
Effect of Using Command and Cooperative Methods In Teaching Handball Skills to Preparatory School Students in Thi Qar Governorate 2023-2024

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ABSTRACT

Backgroud: Many countries have begun attempting to modernize their educational systems with the implementation of modern teaching and instruction methods more effective in achieving educational outcomes. The development has been linked to the increasing influence of educational technology, which has led to the emergence of alternative teaching methods that are more in line with the characteristics of learners, their abilities and potential. These are designed to enhance the learning process and the quality of the final learning products. The significance of this research is to carry out the identification of the effectiveness of the implementation of the learning process in handball using the various learning methods and to identify the contribution of the various learning methods in acquiring basic skills in the learning process in handball.

Methods: The researcher chose the experimental method, which was found to be suitable for the nature and purpose of the research, as it involved two separate and equivalent groups. The research subjects were middle school students in Grade 4, 5 and 6 in both scientific and literary sections, academic year 2023-2024. A total of 267 students participated in the study. The subjects of the research were fourth grade students of literature in the purposive sampling of two classes. Class (A) was instructed by the command method while class (B) with the cooperative method. The researcher was using a sample size of sixty-four (64) students for the two classes, of which thirty-two (32) students were in the first class and thirty-two (32) students in the second class, for the field experiment.

Results: The results showed that both the command and cooperative teaching methods had a positive effect on learning some basic handball skills. The cooperative approach was more effective than command approach in acquiring basic handball skills under study especially in catching, passing and receiving the ball. From these results, the researcher suggests that the command method and the cooperative method be used to improve the learning process.

Conclusions: The researcher also highlights the need to pay more attention to the cooperative approach in the instruction of selected

	basic handball skills because of its positive role in the improvement of students' learning and performance of skills. Keywords: Teaching Methods; American Style; Interchange Style; Handball Skills; Preparatory Study.
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INTRODUCTION

Physical education is a vital subject in the overall learning process as it has a significant part to play in contributing to the all-round development of learners both physically and from a skills-based and emotional standpoint, considering the learner's predispositions, interests and abilities (Evans & Maddox, 2025; Hambali et al., 2026). Over the past few years, several nations have shifted their focus to the improvement of their educational systems and to periodically re-evaluate their programmes and practices in the context of modern educational theories and the principles of educational technology. This development has prompted the physical education and teaching professionals as well as the specialists to seriously look for an alternative educational approach and methods that are compatible with the requirement of educating various games, skills and physical activities based on the level, ability and potential of the learners (André, 2024; Lobo & Tagare, 2025).

These developments have led to a number of teaching methods and approaches to education that have given teachers more choice in the method they choose to employ depending on the nature of the activity, the learning context, the learners' situation and the intended learning objectives (Aggerholm et al., 2018; Hernando-Garijo et al., 2021). This variety helps to build up learners' skills and active involvement in the learning process. There is no universal teaching method because each method has its own goals, method, applications and information. Thus, it is important to try and compare different methods of teaching, to gain insight into the effectiveness of each method and to see whether some methods may yield more salient educational gains (Breed et al., 2025; Elumalai et al., 2022).

Handball is a one of the team sport that is accurate, fast, excited and organized. The basic skills of this game can be taught using the suitable learning approach that has the ability to present the learning material in a clear and effective way to the students. Thus, the acquisition of selected handball skills can only be accomplished efficiently if appropriate and diversified teaching methods are used to support the learners in understanding, practicing and developing the necessary motor skills (Guimarães et al., 2026; Musa & Menezes, 2023).

The significance of this research is to be able to determine the effectiveness of using various types of teaching methods in the field of Physical Education aimed at developing the learning process of the basic handball skills and to improve the performance of students' skills. In physical education, although we come across many teaching techniques and strategies, and there are different types of approaches to teaching sports, activities and motor skills, the most suitable methodology for a specific motor skill is significant. The chosen approach needs to match the nature of the activity, abilities/capabilities of the learners, and the learning resources available. The use of appropriate teaching methods can also help to minimize the effort and time needed for learning and increase the efficiency of the learning process (Ihsan et al., 2023; Silverman & Mercier, 2015).

The existence of various teaching methods did not make any difference in the fact that the researcher observed that some teachers are still relying primarily on one traditional method. The researcher observed that in practical physical education lessons some teachers only focused on explaining the skill, showing a model of correct performance and then asking the student to imitate it without giving the student enough an active role in the learning process.

Therefore, in the present study, the researcher aims to determine the effectiveness of the immediate and cooperative teaching methods in teaching basic handball skills.

METHODS

The nature of any scientific research problem is the basis of the selection of the approach or methodology of the scientific research. The researcher chose to use a experimental research method with two equivalent groups due to the nature of the current study and the goal of the study. The scientific section and the literary section of middle school students in grade four, five and six were the research objects in the 2023/2024 school year. There were two hundred and sixty seven (267) students as the total population in the study.

The purpose of the study was to select two classes of fourth-grade literary students who would make up the research sample. The study was a purposive sampling of two classes of fourth-grade literary students. The command teaching method was used in Class (A) while the cooperative teaching method was used in Class (B).

The researcher took the field experiment to a sample of sixty-four (64) students, thirty-two (32) students in each class. The researcher applied a homogeneity procedure to the sample of participants prior to the main experiment in order to reduce the variance within the sample and to ensure an adequate level of homogeneity. Age, height and weight were used to assess homogeneity. The researcher also studied the homogeneity of the sample for the skill variables used in the study holding the ball, passing and receiving the ball. Table (1) indicates the degree of homogeneity among the members of the research sample in these variables, according to skewness coefficient.

Tabel 1. Homogeneity variables among sample members

Variables	Measurement unit	Mean	Standard deviation	Mediator	Coefficient of skewness
Age	month	160.5	3.76	160	0.39
Height	cm.	151.93	4.68	151.5	0.27
Mass	Kg.	46.03	5.27	45.5	0.3
Holding ball	degree	25.25	6.33	23	1.06
Passing	degree	5.12	3.09	6	0.84-
Ball control	degree	2.06	1.45	2	0.12

The skewness coefficient values were all within (± 3) range, thus showing normal and appropriate distribution of data. This outcome validates the homogeneity of the members of the research sample in the variables being studied and the research sample's acceptable and balanced distribution. In addition, the researcher conducted an equivalence procedure between the two research groups in order to ensure that there were no significant differences between them before the implementation of the experimental procedures. Independent samples (t-test) was used to examine the equivalence of the groups in the selected skill variables of the study. The equivalence results of two groups are shown in the Table (2).

Table 2. shows equivalence of research groups in study variables.

Variables	Measurement unit	First group		Second group		(t) value		Sig.
		Mean	St.d	Mean	St.d	calculate d	Tabular	
Age	month	160.68	3.80	160.31	3.72	0.27	2.04	Insig.
Height	cm.	151.25	3.73	152.62	5.38	0.81		Insig.
Mass	Kg.	45.87	5.02	46.18	5.5	0.61		Insig.
Holding ball	degree	27.18	6.80	23.31	5.15	1.75		Insig.
Passing	degree	5.75	3.09	4.5	2.97	1.13		Insig.

Ball control	degree	2	1.41	2.12	1.49	0.28	Insig.
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A tabulated value of (t) for a degree of freedom of (30) at (0.05) significance level is (2.04). The calculated (t) values of the variables investigated were compared with the tabulated value (2.04), and it was observed that all the (t) values for the variables investigated were less than tabulated (t). This means that the differences between the two research group on the variables studied were not statistically significant. Therefore the results show that the two groups were equal in the variables studied before the research procedures were carried out, hence it was appropriate to carry out the research and to compare the impact of the two teaching methods used.

Research Skills

The basic skills of handball that were used in the research were determined based on the handball curriculum for the preparatory stage that was introduced in the academic year of 2023-2024. Ball, pass and catch the ball were used as a representation of the selected skills. The researcher had determined the skill(s) to be investigated, then he prepared a questionnaire form to identify the most suitable tests to measure each of the selected handball skills. For each skill there were three (3) proposed tests as listed in Appendix (1). The questionnaire was then given to some experts and specialists in handball and physical education sciences at the University of Thi Qar. The experts' responses were obtained and analyzed, and based on the number of times and percentage of agreement, the tests most selected were used in the research. A list of the tests selected is provided in Table (3).

Table 3. Expert selection percentages for handball skill tests

Skill	Test	Percentage
Hold and receiving ball	Measuring accuracy in stopping ball and regaining control of it with hand	83%
Hold and receiving ball	Receiving rebounded ball	80%
Passing	Rebound passing on a wall for a distance of (8 m) for 30 seconds	79%
Passing	Passing ball towards a small goal (15 m)	75%
Passing	Passing ball around a drawn circle	85%
Scoring	Shooting from in front of goal towards target, and a certain score is calculated for each place	90%
Scoring	Shooting from side of goal towards target	87%

Research Tests

This is the first test in the sequence that stops the ball (receives the ball). This is the first test in the sequence for stopping the ball (receiving the ball).

Test Objective:

This test is designed to assess the accuracy of being able to effectively stop and control the ball when using the hand.

Tools:

Five (5) handballs, a measuring tape, and marking paint.

Test Procedures:

There is a test area marked past the indicated line. The player is positioned behind the starting line and in front of the player at point (A) with the ball is the coach. Once the signal to run has been called, the coach passes the ball to the player who then runs from the starting line into the test area and tries to stop and control the ball properly.

Once the attempt is made, the player takes the player to the starting position and gets ready for the next attempt. To score the toss must be stopped inside the testing area with one foot inside. An error made by the coach when throwing the ball does not count as a score and the throw is retaken.

Scoring:

Each successful attempt will earn 2 (two) points. All correct answers get a maximum of 10 (ten) points. Players pass the ball towards the three circles on the ground. Passing the ball to three circles drawn on the ground.

Test Objective:

This test is used to evaluate the accuracy of passing at a medium length.

Tools:

Testing Area, Handball, Measuring Tape, Marking Paint.

Test Procedures:

The three circles are drawn on the ground so that each circle has a circumference of 2m, 4m and 6m respectively. The circles are assigned scores of six (6), four (4), and two (2) points, respectively. The three circles are 20 m away from the starting line, measured from the center of each circle. The player stands behind the starting line and plays the ball with either hand, trying to make the ball fall into the smallest circle possible, to score the highest number of points. All players will have 5 (FIVE) throws.

Scoring:

The players' total score is the sum of the scores from the five chances. If the ball drops on one of the boundary line of the circles, the points are allocated as 5, 3 and 1 point for the respective circles. An attempt is deemed to be unsuccessful if the ball is completely outside the three circles.

Third Test: Aiming Power

Test Objective:

This test is designed to assess throwing ability, shooting ability and the level of effort a player can put in during the test.

Equipment Used:

Five (5) handballs and a handball court.

Test Procedures:

The player takes a shot at the goal from a distance of 10 m. Players have five tries with five balls. A goal is scored if the ball goes into the goal directly and doesn't hit the ground first.

Scoring:

If the player manages to make a direct shot on goal, he/she receives 1 point. The tests rely on scientific basis. The researcher checked the scientific coefficients of the tests nominated in the research before doing the main experiment in order to be sure that the tests used in the research are accurate and scientific. These scientific bases were validity, reliability, and objectivity as follows:

First: Test Validity

One of the necessary scientific qualities of a test is validity. A test is valid if it measures what it is supposed to measure or what it is meant to measure. The researcher calculated the validity coefficient of the skill tests nominated by using the method of content validity. This was achieved by preparing a form of proposed tests to measure the basic handball skills under investigation and presenting it to a group of experts and specialists who have experience in handball. Validity of the nominated tests was based on the opinions and agreement of these experts and specialists about the appropriateness of the tests to measure the selected skills.

Second: Test Reliability

Test reliability is a measure of how consistently a test measures what is being tested when it is repeated under similar circumstances. In order to establish reliability coefficient of the skill tests that were nominated by the researcher, the researcher administered the tests to the members of an exploratory sample of science students from fourth grade, which consisted of six (6) students.

This is the first application from 10/22/2023. The same tests were reapplied to the same sample 7 days later on 10/29/2023 with similar testing conditions. The reliability coefficient obtained from the two applications was compared with the tabulated correlation coefficient (r) for (10) degree of freedom and at (0.05) level of significance and the (0.576) value was found. The results showed that the tests used in the research had an appropriate level of reliability.

Third: Test Objectivity

Test objectivity is how much test results were independent of the personal judgement or subjectivity of the examiner. For an objective test, the student's score should be the same or close to the same with each evaluator.

For the basic handball skill tests to be objective, the researcher used the simple Pearson correlation coefficient to compute the correlation score obtained by the two evaluators for the skill tests in the exploratory experiment. The results revealed that there was a high level of agreement between the scores obtained by the two evaluators which reflected a high level of objectivity of the tests used in the study as illustrated in table (4).

Table 4. Stability and objectivity transactions

No	Test name	stability coefficient	Objectivity factor
1	Catch and receive ball	0.87	0.87
2	Passing ball towards three circles drawn on wall	0.90	0.85
3	Scoring	0.89	0.85

Exploratory Experiment

The researcher performed an exploratory experiment with six (6) students who were not part of the main research sample but were selected from the original research population on 10/22/2023. The researcher and the subject teacher supervised the experiment. This was an exploratory experiment to find out what difficulties and obstacles might be encountered in implementing the main field experiment. It also intended to explore the conditions under which the tests would be performed, to check the appropriateness of the location for the implementation of the tests, to confirm the validity and suitability of the tools and equipment used, and to assure the complete understanding of the nature of the work and procedures required during the experiment by the supporting team.

Pre-Tests

The pre-tests were carried out Sunday 11/5/2023 at Al Bathaa Secondary School for Boys handball court with the accompanying team present. The tests were conducted following the previously determined test procedures and test conditions to measure the starting level of performance of the participants prior to the educational curriculum.

Educational Curriculum

The researcher used the educational skill curriculum developed by the subject teacher which was in line with the vocabulary of the handball curriculum. The course was divided into 12 (twelve) units of education that included three basic skills of handball: holding the ball, passing and receiving the ball. The educational units were adopted at two/week per section rate. Each educational unit lasted a half-hour (45 minutes) and was divided into:

1. Preparatory Section: 12 minutes.

This section consisted of attendance, warm-up, student organization for the main portion of the lesson.

2. Main Section: 25 minutes

The educational aspect was a part of this section where the skill being taught was explained and demonstrated and then the exercises to be applied were explained. This also included the

practical component where the students would carry out the exercises relevant to the skill they were learning.

3. Final Section: 8 minutes

Light jogging, a small activity for recreation and a student organisation, all included in this section, before leaving the lesson.

Post-Tests

Once the educational units were implemented, post tests for the selected handball skills were carried out on 1/2/2024. To ensure consistency of the two measurements, the post-tests were carried out in the same conditions, with the same research methodology and the same team of support.

Statistical Methods

The researcher used the following statistical methods to process and analyze the research data:

1. Arithmetic mean.
2. Standard deviation.
3. Median.
4. Independent Samples t-test.
5. Skewness coefficient.
6. Simple Pearson correlation coefficient.

RESEARCH RESULTS

This is where the results of the pre- and post-test on the Command-Style Group for the selected basic handball skills are presented.

Table 5. Significance of differences between pre- and post-tests for American style group

Variables	Pre-tests		Post-tests		F	F2	Calculated T value	Sig.
	Mean	St.d	Mean	St.d				
Holding ball	27.81	3.43	29.12	7.44	20.50	4.54	7.09	Sig.
Passing	5.75	1.17	7.55	3.19	13.18	2.85	6.82	Sig.
Receiving ball	2	1.75	4	1.46	3.68	1.68	15.4	Sig.

The tabulated (t) value at significance level (0.05) and degree of freedom (15) is (2.13). Table 1 shows the arithmetic means, standard deviations and calculated (t) values for the pre- and post-test measurements of the basic handball skills selected for the first group which was taught by command teaching method.

As far as the ball holding skill is concerned, the arithmetic mean for first group was (27.81) with a standard deviation of (44.7) in pre-test and the arithmetic mean was (20.50) with a standard deviation of (4.54) in post-test. The calculated value (t) was (0.97). The results showed that there was a significant difference between the pre- and post-test measurements at the (0.05) level of significance and (15) degree of freedom in favor of post-test measurement.

In the pre-test, the arithmetic mean for the first group was (75.5) and the SD was (19.3) while in the post test for the first group, the arithmetic mean was (8.13) and the SD was (85.2). Calculated (t) value was (82.6). The results showed that the difference between the pre-test and post test measurements was statistically significant at the level of significance (0.05) and degree of freedom (15) with the post test measurement being higher.

Differences were also found between the pre- and post-test measurements in the results for the ball-receiving skill. The pre-test mean for the first group was (2) and the standard deviation for the first group was (46.1) while the post-test mean for the first group was (68.3) and the standard deviation for the first group was (53.1). The computed (t) value was found to be (7). At the

significance level (0.05), the students' results showed statistical differences between the pre-test and post-test measurements, in favour of the post-test measurement.

In general, the results of pre- and post-tests comparisons showed the performance of the first group by using command teaching method in the selected basic handball skill under study was improved.

Table 6. Significance of differences between pre- and post-tests of cooperative group

Variables	Pre-tests		Post-tests		F	F2	Calculated T value	Sig.
	Mean	St.d	Mean	St.d				
Holding ball	25.3	5.32	31.11	2.15	15	8.18	7.09	Sig.
Passing	4.5	3.07	7.72	4.22	17.18	2.68	6.82	Sig.
Receiving ball	2.25	1.16	5	1.61	5.37	39.64	15.4	Sig.

Table 7. Significance of differences between post-tests of two groups

Variables	Command Group		Cooperative group		T value		Sig.
	Mean	St.d	Mean	St.d	Calculated	Tabular	
Holding ball	20.5	4.54	15	2	3.69		Sig.
Passing	13.18	2.85	17.18	3.52	2.48	2.04	Sig.
Receiving ball	3.68	1.53	5.37	1.7	2.48		Sig.

The tabulated (t) value at a significance level (0.05) and a degree of freedom (30) is (2.04). The arithmetic means and standard deviations of the post-test scores of the selected basic handball skills of the first group (command method) and the second group (cooperative method) are shown in Table (7).

The results revealed that the arithmetic mean of the first group (command) in the post test for ball holding skill was (20.5) with (54.4) standard deviation while the arithmetic mean of second group (cooperative) in the post test for ball holding skill was (15) with (2) standard deviation. The calculated value (t) was (69.3). The results showed that there was a statistically significant difference between the two groups (cooperative and non-cooperative) at the 5% level in favor of the second group (cooperative).

In the context of passing skill, the arithmetic mean of the first group (command) in the post-test was (18.13) with a standard deviation of (85.2) while the arithmetic mean of the second group (cooperative) in post-test was (18.17) with a standard deviation of (52.3). The t value calculated for this was (94.2) which was statistically significant (30) Degree of freedom and (0.05) level of significance, favoring the second group by the cooperative method.

The results referring to the ball receiving skill have also indicated that the arithmetic mean of the first group (command) in the post-test is (3.68) and the standard deviation is (53.1), while the arithmetic mean of the second group (cooperative) in the post test is (5.37) and the standard deviation is (7.1). The calculated (t) value was (48.2) which is statistically significant as compared to the second group (cooperative) at degree of freedom (30) and significance level (0.05). In general, the comparison of post-test scores of two research groups in the basic handball skills under study indicated statistically significant differences between the two research groups, favoring the cooperative learning group as shown in Table (7).

DISCUSSION

Comparisons between the results of the members of both research groups in the post-skill tests (Tables (5) and (6)) revealed a clear and noticeable improvement in the performance of members in both research groups. The results of this study support the first hypothesis, which

predicted that reading comprehension would be positively correlated with the student's grade in English Language Arts.

Besides suitable and consistent repetitions corresponding to the levels and abilities of the participants, the researcher considers the suitability of the educational curriculum, including exercises selected scientifically, as a factor which contributed to this improvement. The curriculum was also organized and appropriate practice, and this positive impact on the development of students' skill performance.

This interpretation is in line with Qasim Lazam (2005), who stressed that training and practice of a certain skill in a motor task would lead to making experience and building up performance. Therefore, practice is regarded as one of the most salient factors that affect learning for simple and complex motor skills.

The results presented in Table (7) also revealed that the calculated (t) values for the skill tests investigated revealed significant differences between the post-test performances of the two groups in favor of the second group which adopted the cooperative teaching method.

The researcher views the superiority of the cooperative group as being the result of the nature of this teaching method that gives the students an appropriate opportunity to observe their classmates' motor performance errors and correct them in an early stage in response to their feedback. Feedback gives information to the learner which is specific and clear about the outcome of the performance and the form of the movements to improve the way they are executed.

A further reason why the cooperative method is superior is because there is an observing student who has a supportive instructional role for the student doing the skill. The observer assists the performer in recognizing and correcting errors when performing a skill. Adel Awda (2001) stated that observing student would give him mental picture of the motor skill clearer and it would help to develop the mental picture of his body part for the learner as well as to correct the errors of the performing student, which would also help to develop the learner's cognitive and intellectual aspects.

It is also in agreement with the superiority of the cooperative method, as Basman Abdul Wahab (2002) pointed out that students who had been taught by the command method generally wait for instructions and orders from the teacher before performing the motor skill. Students, on the other hand, who are getting involved in the cooperative method are constantly engaged in the educational process, either performing the motor task themselves or assisting, observing and guiding their classmates.

CONCLUSIONS AND RECOMMENDATIONS

Based on the results obtained from the present research, the following conclusions were reached:

1. Both the command and cooperative teaching methods had a positive effect on learning the selected basic handball skills and contributed to improving the students' skill performance.
2. The cooperative teaching method proved to be more effective than the command method in the learning process of the basic handball skills investigated in the study.
3. The cooperative method demonstrated clear superiority in learning the skills of holding the ball, passing, and receiving the ball compared with the command teaching method.

Based on the results and conclusions of the research, the researcher recommends the following:

1. Using both the command and cooperative teaching methods in the process of learning basic handball skills.
2. Teaching selected basic handball skills with more focus on cooperative method due to its positive impact on the learning process.
3. To perform similar studies on other age groups not studied in the present research.

4. Further studies to explore the impact of other teaching methods on the acquisition of other basic skills in handball and sport.

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