the same level of technical performance. This can make it easier to judge any discrepancies that might be found in the post-test as attributable to the educational program and not to existing differences among the participants.

The researchers also studied the groups' (experimental and control groups) equivalence on the motor satisfaction of the selected basic volleyball skills. This was done to ensure that both groups had similar motor satisfaction prior to beginning the experimental treatment.

The t-test result of the experimental group and control group in motor satisfaction of basic volleyball skills is shown in Table 6.

No.	Test	Measurement unit	Group	Mean	Standard deviation	(t) Test	Sig.
1	Motor satisfaction scale	Degree	Experimental	38.000	1.537	0.266	0.792
			Control	38.166	1.527		

A probability level of < 0.05 was considered statistically significant. Table (6) indicates the results of the statistical analysis of motor satisfaction and shows that there is no statistically significant difference between the motor satisfaction of the experimental group and the control group in terms of the level of motor satisfaction of the selected basic volleyball skills. All of the reported p-values are above 0.05 and thus there was no evidence that the two groups differed in motor satisfaction prior to the delivery of the educational programmes.

2.1. Participants

Experimental method was used by the researchers because it was suitable for nature of research problem. Research community consisted of 64 junior players of Faida Sports Club, while the sample consisted of 24 players. They were divided into two groups, and a group consisting of 12 players was chosen as stability and exploratory trials group, remaining players were excluded because they did not match sample group. As for distribution of tasks between the two research groups and stability group, it was done by drawing lots.

2.2. Procedures

Collected data were processed and analyzed by using SPSS (Statistical Package for the Social Sciences). The statistical procedures used were arithmetic mean, standard deviation, Pearson's simple correlation coefficient, paired-samples t-test, independent-samples t-test, percentage calculations and self-validity coefficient. The statistical techniques were chosen based on the study's goals and the type of data collected in the pre- and post-tests.

The educational program was divided into 32 units of teaching, equally distributed between the two research groups. The experimental group worked with 16 educational units developed based on skill exercises and structured as Small-Sided Games, while the control group worked with 16 educational units structured in the classic way that is used by the coach in teaching.

The period of implementing the two groups was eight weeks, with 2 educational units being implemented per week. All the units of instruction were 90 minutes in length. To ensure that the only difference between the two groups was the way in which the instruction was given, the duration, frequency, and organizational conditions of the instructional sessions were the same for both groups.

3. RESULTS

Results of Pre and Post Test of the selected Basic Volleyball Skills of the Control Group

The researchers compared the pre- and post-test scores for the selected basic volleyball skills to analyze the level of change of the control group's performance after the execution of the traditional educational program. To determine if there were any statistically significant differences between the two measurements, the arithmetic mean, standard deviations and calculated t-values were determined.

Table 7 Means, standard deviations and calculated t-values of pre- and post-tests in selected basic volleyball skills for the control group.

No.	Skills	Measurement unit	Test	Mean	Standard deviation	(t) Test	Sig.
1	Passing test from below with both hands	Degree	Pre	9.583	1.831	7.137	0.001
			Post	13.916	1.505		
2	One-handed bottom swipe test	Degree	Pre	8.583	1.880	3.559	0.04
			Post	11.416	1.505		
3	Top-forward scrolling test	Degree	Pre	13.833	1.749	4.980	0.004
			Post	16.583	1.621		
4	Top-to-back scroll test	Degree	Pre	6.166	1.850	5.450	0.002
			Post	9.166	1.193		

Statistically significant difference was set at P< or equal to 0.05. The value of t for 11 degrees of freedom was found from the table at 2.18.

As seen from Table (7) it may be noted that there were statistically significant differences between the mean scores of pre- and post-test of the control group in all selected basic volleyball skills favoring the post-test. Probabilities for the investigated skills were 0.001, 0.040, 0.004 and 0.002 respectively. All of these values were less than 0.05, which is the adopted significance level, thus the differences between the pre-test scores and post-test scores were statistically significant.

From the results, it can be seen that the traditional educational program for the control group has a positive contribution to the development of basic volleyball skills that have been selected. This improvement was seen in the post test results and this indicates that through regular practice, repetition of skill development exercises and continuous involvement in the educational units, the players' technical performances improved during the course of the program.

Pre- and Post-Test Results of the Control Group on the Motor Satisfaction – Volleyball Level: The results of this study indicate that the Control Group did not show any significant difference in the Motor Satisfaction – Volleyball Level from pre-test to post-test.

A pre-test and post-test was used to determine if the traditional educational program had an impact on the level of motor satisfaction among the players in the control group. Arithmetic means, standard deviations and calculated t-values were obtained and used to determine the direction and statistical significance of differences between the two measurements.

Arithmetic means, standard deviations and calculated t-values for pre and post tests of control group in level of motor satisfaction in volleyball.

No.	Test	Measurement unit	Test	Mean	Standard deviation	(t) Test	Sig.
1	Motor satisfaction scale	Degree	Pre	38.166	1.527	0.660	0.522
			Post	38.750	1.454		

Statistically significant differences were taken as $p \leq 0.05$. The tabulated value of t for 11 degrees of freedom was 2.18.

The results of the t-test on the mean scores of the control group pretest and post-test showed that there were no significant differences between the scores of the pretest and the post-test in the motor satisfaction in volleyball as shown in Table (8). The reported probability value (0.522) was higher than the adopted level of significance (0.05). Thus a statistically non-significant difference was found between the two measurements.

This outcome shows that the control group, which underwent the regular educative programme, did not have a statistically significant difference in their motor satisfaction level as a result of the programme. That is, the amount of change between the pre- and post-test scores was not great enough to establish a significant impact of the traditional approach to this psychological-motor variable.

The differences between the pre- and post-test of selected basic volleyball skills of the experimental group

The researchers used the pre post test results of the experimental group in the selected basic volleyball skills to determine the effectiveness of the educational program based on Small-Sided Games. The mean and standard deviations were used to determine the extent of the changes and the statistical significance of changes that occurred after the program.

Arithmetic mean, standard deviations and calculated t values in pre-test and post-test of experimental group in selected basic volleyball skills are presented in Table 9.

No.	Skills	Measurement unit	Test	Mean	Standard deviation	(t) Test	Sig.
1	Passing test from below with both hands	Degree	Pre	9.750	1.912	14.327	0.001
			Post	20.083	1.564		
2	One-handed bottom swipe test	Degree	Pre	8.166	1.850	16.861	0.003
			Post	17.083	1.564		
3	Top-forward scrolling test	Degree	Pre	13.333	1.969	10.355	0.005
			Post	25.416	1.443		
4	Top-to-back scroll test	Degree	Pre	5.750	1.712	9.998	0.007
			Post	12.583	1.781		

Statistically significant difference was determined at a probability level of ≤ 0.05. The tabulated t value for 11 degrees of freedom was 2.18.

According to Table (9), the results showed that for the experimental group, there was a significant difference between the pre-test and post-test arithmetic mean scores on the selected basic volleyball skills and the difference was at the favor of the post-test. The reported probability values were 0.001,

0.003, 0.005, and 0.007, respectively. All the values were found to be below the adopted significance level of 0.05, therefore the differences were found to be statistically significant.

The results show that the educational program that was carried out using Small-Sided Games positively affected the development of the selected basic volleyball skills of players in the experimental group. This is due to the nature of the exercises, variety of game situations and active participation required during Small-Sided Games, which led to higher post-test scores as players were able to perform the skills targeted more effectively.

The difference between the pre-test and post-test of the experimental group on the level of motor satisfaction in volleyball skills

The researchers compared pre and post test results of the experimental group to see the effect of the Small Sided Games educational program on motor satisfaction. To determine the significance of differences observed, the arithmetic means, standard deviations and calculated t values were used.

Table 10 Means, standard deviations and calculated t-values for the pre- and post-test of the experimental group in level of motor satisfaction in volleyball.

No.	Test	Measurement unit	Test	Mean	Standard deviation	(t) Test	Sig.
1	Motor satisfaction scale	Degree	Pre	38.000	1.537	17.857	0.005
			Post	80.333	1.708		

Statistically significant difference was defined as a probability value of 0.05 or less. The tabulated value of t for 11 degrees of freedom was 2.18.

The mean scores of the experimental group for pre-test and post-test level of motor satisfaction in volleyball as presented in Table (10) revealed that there was a statistically significant difference between the scores of the pre-test and post-test which favor the post-test. The reported probability value was 0.05, which is equal to the adopted level of significance. The difference was thus taken as statistically significant using the criterion of $p \leq 0.05$.

This finding shows that the educational program using Small-Sided Games positively affects the level of motor satisfaction of players in the experimental group. The positive gains seen on the post test could be due to the interactive and competitive nature of the Small-Sided Games which allowed players to actively participate in games and repeat skills more often, enjoy themselves and become involved in game situations. These characteristics might have had a positive impact on players' confidence, motivation and satisfaction with their motor performances in volleyball.

The post-test results for the experimental and control groups with respect to selected basic skills in volleyball are compared

The researchers compared the post test results of the experimental group and the control group to see which method of instruction used in the selected basic volleyball skills brought about greater improvement. This comparison was made to determine if there is a statistically significant difference between the two groups at the end of the educational programs.

Post-test comparison between the experimental and the control group on selected basic volleyball skills (Table 11).

No.	Skills	Measurement unit	Test	Mean	Standard deviation	(t) Test	Sig.
1		Degree	Experimental	20.083	1.564	11.544	0.001

	Passing test from below with both hands		Control	13.916	1.505		
2	One-handed bottom swipe test	Degree	Experimental	17.083	1.564	8.649	0.000
			Control	11.416	1.505		
3	Top-forward scrolling test	Degree	Experimental	25.416	1.443	19.294	0.007
			Control	16.583	1.621		
4	Top-to-back scroll test	Degree	Experimental	12.583	1.781	6.137	0.000
			Control	9.166	1.193		

The probability value of < 0.05 was taken as the significant difference. The tabulated value of t was reported as 2.18.

The statistically significant differences between the post-test mean scores of the experimental and control groups were obtained on all the mean scores of the selected basic volleyball skills as shown in Table (11) and the differences were in favor of the experimental group. The reported probability values were 0.001, <0.001, 0.007, and <0.001, respectively. All these values were less than 0.05 and so the differences were deemed to be significant.

The results of the study showed that the educational program using Small-Sided Games was more effective than the traditional educational model in developing the basic volleyball skills chosen. It may be that the superiority of the experimental group was due to the interactive and variable nature of Small-Sided Games, which afford players many opportunities to practice skills in close to game-like situations. These activities involve constant movement, quick reactions, frequent touches, and decision making, and can help in enhancing the technical aspect and speed of skill acquisition.

Comparing the post test scores of the experimental and control groups on Motor satisfaction

The researchers compared post-test scores of experimental and control groups to determine the relative effect of the two methods of education on motor satisfaction. This comparison was made to determine if the Small-Sided Games program resulted in a higher level of motor satisfaction than the traditional method of teaching.

Post test comparison of the experimental and control groups in the level of motor satisfaction in volleyball.

No.	**Test**	**Measurement unit**	**Test**	**Mean**	**Standard deviation**	**(t) Test**	**Sig.**
1	Motor satisfaction scale	Degree	Experimental	80.333	1.708	17.203	0.006
			Control	38,750	1.454		

Statistically significant difference was defined as a probability value of < 0.05. The tabulated t value reported in the analysis was equal to 2.18.

Table (12) shows that there is a statistically significant difference between the experimental and control group post-test mean scores in the level of motor satisfaction in volleyball and the difference is in favor of the experimental group. The probability value was reported to be 0.006, and thus less than the adopted significance level of 0.05. Thus, a significant difference between the two groups was determined.

This finding suggests that the educational program that was developed based on Small-Sided Games more positively affected motor satisfaction compared to the traditional educational method.

Small-Sided Games are interactive, fun and competitive which could account for the increased motor satisfaction in the experimental group as they are given increased involvement, repeated participation and increased opportunities to experience successful skill performance. These characteristics might increase motivation, confidence, enjoyment and satisfaction with movement and performance in volleyball practice.

4. DISCUSSION

Results obtained in Table (7) show statistically significant differences between pre-test and post-test results for control group in developing all selected volleyball skills, in favor of post-test. The researchers attributes these differences to effectiveness of methodology used, which included explaining and demonstrating motor skills. Similarly, performing those skills and repeating motor skills performed in those skills contributed to understanding that task, as it led to development of motor response among learners. This indicates that traditional teaching method used by trainer helped increase motor experience in those skills, contributing to development of required motor skills among learners.

(Astuti et al., 2025) mentioned that "Skill performance of motor exercises regular repetition contributes to understanding motor skills required for those tasks. It also leads directly to increased focus on performance". as performing exercises led to development of those required skills, and this is what was also mentioned by (Kependidikan et al., 2025) "Focusing on motor performance through repetition and practice helps to raise level of perception among learners in understanding their motor duties, which contributes positively to learning those skills," as confirmed by (Aji, 2025). "Consistent practice and repetition are of paramount importance in learning new motor skills, "Leading to improved motor performance by achieving coordination between components of a single skill and by linking different skills.

Results obtained in Table (8) showed non-significant differences in level of motor satisfaction in volleyball between pre-test and post-test for control group. The researchers attributes these results to nature of methodology used by coach in performing and repeating skills, and nature of that performance itself, which contributed to a lack of positive impression due to weak element of excitement and thrill associated with performing motor skills and repeating them in same pattern.

This did not contribute to raising level of motor satisfaction among learners. Dutra et al. (2023) state that "Environment surrounding performance and nature of method used are the biggest factors in creating learners' desire to continue and in forming their impression, which contributes to determining their level of motor satisfaction. As Apidogo et al. (2024) confirms "Resonance effects in variable practice for handball, basketball, differential learning". "Repetition and repetition contribute to development of motor skills, but this may be accompanied by increased boredom and monotony among learners, which could negatively affect their motor satisfaction." results obtained in Tables 9 and 10 show statistically significant differences between pre-test and post-test results for experimental group in development of all selected basic skills and motor satisfaction in volleyball, favoring post- test.

The researchers a reason this is amazing differences to effectiveness of educational approach based on small games in performing skill exercises was demonstrated by its ability to stimulate learners' interest in carrying out required motor tasks and their desire to continue performing them. This was due to fun and enjoyment approach instilled in learners in this group, as well as competitive spirit in performing these tasks. Ihsan et al. (2023) stated "Method used to learn required skills and how to perform tasks in carrying out motor exercises plays the biggest role in learning those skills."

Ibrahim (2026) also emphasized that "Quality of motor learning acquired through learning process is directly based on method and mechanism of learning, and even affects speed of learning. More method used attracts learners' interest, the faster and higher quality of learning process." Furthermore, use of small games in performing motor task for skill exercises had a clear impact on learners, contributing to a significant increase in their motor satisfaction. Jawad et al. (2026) stated that "Level of motor satisfaction in individuals depends directly on extent to which learners accept required motor tasks and method of performing those tasks is significant. more motor tasks appeal to learners' interests, the higher their level of motor satisfaction, and indeed, higher level of development in required motor skills.

Astuti et al. (2024) state "Learners' ability to overcome learning difficulties associated with learning process is most important factor in raising level of motor satisfaction. This is achieved by

choosing a learning mechanism that suits learners' interests". Based on results presented in Tables 11 and 12, there are statistically significant differences in post-test results between experimental and control groups in development of several basic skills and level of motor satisfaction in volleyball, favoring experimental group. The researchers a reason this is amazing differences effectiveness of curriculum used, which included skill-based exercises designed as small games that focused on attracting learners' interests and increasing their desire to continue performing required motor tasks, was demonstrated.

This had a positive impact on resulting improvement in skills under study and level of motor satisfaction in volleyball, as indicated by (Yazgan et al., 2026) Teaching method that attracts learners' interest when learning new motor skills, whether in individual or group activities, stimulates their attention and focus, and raises their physical, psychological, and mental readiness, so that physical ability is at its best. As Romdani et al. (2026) confirm "When starting to teach motor skills to learners, teacher or trainer must choose teaching methods that suit learners' abilities to attract their interest in learning, which helps to raise motivation to perform and reach advanced educational stages in the shortest time and with least effort".

Investing in play process and guiding it scientifically in learning process in general, and in field of motor learning in particular, has a positive impact on learning required skills. In this regard, Santos et al. (2022) mentions "Employing small games in learning motor skills has a positive role through joy and fun that accompanies games during motor performance, which helps to raise efficiency of learners during learning process". Furthermore, development of motor skills has had a positive impact on raising level of motor satisfaction (Lin et al.). (2022) "Motor satisfaction is positive feeling a person experiences during performance of motor skills." " more precise and efficient performance, higher level of motor satisfaction associated with that performance, which increases desire to perform and raises self-confidence" (Mahdi et al., 2025).

Motor satisfaction contributes to enhancing self-confidence in learners, as it inspires enthusiasm and drive in performance and enhances athlete's ability to succeed. "Motor satisfaction is one of key factors in motivating learners to develop their skill levels and raise their level of ambition." The researchers also believes there is a positive correlation between level of development in motor skill performance and level of motor satisfaction among learners. The better performance level, better level of motor satisfaction. Improved motor satisfaction among learners reduces boredom, which contributes to improved skill performance and faster mastery of motor skills. A high level of motor satisfaction generates internal conviction and a desire to continue practicing required motor skills. Skill exercises, conducted in a different style, had a positive impact on learners in developing selected skills and raising level of motor satisfaction in volleyball.

5. CONCLUSIONS

Educational programs implemented on the two groups had a positive impact on developing basic volleyball skills under study. Educational program that was applied to experimental group, which used small games, had a positive effect on raising level of motor satisfaction in volleyball. Educational program that was applied to control group, which used traditional method, did not produce any positive effect in raising level of motor satisfaction in volleyball. Experimental group, which used small games, outperformed control group, which used traditional method, in developing basic skills under study and level of motor satisfaction in volleyball. Improvement in basic skills has been reflected positively in level of motor satisfaction in volleyball.

Modeling skill exercises in form of small games when teaching basic volleyball skills. Using small games scientifically when starting to teach and develop basic skills in other group activities. Using small games model with different age groups in general, with emphasis on younger age groups. For future research, it is highly recommended to monitor and measure physiological and cardiovascular training loads (e.g., heart rate responses and rating of perceived exertion) during Small-Sided Games. This will provide a more comprehensive understanding of internal physical demands alongside technical skill development in junior athletes.

6. AUTHORS' NOTE

The authors declare that there is no conflict of interest regarding the publication of this article. Authors confirmed that the paper was free of plagiarism.

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