

EFFECT THE STRATEGIES (SELF-ORGANIZED LEARNING) AND (THE FLIPPED CLASSROOM) TO DEVELOPING THE EXPLOSIVE POWER AND STRENGTH ENDURANCE FOR TWO LEGS AND LEARNING THE TECHNICAL PERFORMANCE THE TRIPLE JUMP FOR STUDENTS

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ABSTRACT

The importance of the research is clear by using two research strategies that the researcher sees as having a great impact on the development of the physical abilities investigated, and these two strategies are a clear reason for students to learn the technical performance of the triple jump.

The research aims to identify the effect of the strategies of self-organized learning and the flipped classroom in developing the explosive strength and elongation of force for the two legs and learning the technical performance the triple jump for students. As well as identifying the significant differences between the two experimental research groups (self-organized learning and the flipped class) in the results of the post-tests.

The research community consisted of students of the second stage in the College of Physical Education and Sports Sciences / University of Kerbala for the academic year 2020-2021 AD, which numbered (118) students distributed over (4) divisions are (A - B - C - D) and in a random manner by lottery method. Division (B) as a first experimental group (self-organized learning) and Division (D) as a second experimental group (the flipped class), as the researcher conducted his experiment on a sample of (30) students representing two divisions (B-D), with a total of (15) students from each division. The proportion of the sample from the original population is (25.42)

Among the most important conclusions reached by the researcher, the strategies of (self-organized learning) and (inverted class) had a positive impact on developing explosive power, strength prolongation, and learning technical performance for the effectiveness of the triple jump for students. The (inverted class) strategy showed superiority over the (self-organized learning) strategy in developing explosive power and strength extension and learning the technical performance of the students' triple jump effectiveness.

One of the most important recommendations is to pay attention to the strategy of self-organized learning as a teaching strategy in the educational units in universities, which works to increase the independence of students, activate them and show their creators, and pay attention to the strategy of the flipped classroom as a teaching strategy that links technology to the educational process and activates their mental aspect.

INTRODUCTION:

The rapid and tremendous developments in various branches of knowledge and the increasing number of people coming to learn impose on specialists in the field of teaching methods the need to reconsider teaching strategies in order to fit with modern developments in teaching, and represent the solution through strategies, methods and modern teaching methods, and among these strategies is the learning strategy Self-organizing and the flipped classroom strategy.

With this premise and in the technological and scientific progress that has taken place, a modern strategy has emerged on the scene that seeks to reshape the educational process so that the role of the learner is changed from the recipient to building information and taking responsibility for his education. Among these strategies is the flipped classroom strategy, it is one of the strategy that transfers learning from the collective place to the individual place by watching educational videos and pictures at home individually, then the home room is transformed into a learning environment, and the role of the teacher is directed, designed and a guide to implement what they have taught.

The second type of strategies is the self-organized learning strategy, as it provides an adequate opportunity for continuous learning in addition to academic excellence. As self-organized learning strategies are used by students to organize their knowledge, such as using different cognitive and metacognitive strategies, and strategies for managing educational resources.

It is known that athletics is one of the games that consists of a large number of activities that the teacher or coach is required to teach and communicate to learners or players and develop them well in order to raise their skill performance, and this is through the use of the appropriate and appropriate method, which is consistent or consistent with the nature and tendencies learners and their desires and bring them to a level of mastery and a high rank of efficiency and effectiveness in order to reach the goals to be achieved.

The work is not confined to the technical aspect only, but we have to pay attention to the physical aspect, as physical abilities are the main pillar, which plays a prominent role in achieving the sporting achievements of various athletics, including the effectiveness of the triple jump for the two legs.

Through the foregoing, the importance of the research becomes clear by using two research strategies that the researcher believes that they have had a great impact on the development of the physical abilities in question, and these two strategies are a clear reason for students to learn the technical performance of the triple jump.

RESEARCH PROBLEM:

Through the researcher's work as a university professor specializing in teaching methods/athletics, and through his review of the educational process for the rest of the subjects and activities, he found that many teachers when teaching the subject do not rely primarily on the

use of modern teaching strategies that activate the educational process and deliver the idea correctly. Most of them depend on adopted methods that may not lead the student to the best learning in the educational process, this, in turn, leads to a weakness in improving the level of skill performance, which requires an actual study of the learning process. The researcher also noted that some teachers do not rely on the use of modern technology in teaching, as well as they do not care about developing physical abilities that are of great importance in the level of technical performance of activities, as a reaction to the shortcomings in the teaching or teaching environment and according to recent trends, the researcher chose two strategies of teaching (self-organized learning) and (the flipped classroom), believing in the development of the educational process in terms of developing some physical variables among students and facilitating the process of acquiring and developing athletics activities in general and effectively triple jump in particular and mastery down to a better level.

RESEARCH OBJECTIVES:

- Identify the effect of the strategies of self-organized learning and the flipped classroom in developing the explosive strength and elongation of force for the two legs, and learning the technical performance of the students' triple jump.
- To identify the significant differences between the two experimental research groups (self-organized learning and the flipped class) in the results of the post-tests.

RESEARCH HYPOTHESIS:

- There are significant statistically significant differences between the pre and post-test of the two experimental groups in the development of explosive power and strength elongation for the two legs and learning the technical performance the triple jump for students.
- There are significant statistically significant differences in the results of the post-test of the two experimental groups in the development of explosive power and strength extension for the two legs and learning the technical performance the triple jump for students and in favor of the second experimental group (the inverted row).

RESEARCH FIELDS:

The human field: Students of the second stage in the College of Physical Education and Sports Sciences / University of Kerbala for the academic year (2020-2021).

Time field: from 3/11/2020 to 2/3/2021.

Spatial field: Track and field stadiums in the College of Physical Education and Sports Sciences / Kerbala University.

RESEARCH METHODOLOGY AND FIELD PROCEDURES:

Research Methodology

The nature of the problem is the basis through which the research method is chosen, so the researcher used the experimental method with two equal experimental groups due to its relevance to the nature and objectives of this study.

Community and sample research:

The research community consisted of students of the second stage in the College of Physical Education and Sports Sciences / University of Kerbala for the academic year 2020-2021 AD, which numbered (118) students distributed over (4) divisions are (A - B - C - D) and in a random manner by lottery method. Division (B) as a first experimental group (self-organized learning) and Division (D) as a second experimental group (the flipped class), as the researcher conducted a field experiment on a sample of (30) students representing two divisions (B-D), with a rate of (15) students from each Division the percentage of the sample from the original population is (25.42). (10) students were chosen to represent the pilot experiment sample, and the researcher excluded a number of the sample members, who are the students who have failed and those with pathological disabilities and the students who practice this activity.

The homogeneity of the sample and the equivalence of the two research groups:

Sample homogeneity: The researcher used the coefficient of variation law to measure homogeneity in the variables (Length, Mass) among the sample members, as shown in Table (1).

Table (1) shows the mean, standard deviation, and coefficient of variation in the study variables.

Variables	Unit of measure	Mean	Std. deviation	Variation coefficient*
Length	Cm	181.36	3.25	0.03
Mass	Kg	75.18	6.41	0.51

* All values of the coefficient of variation were less than 30%, which indicates the homogeneity of the sample in the above variables.

Equivalence of the two research groups:

For the purpose of determining the starting point, the researcher found parity between the two groups using the (t) test for independent samples in the study variables, and the table (2) shows that.

Table(2) shows the equivalence of the two research groups in the research variables.

Variables	Control group		Experimental group		T value		Sig type
	Mean	Std. deviation	Mean	Std. deviation	Calculate d	Tabular	
Explosive power for legs	1.62	1.54	1.66	1.24	0.934	2.02	Non sig
Strength endurance for legs	44.62	0.71	45.32	0.84	0.820		Non sig
triple jump	3.21	0.39	3.35	0.37	0.69		Non sig

The tabular value (t) at the degree of freedom (28) and the level of significance (0.05) is (2.02).

By noting the calculated (t) values of the research variables, we find that they are less than the tabular (t) value of (2,02) at the degree of freedom (28) and the level of significance (0.05), which indicates that there are no significant differences, and this means that the two groups are equivalent in the variables search .

TOOLS AND EQUIPMENT:

Arab and foreign sources - tests and measurement- observation.

Auxiliary Tools:

Measuring tape - medical scale - chalk - whistle – Wight powder - two (2) manual stopwatches - scientific calculator- Wall of suitable height - flat ground..

Tests used in the research:

Explosive power for legs : (Abd al-Fattah and Hassanein, 1997, p. 35)

Vertical jump test:

Objective of the test: To measure the explosive force and speed characteristic of the muscles of the lower extremities

Tools used: a specific place to take the test, a linen tape measure, a piece of chalk, a wall of suitable height.

Performance specifications: The player stands near the wall so that one of his shoulders faces the wall. From a standing position, the player raises his arms that are close to the wall high, to make a mark on the wall at the farthest point reached by the hand. The distance is recorded after that he lowers his arm and then jumps up after flexing Knee joint as in position (2) in the same figure to make another mark with his hand on the wall at the farthest point reached by his arm and record the distance as in position (3) provided that both legs are pushed.

Registration: The student is given two consecutive attempts, and the best of them are recorded.

The distance between the first mark and the second mark, which expresses the speed characteristic of the muscles of the lower extremities, is measured in centimeters.

Strength endurance for legs test : (Mahmoud, Edham Saleh, 2008, p. 44)

Flexion and extension of the legs from the knees from jumping until exhaustion:

The objective of the test: to measure the length of force of the muscles of the legs.

Tools used: whistle, level ground.

Method of performance: From the standing position and at the start signal, the tester jumps with the process of bending and extending the legs completely from the knee joint, and the performance of the player continues until reaching the stage of extreme fatigue, after which he cannot perform the test.

Performance conditions: The attempt is considered invalid if the tester does not perform the flexion and extension movement completely.

Registration: The number of times the legs are fully flexed and extended from the knee joint is recorded.

Determination the triple jump test:

After examining the researcher on several special sources in measuring the technical performance, as the researcher did not find better than depicting the technical performance of the students and he was exposed to a group of assessors as an accurate measure of the level of their technical performance for this event.

As the technical performance of the two research groups was photographed (and they were given two attempts for each student) and they were presented to two assessors with specialization in athletics to evaluate the technical performance of this activity under discussion.

EXPERIMENTAL EXPERIMENT:-

After completing the required procedures, and to identify the factors and obstacles that may encounter the researcher when carrying out the main experiment, and in order to obtain correct and accurate results in accordance with the scientific methods used, the researcher conducted the exploratory experiment on Tuesday, on (10/11/2020), on a sample composed From (10) students who were not from the research sample and from the community of origin, and the researcher aimed from this exploratory experiment to the following:

- Identifying the difficulties that the researcher faces during the main experiment.
- Knowing the time allotted for conducting the tests.
- Ensure the safety of sports equipment.
- Knowing the requirements and times of educational units.
- Ensure the scientific bases of the tests used.

Scientific basis tests:

Validity of the tests: The test is considered validity if it measures what it was designed to measure. In extracting the validity of the tests, the researcher relied on the validity of the content by presenting the tests to a group of experts and specialists.

Reliability: To calculate the reliability coefficient, the test method is chosen and the test is re-applied, and the tests were applied to a sample of (10) students from outside the research sample, and these tests were repeated after (7) days of the first tests and on the same sample.

Objectivity:- :- One of the important conditions that must be met in a good test is the condition of objectivity, by which we mean “there is no difference between the assessors in judging something or on a particular subject.” (Bahi, Mustafa Hussein, 1999, p. 64), and on this basis, the researcher extracted the objectivity of the tests by finding the simple correlation coefficient between the scores Three evaluators from the evaluators, in addition to the presence of simple, clear and understandable tests and far from personal judgments, so the tests are highly objective, as shown in Table (3).

Table (3) shows the reliability and objectivity coefficient of the tests under study.

N	Tests	Unit of measure	Stability coefficient	Objectivity coefficient
1	Explosive power for legs	Cm	0.92	0.91
2	Strength endurance for legs	Degree	0.91	0.88
	Triple jump	Degree	0.94	0.96

Field Research Procedures:

Pre-test:

The pre-tests were conducted on Tuesday, November 24, 2020 AD on the field and field stadium in the College of Physical Education and Sports Sciences / University of Kerbala for the variables of explosive force and length of force for the two legs and a test of technical performance the triple jump for students and in the presence of the auxiliary work team.

The general framework for implementing the two teaching strategies:

After the researcher has identified all the requirements of the main experiment by defining the tests for the researched variables, after conducting the exploratory experiment and using it in organizing work and preparing for the main experiment, and before conducting the pre-tests, the researcher gave one introductory unit to each of the two research groups, the purpose of which is to give prior education to the student to identify on the nature of the effectiveness to be learned, as well as to achieve the goals that require the researcher to build educational situations that the learners will go through during the implementation of the two teaching strategies and study the place of implementation and the tools used within the framework of the method under study, and based on this:

- The researcher prepared the educational units for the two strategies for a period of (6) weeks, with one educational unit per week on Tuesdays of every week, and thus the total units reached (6) educational units, through the first educational unit on (Tuesday) date (1/12/ 2020) until (Tuesday) (5/1/2021), and benefit from previous sources, references and studies.
- For the first experimental group that works with the (self-organized learning) strategy, as this includes an explanation and presentation of the effectiveness in question, asking a number of questions to the students and giving them an opportunity to think that does not exceed several seconds for each question so that each student takes the correct answer, if one of the questions asked is unclear or Incomprehensible to students, there is an alternative question that carries the same answer as the question, but in an easier form using the self-organized learning strategy.
- As for the second experimental group that works with the flipped classroom strategy, the researcher met with the students of this group and in the presence of the subject teacher before starting to implement this strategy to explain and clarify how to implement it, and all the students' questions were answered.

The second experimental group implemented (the flipped classroom strategy), where the teacher creates a site in the social network (Facebook) for the experimental group after all members of the experimental group have been involved in this work. Preparing an educational video about the activity in question, sending it to the group, informing them of the date of publication, sharing their opinions, writing notes and questions, and communicating with each other before attending the lesson. During the lecture, the student applies what he saw in the video, with the participation of both the teacher and the fellow student, and finally, the teacher and the student discuss the questions that have been recorded.

Post-test:

After completing the educational units, the post-tests were conducted on Tuesday, 12/1/2021, under the same conditions in which the pre-tests were conducted, and in the presence of the same auxiliary team.

Statistical means:

- Percentage.
- Mean.
- Std. Deviation.
- T test.

PRESENTATION, ANALYSIS AND DISCUSSION OF RESULTS

Presentation and analysis of the results of the pre and post tests for the first experimental group (self-regulating learning) in the explosive power, Strength endurance for legs, and the of the triple jump:

Table (4) shows the significance of the differences between the pre and post-tests of the first experimental group (self-organized learning) in the explosive power and the strength extension of the legs and the triple jump:

Variables	Pre-test		Post-test		T value		Sig type
	Mean	Std. deviation	Mean	Std. deviation	Calculated	Tabular	
Explosive power for legs	1.62	1.54	1.65	1.46	5.31	2.14	Sig
Strength endurance for legs	44.62	0.71	45.10	0.34	6.41		Sig
Triple jump	3.21	0.39	5.21	0.48	20.14		Sig

* Tabular value (t) at the level of significance (0.05) and the degree of freedom (14) is (2.14)

Table (4) shows the arithmetic means, standard deviations, and the calculated (t) value between the pre and post test in the tests under research for the first experimental group (self-organized learning). The tabular (t) value of (2.14) with a degree of freedom (14) and below the level of significance (0.05), this indicates that there is a significant difference in favor of the post-test in all the variables under consideration..

Presentation and analysis of the results of the pre and post tests for the second experimental group (the inverted row) in the explosive power, length of force for the legs, and the effectiveness of the triple jump:

Table (4) shows the significance of the differences between the pre and post tests of the second experimental group (the inverted row) in the explosive power, the length of the force of the legs and the triple jump.

Variables	Pre-test		Post-test		T value		Sig type
	Mean	Std. deviation	Mean	Std. deviation	Calculated	Tabular	
Explosive power for legs	1.66	1.24	1.86	1.36	4.57	2.14	Sig
Strength endurance for legs	45.32	0.84	51.50	0.98	3.95		Sig
Triple jump	3.35	0.37	6.28	0.39	12.08		Sig

* Tabular value (t) at the level of significance (0.05) and the degree of freedom (14) is (2.14)

Table (5) shows the arithmetic means, standard deviations, and the calculated (t) value between the pre and post-test in the tests under research for the second experimental group (the inverted row), the results showed that all the differences for the tests are significant and in favor of the post-test because the calculated (t) value is greater than the tabular (t) value of (2.14) and with a degree of freedom (14) and below the level of significance (0.05), and this indicates a significant difference in favor of the post-test in all variables are under investigation.

Discussing the results of the pre and post tests for the two experimental groups in the research variables:

Through the results shown in tables (4,5), we find that there is a clear and tangible development for the members of the two groups in the post tests, and this is consistent with what was stated in the first hypothesis of the study. The researcher attributes the reason for the development of the **first experimental group (self-organized learning)** that used this strategy, and the educational units contained extremely precise and gradual exercises, as well as cognitive information that led to an accurate description of the technical performance of the effectiveness and the role that the teacher occupies in giving notes, directions and praise to students during Performing skill and physical exercises, feedback on performance, and the active role that students play in participating in performance and expressing their own observations. All of this led to an improvement in the physical abilities and technical performance of the event, and this was reflected in the improvement they obtained in the post-test, as the more they performed well, the better the results would be, and this in turn leads to a focus on the special effort that serves the technical performance of the activity in question, as Explanation, continuous presentation, and practice of skills help to reach effective and effective learning, which leads to mastery of technical performance, and "when the curriculum is implemented effectively, the student's overall performance improves a lot, and then students can gain the additional benefit of developing new learning about how to learn skills". (Amish, Saleh Radi, 2000, p. 66)

As for the reason for the development of the second experimental group (the inverted class) to the effect of using this strategy in improving the educational process and increasing self-

confidence and the ability to understand the material better and better, and giving a good opportunity for the student to participate positively in the learning process, as it allows the student at home to watch educational films and videos Through the computer or mobile devices, there is more integration with the process of teaching different skills and giving the student more opportunity to prepare or prepare himself before the lesson with effective interaction and discussion between the teacher and the student, so that the teacher can make good and full use of the lesson time, and that "the optimal use of the flipped classroom learning strategy among learners in practicing homework and performing skill exercises well, as well as the accuracy of preparing educational videos and films that provided learners with modern technologies, which led to teaching them the skill in an effective manner .(Hussein and Majid, 2019,1(4) p.34)

Presentation and analysis of the results of the post-tests for the two experimental groups in the explosive power, length of force for the legs, and the effectiveness of the triple jump.

Table (6) shows the significance of the differences between the post tests of the two experimental groups in the explosive power, the length of the force for the legs, and the triple jump.

Variables	self-organized learning		the flipped classroom		T value		Sig type
	Mean	Std. deviation	Mean	Std. deviation	Calculated	Tabular	
Explosive power for legs	1.65	1.46	1.86	1.36	3.41	2.04	Sig
Strength endurance for legs	45.10	0.34	51.50	0.98	2.64		Sig
Triple jump	5.21	0.48	6.28	0.39	4.52		Sig

*Table value (t) at the level of significance (0.05) and degree of freedom (28) is (2.02).

Table (6) shows the arithmetic means, standard deviations, and the (t) value calculated between the post-measurement in the tests under consideration for the two experimental groups, the results showed that all the differences for the tests are significant and in favor of the second experimental group because the calculated (t) value is greater than the tabular (t) value of (2.02) and with a degree of freedom (28) and below the level of significance (0.05), and this indicates a significant difference in favor of the experimental group. The second in all the variables under consideration.

Discussing the results of the post-tests for the two experimental groups:

Through the results shown in Table (6), we find that the value of (t) calculated for all the tests under study is greater than its tabular value, which indicates the significant differences between the post-tests of the two groups and in favor of the second experimental group that used the (inverted row) strategy. The researcher attributes the reason for the superiority of the second experimental group to the optimal use of technology and the great interaction for students for this type of teaching, as most students tend to use technology and its developments, as well as the presence of the great experience that was embodied among students due to the presence of the epidemic (Covid 19) and another transformation of the educational process. Years to use

technology, which made the students inclination and desire to use technology, as "flipped classroom learning is not just the use of technology in the learning process, but rather it is a case where appropriate and available technology is employed in order to enrich the learning process and improve student achievement, and this is done by reshaping the course of the learning process". (Karim, Afaf Abdel, 1990, p. 56)

And the use of modern technologies and the Internet in a way that allows the teacher to prepare the lesson through video clips, audio files, or other media, to be viewed by students in their homes or anywhere else using their computers, smartphones or tablets before attending the lesson, while the lecture time is devoted to discussions and projects and exercises the video is an essential element in this style of education where the teacher prepares a video clip of between 5 to 15 minutes and shares it with the students on a website or social network.

CONCLUSIONS AND RECOMMENDATIONS:

Conclusions:

- 1- The strategies (self-organised learning) and (flipped classroom) had a positive effect in developing explosive power, force extension and learning the technical performance of the triple jump for students.
- 2- The (inverted classroom) strategy showed superiority over the (self-organized learning) strategy in developing explosive power, strength extension and learning the technical performance of the triple jump for students.

Recommendations:

- 1- Paying attention to the strategy of self-organized learning as a teaching strategy in the educational units in universities, which works to increase the independence of students, activate them, and show the creators among them.
- 2- Paying attention to the flipped classroom strategy as a teaching strategy that links technology to the educational process and activates their mental side.
- 3- The physical aspect should be given great attention because it is one of the main factors for the technical performance of the triple jump.
- 4- The necessity of conducting other studies using modern teaching strategies on samples for other stages and on other variables.

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