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The Effect of the Flipped Classroom Strategy on Learning Basketball Handling and Dribbling Skills for Students

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Abstract

The research aims to prepare educational units according to the flipped classroom strategy and apply them to the students of the first stage at the Faculty of Physical Education and Sport Sciences for the evening study, Al-Muthanna University, to identify the effect of the strategy on learning the skill of (high beating) and the skill of (chest handling) in basketball. Accordingly, the researchers used the experimental method with the design of the two equal groups, while the research population represented the students of the first stage in the Faculty of Physical Education and Sport Sciences for the evening study, Al-Muthanna University for the year The students (2025-2026), who numbered (20) students, were divided by lottery into two control groups and an experimental group of (10) female students in each group. Then the researchers worked to determine the research tests and then they started applying two introductory units about the two skills (high beating) and (chest handling) in basketball because the sample does not have prior education for this skill, and then the pre-tests were applied, then they started to apply the strategy, which lasted for 6 weeks with two educational units per week, and after completion, they started to apply the post-tests, and when the results were obtained, they were analyzed by SPSS program. Accordingly, the researchers concluded that the flipped classroom strategy has an important role in learning (high dribbling skill and chest handling skill) in basketball, and this was shown by the results, as the sample of the experimental group outperformed the sample of the control group, which applied the traditional method.

Keywords: Strategy, Inverted Row, Chest Handling, Tapping, Basketball.

Introduction

Learning is the basis of the advancement of peoples, as it impacts the preparation of a decent generation created according to current and sophisticated scientific foundations, and this is reflected favourably in the progress of the peoples and achieving the highest levels (Cojocaru et al., 2022). One of the priorities of learning and teaching in the area of physical education is to use models, methods and strategies that simulate the level of the learner, so that an educational environment is created that corresponds between the study material and the level of the learner (Adil & Kasim, 2026; Ferraz et al., 2023). The basketball lecture is one of the important lectures in the Faculty of Physical Education as it contains a variety of skills and the stages of learning this event are distributed according to the academic stages and in the first stage the basic skills of this event are taught (Wang, Yuan & Ji, 2024). The teaching process is directed to constant and ongoing research for the most important methods of learning and the implementation of techniques that have a function in providing the learner with information in a shorter time and

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consolidating the scientific content more (Han, 2024). because traditional methods in which the teacher is the main controller of the lesson and this makes the students more dependent on the teacher, but when considering modern strategies and methods in learning we find that the student is the focus of the education process because it makes the learner more interactive and involved in the lecture, which helps in building the character (Habeeb & Kiasm, 2025; Franco et al., 2023). This is one of those strategies and it is the flipped classroom strategy. This strategy is designed to make the learner be able to be creative and interact. This is because it makes the individual face a confusing environment which requires him to explore the information, and when he gets it, it helps him organise the information so that he can put it in a good way (Gallardo-Guerrero et al., 2022).

This strategy helps in finding the best solutions to the explanations that are circulating in the learner's mind, because it collects information about the effectiveness to be learned, and then the learner seeks to think and discover mistakes, and with the help of colleagues, the learner develops discussion and dialogue, and the learner is trained on how to make a decision (Hussein & Kasim, 2022; Lin, Hsia & Hwang, 2025).

Therefore, the importance of the research is in the use of modern teaching methods that take care of the learner and take into account the individual differences and capabilities of the learner, in addition to stimulating the ideas of the learners and making them able to find the appropriate solutions and make decisions, and this is what we find in the flipped classroom strategy, as it will be applied to students for the purpose of learning the skills of handling and drumming in basketball in an effort by the researchers to reach the highest levels with the least possible time and effort.

Research Problem

The contemporary period represents a major turn in the ways of teaching and learning, as the focus has moved away from passive indoctrination toward empowering the learner and making him the primary point of the educational process (Herrán-Gascón & Rodríguez-Herrero, 2024). Within physical education, team game skills, especially basketball, such as high drumming and chest handling are becoming increasingly important, and require teaching methods that go beyond the traditional direct explanation and presentation in the classroom, which can sometimes limit the actual time investment of the lesson and reduce the opportunities for repetition and individual feedback (Nae & Pop, 2022).

Hence, there is a great necessity to use modern digital and educational strategies that combine self-learning outside the classroom with practical application inside it, and the Flipped Classroom Strategy is one of the most prominent contemporary methods that allow students to watch the content of skills and explanatory media in advance, which gives more time for application and direct motor interaction under the supervision and guidance of the teacher (Østerlie, Killian & Sargent, 2022).

Given the great importance of basketball in the academic and school curricula, what is observed on the ground is the need for accurate scientific verification of the effectiveness of transforming the traditional classroom environment into a blended environment through the flipped classroom in accelerating the acquisition and mastery of the basic skills under study compared to the usual methods.

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Based on the above, the research problem is determined in a serious attempt to answer the following questions:

1. Does the flipped classroom strategy have a statistically significant effect on the learning of the skills of (high drumming) and (chest handling) in basketball for students?
2. Are there any statistically significant differences between the responses of the group taught in the flipped classroom strategy and those taught in the traditional way in learning these two skills?

Research Objectives

1. Identifying the Effect of the Flipped Classroom Strategy on Students' Learning of the Skill of (High Drumming) and the Skill of (Chest Handling) in Basketball among Students.
2. Identify the differences between the application of the flipped classroom strategy and the application of the traditional method in learning the skill of (high pating) and the skill of (chest handling) in basketball for students.

Research Hypotheses

1. The flipped classroom strategy has a positive effect on students learning the skill of (high pating) and (chest handling) in basketball.
2. There are differences between the application of the flipped classroom strategy and the application of the traditional method in learning the skill of (high drumming) and the skill of (chest handling) in basketball for students.

Research Areas

Human Area: Students of the First Stage of Evening Studies at the Faculty of Physical Education, Muthanna University

Temporal Area: For the period from 1/2/2026 to 22/4/2026

Spatial Area: Basketball Court at Muthanna University.

Methodology

Research Methodology

The researcher (or researchers) used the experimental method to suit the nature of the research objectives, and relied on one of the experimental designs, which is the design of the two equal (homogeneous) groups with pre- and post-tests, as it is the optimal design that allows measuring the impact of the strategic independent variable on the dependent variable (learning the skills under research), while controlling the external factors that may affect the integrity of the experiment.

Research community and sample

The researchers identified their research community, which is represented by the students of the first stage at the Faculty of Physical Education and Sport Sciences, for the evening study at Muthanna University for the academic year (2025-2026), which is (20) students, while the research sample, which is part of this community, was divided by lottery into two control and experimental groups of (11) students in each group.

Means of collecting information

The researchers used basketball as a means of gathering information.

Devices and tools (number) used in the search

- Smooth wall.

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- Basketball.
- Stopwatch.
- Indicators.

Description of Research Variables

First- The test of wall handling (Bird, S. P., & Markwick, W. J. (2016).

- **Test Purpose:** Measurement of Basketball Chest Handling Speed
- **Tools used :** Smooth wall, legal basketball, electronic stopwatch, whistle
- **Procedures:** 1.5 meters away from a smooth wall drawing a line on the ground.
- **Test Method :** The tester stands on the line facing the wall and when the start signal is fired, he passes the ball towards the wall and performs 15 passes at chest level without taking any step forward.
- **Registration: The laboratory** calculates the time taken since the start signal is launched, as fifteen handlings are performed, provided that the ball touches the wall.

Second: The Test of Dialogue with the Ball Round and Forth between Four Indicators (Kozina et al., 2017).

- **Test Purpose**: Measure high batting skill in basketball
- **Tools used :** 5 markers , stopwatch, legal basketball.
- **Procedures: A** distance of 10 meters is determined by a line, at a distance of 6 meters, the first indicator is placed, and then four other indicators are placed , noting that the distance between one indicator and another is 1 meter .
- **Method of performing the test**: The tester stands holding the ball and on the starting line, and when he hears the signal to start the test, the tester performs the skill of drumming by running between the markers placed back and forth until he returns to the line from which he started.
- **Test Recording:** The time that the tester traveled the set distance back and forth from the moment of start until it crossed the starting line and to the nearest fraction of a second.

Exploratory Experiment

Experts and specialists recommend conducting an initial exploratory experiment on (5) students from outside the research sample, as research tests were applied to them in order to ensure the safety of the tools and the nature of the suitability of the tests on the research sample, as this experiment was applied in the basketball court of the Faculty of Physical Education and Sport Sciences - Muthanna University on 9/2/2026 at two thirty o'clock in the afternoon.

Main Experience

Introductory Modules

In order to work, and since the skill cannot be measured unless there is prior learning, the researchers gave two units of definitions to the experimental and control sample members in the same week on 12/2/2026 and on 15/2/2026. At 2:30 p.m.

Pre-Tests

The researchers conducted the pre-tests on the research sample, where the discus throwing test was performed, through which the students' performance was filmed, and that was on 16/2/2026

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at 2:30 p.m. in the basketball court at the college, and the researchers wrote down all the belongings of the test for the purpose of benefiting from them in the post-tests.

Plan for the implementation of the Flipped Classroom Strategy

The researchers started to apply the flipped classroom strategy to the members of the experimental group sample for the period from 19/2/2025 to 10/4/2026, and the researchers included their educational units as follows:

1. The duration of the implementation of the strategy was 8 weeks, with two educational units per week.
2. The number of educational units reached 16 educational units.
3. The modules were applied on Mondays and Wednesdays of each week.
4. The strategy was applied in the main part of the total educational unit for 60 minutes, with 15 minutes of instructional part and 45 minutes of applied part, as it was applied immediately after the warm-up so that the student can be mentally and physically ready to receive information.
   - ❖ The strategy included six phases:

First Stage: The skill is shown.
Second Stage: Repeated errors of the skill are diagnosed.
Stage Three : Questions about the reason for the wrong performance about the skill are presented and discussed with the students and emphasized that it has been corrected.
Fourth Stage: Choosing the appropriate solutions through explanation and presentation of the skill.
Fifth Stage: Formulating and organizing ideas in exercises that help solve the problem.
Sixth Stage: Performance Evaluation.

Post-tests

After completing the application of the flipped classroom strategy, the researchers started applying the post-tests to the research sample on Thursday 11/4/2026, and the researchers were keen to provide the same conditions related to the pre-tests.

Statistical Methods Used

The researchers used the statistical program (SPSS-25) using the following methods:

- ❖ Arithmetic mean.
- ❖ Standard deviation.
- ❖ The t-value of the correlated samples .
- ❖ T-value for independent samples.

Results

Presentation and analysis of the results of the pre- and post-tests of the control and experimental groups

Table 1: Shows the differences between the pre- and post-tests of the control group sample

Variables	Unit of Measurement	Pre-test		Post-test		T	Sig
		M	SD	M	SD		
Handling	Second	19.158	2.086	16.274	1.874	3.762	0.000
Dribbling	Second	18.266	2.223	15.918	1.862	3.831	0.000

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The above table shows that there is a significant difference between the pre- and post-test and in favor of the post-test of the control group sample because the significance level value of the t-test for the correlated samples was less than 0.05, which indicates the significance of the difference.

Table 2: Shows the differences between the pre- and post-tests of the experimental group sample

Variables	Unit of Measurement	Pre-test		Post-test		T	Sig
		M	SD	M	SD		
Handling	Second	19.049	2.156	14.148	1.527	6.474	0.000
Dribbling	Second	18.511	2.304	13.226	1.656	7.018	0.000

The above table shows that there is a significant difference between the pre- and post-test and in favor of the post-test of the experimental group sample because the significance level value of the t-test for the correlated samples was less than 0.05, which indicates the significance of the difference.

Presentation of the results of the comparison of the control and experimental groups in the post-tests

Table 3: The difference between the control and experimental groups in the post-tests

Variables	Unit of Measurement	Control		Experimental		T	Sig
		M	SD	M	SD		
Handling	Second	14.274	1.874	14.148	1.527	8.559	0.000
Dribbling	Second	14.918	1.862	13.226	1.656	9.437	0.000

The above table shows that there is a significant difference between the control and experimental groups in the post-tests and in favor of the experimental group results because the significance level value of the t-test for the independent samples was less than 0.05, which indicates the significance of the difference.

Discussion of the results

The researchers ascribe this disparity to the proper implementation of the stages of the flipped classroom strategy utilised in the educational units, which facilitated students in assuming an effective and participatory role, enabling them to make decisions regarding the appropriate timing for executing manoeuvres such as handling and basketball dribbling.

The investigators assert that the students' consistency and enthusiasm for engaging with the educational modules accomplished the intended objective of skill acquisition, which will significantly influence students' attendance in lectures and mitigate feelings of tedium; this is corroborated by Lye and Kawabata (2021), who indicate that the presence of stimulation in lectures is a crucial element in the commitment of participants and their assurance against the learner's experience of monotony, thereby enhancing the learning process.

The researchers assert that the objective of the strategy is to effectively harness students' energy for research and inquiry, as it fosters a climate of discussion and dialogue, enabling students to structure and implement their ideas. Furthermore, the enjoyment, excitement, and suspense inherent in the strategy rendered students proactive and impactful in addressing certain questions posed by the teacher, thereby equipping them to investigate, analyse, and seek answers, a process driven by information gathering and performance discussions, aligning with the findings of Sato

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et al. (2026), which suggest that learners in perplexing environments must explore and uncover surrounding information, and once acquired, they require an efficient method to organise and retain it in memory for timely retrieval.

The researchers contend that the assessment of each individual's performance significantly enhanced the learning experience, particularly when evaluations are collaboratively conducted between students and instructors, alongside peer assessments, which fostered an environment conducive to the expression of opinions, ideas, comprehension, interpretation, and analysis. Furthermore, the teacher's involvement in addressing student enquiries and applying reinforcement principles during performance considerations acknowledged the diverse needs of learners, aligning with McRae's (2022) findings that granting students adequate time and space to articulate their thoughts on the skill facilitates their understanding and mastery of the instructional material.

Conclusions

1. The tests prepared by the researcher were able to measure the skill of (high pating) and the skill of (chest handling) in basketball.
2. The flipped classroom strategy plays an important role in teaching students the skill of (high dribbling) and (chest handling) in basketball.
3. Providing students with the opportunity to troubleshoot mistakes during performance contributed to further consolidating the skill, and this was shown by the results of the differences between the two groups in the post-tests.
4. Providing students with the opportunity to make them the center of the educational process and make them participate in lectures led to overcoming the nature of shyness and thus helped in the development of each student's personality.

Recommendations and Suggestions

1. Using the flipped classroom strategy because of its important role in learning the skill of (high pating) and (chest handling) in basketball for students.
2. The researchers in charge of the educational science recommend that they search for modern educational methods and methods and stay away from traditional methods.
3. The researchers in charge of the educational process recommend providing all available possibilities through which teachers seek to apply modern strategies.
4. Conducting other studies by applying the strategy to students and knowing the extent of its impact on learning basketball skills.
5. Conducting other studies to apply the strategy to activities other than basketball.

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