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The effect of educational exercises according to the mind mapping strategy on the artistic performance of the triple jump event for students

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Abstract

Educational exercises and the mind mapping strategy are advanced educational methods that focus on improving learning processes and organizing information effectively. The learner's ability to perform this movement efficiently plays a major role in determining his success in the skillful performance of the triple jump event. Through the work of female researchers in the field of education, they noted there is a discrepancy in the artistic performance of the learners of this event, between positive and negative. All of this created a problem for the researchers, and the most important reason may be the learning exercises through mind maps. The researchers used the experimental method on a sample of (36) students in the middle school, Tariq Bin Ziyad School, Directorate of Education. The second Rusafa was divided into two groups: experimental and control. It used the triple jump test to measure the level of performance and achievement. It conducted the pre-test and then gave educational exercises according to the mind mapping strategy to the experimental group. As for the control group, it was learning in the teacher's style and conducted post-tests after 7 weeks. The researchers concluded that using the exercises The educational program, in accordance with the Mind Maps strategy, works to develop the artistic performance and achievement of the triple jump event for middle school students and recommends using and disseminating these exercises. This achieves one of the sustainable development goals of the United Nations in Iraq, which is (quality education) to provide the opportunity for students to acquire multiple skills as a result of using methods. Different in learning.

Keywords educational exercises, mind mapping strategy, effectiveness of the triple jump

Introduction:

Progress in the field of physical education requires continuous studies and experiments that are achieved scientifically in accordance with the scientific and practical principles and rules on which the curriculum depends to achieve its goals. Learning exercises and the mind mapping strategy are among the advanced educational methods that focus on improving learning processes and organizing information effectively. In a sporting context, this educational strategy can play a vital role in improving learners' understanding of the triple jump and developing their skills. The triple jump event consists of overlapping vital stages that require precise and harmonious movement to achieve distinguished performance. Every specific physical performance contains more than one

component to complete the artistic performance. The research problem arose as a result of the weakness of the technical performance of the triple jump event and the lack of use of methods that serve in performing this event. There is A discrepancy in the artistic performance of the learners of this event, between positive and negative. All of this created a problem for the researchers, and the most important reason may be the learning exercises. She worked to address this problem by providing educational exercises according to the mind mapping strategy to design a detailed educational plan that must be taken to achieve the specified goal. As for the importance of... The research highlights the importance of this study on the threshold of exploring how learning exercises, under the guidance of mind maps, can

contribute to improving the technical performance of the triple jump event, which contributes to developing learners' skills and achieving success in the sporting field and achieving better performance, with a focus on the potential impact of the exercises. Educational on the elements of the triple jump. Exercise plays an essential role in learning sports skills and achieving athletic excellence. Hence the importance of this study emerges on the threshold of exploring how learning exercises, under the guidance of mind maps, can contribute to improving the technical performance of the triple jump event, which contributes to developing learners' skills and achieving success in the sporting field and achieving better performance, with a focus on the potential impact. For educational exercises on the elements of the triple jump. Exercise plays an essential role in learning sports skills and achieving athletic excellence. By dedicating to exercises and including them in learning programs. The triple jump event is one of the athletics events that requires studying its educational exercises according to new scientific foundations related to the use of types and forms of exercises that affect its kinetic performance to achieve the highest level, as this event depends on its own variables that appear through the technical performance that achieves success. Through the work of the researchers in the field of learning, I noticed that there is a disparity in the artistic performance of the learners of this event, between positive and negative. All of this created a problem for the researchers, and the most important reason may be the basic learning exercises. I worked to address this problem by providing educational exercises according to the mind mapping strategy to design a plan. Detailed tutorials that must be taken to achieve the set goal and to regularly evaluate progress. Based on data derived from learning exercises and comparing them to the objectives set at the beginning, as educational exercises play an essential role in learning sports skills and achieving sports excellence (Jumana, Zainab) (7). To be an effective tool in developing sports skills and achieving success by dedicating to exercises and

including them in learning programs, learners can improve their skills, enhance their physical fitness, and enhance their psychological aspects, which ultimately leads to outstanding sports performance. The research aims to prepare educational exercises according to the mind mapping strategy in the artistic performance of the triple jump event. To identify the effect of educational exercises according to the mind mapping strategy in the artistic performance of the triple jump event. Research hypotheses: There are statistically significant differences between the pre- and post-tests in the level of triple jump performance for the experimental and control groups. There are statistically significant differences between the experimental and control groups in the post-tests in the level of triple jump performance in favor of one of the two groups. Field of research: The human field, some middle school students, the temporal field, the period extending from 15/10/2023 until 30/11/2023, the spatial field, Baghdad.

Method and procedures:

The researchers used the experimental method (designed by two equal groups) to suit the nature of the problem. The research sample was selected in a simple random way through a lottery from the research community, middle school students for the academic year 2023-2024. The research sample was selected in a simple random way through a lottery from the research community, middle school students for the year. Academic year 2023-2024, as the selection fell on Tariq Bin Ziyad Preparatory School, Rusafa Second Education Directorate, after the researchers identified (5) schools that agreed to conduct the experiment and provide a playground, and the choice was made on two divisions (A, C) from the total division of the fourth stage, which numbered 90 students and excluding students who practiced jumping, those who failed, those who were not committed to the educational units, and the students of the exploratory experiment, so that the total final number reached (36) students for each group (18) students.

Table .1 Normal distribution of the sample in some research variables

Variables	Measuring unit	No	Mean	Median	Std. Deviations	Skewness
Approximate run	Degree	36	4.638	5	0.761	0.089-
Bounding	Degree	36	2.194	2	0.709	0.301-
Step	Degree	36	1.972	2	0.654	0.027
jump	Degree	36	2.472	2	0.909	0.087
Achievement	Meter	36	8.921	8.91	0.293	0.393

Table .2 show the equality between the two groups represents the arithmetic means and standard deviations of the research sample

Variables	Measuring unit	Pre-test		Post-test		T value calculated	Level Sig	Type Sig
		Mean	Std. Deviations	Mean	Std. Deviations			
Approximate run	Degree	4.722	0.826	4.5555	0.704	0.651	0.519	Non sig
Bounding	Degree	2.277	0.669	2.111	0.758	0.699	0.489	Non sig
Step	Degree	2.055	0.639	1.888	0.676	0.760	0.453	Non sig
Jump	Degree	2.50	0.875	2.444	0.983	0.181	0.585	Non sig
Achievement	Meter	8.937	0.329	8.904	0.260	0.337	0.738	Non sig

As for the search tools and equipment, a triple jump court, a video camera with a frequency speed of 25 images per second, type (Sony), 1 whistle, and CD-ROMs.

Exploration experiment:

Conducting the experiment is to inform the researchers of the ability and validity of the research tools, team, and tests (Intithar et al.) (3), and it is an important process recommended by specialists in scientific research, as it means “an experiment or test that is an introduction to a larger experiment and test.” The researchers conducted the exploratory experiment in On Sunday, 10/15/2023, at exactly 8:45 am, in the arena for the arena and field games, the triple jump, and this experiment was conducted on (4 students) from outside the research sample, as the experiment included conducting a special test and determining the dimensions and special distances of the cameras and the height of their lenses from the ground to find out The clarity of the imaging and the suitability of the cameras, with the help of the work team to learn about the performance of

the tests and how to implement them, and to know the time that each test and imaging takes.

Tests used in the research: **the triple jump test**

- Purpose of the test: to measure the level of performance and achievement.
- Unit of measurement: (m/cm).
- Necessary tools: A suitable place for jumping, including a pit, a running field, a measuring tape, and a 25-frame-per-second camera.
- Description of the performance: From fast running (a full approach distance), the experimenter begins with the bounding, the first stage of the jump with the leading leg, then she performs the step, which is the second stage of the leap, then the jump, and landing with both legs in the landing pit. Three attempts are given to each experimenter. In addition, rest for 5 minutes between one attempt and another.
- Recording: The measurement is from the ascension board to the closest trace left by the body on this line, and the best attempt is calculated.

The researchers prepared the units, and those units included showing a complete film about the triple jump performance from the regional center, performed by international athletes. The film was shown in slow motion to clearly see and see the effectiveness in front of the students, with an explanation of that skill in general. After that, the researchers, accompanied by the assistant work team, conducted the test after preparing the registration form for the results, and after completing all the preparations for taking the tests, the pre-tests were conducted after distributing the assistant team in private places. This took place on Tuesday 10/17 at 8:45 am in the school's private courtyard. The members of the research sample were photographed from the approach run to the moment of getting up, the bounding, the step, and the jump in the pit through a video camera with a frequency speed of 25 images per second to evaluate the performance of the female students from the experts. Appendix (1) of the athletics instruction manual was fixed vertically on a point located in the middle of the kinetic performance of the triple jumper, which it was 9.50 meters away from the standing board. The camera was from the middle of the performance field and the height of the camera lens from the ground was (1.20 metres) with a film camera. Two attempts were given to each student after the general and private warm-up process for the purpose of preparation. The best attempt for each student was approved and the achievement was recorded. A special evaluation form was also prepared, in which a score was calculated out of (10) for each stage of the artistic performance (approximate run, step, jump), by three experts after the film was shown to them using the special form. The researchers, in addition to maps, prepared the curriculum. Reasoning and seeking the assistance of the subject teacher to implement the contents for a period of (7 weeks) at the rate of two educational units per week, so that the total number of units is (14 units), as the units were started from Thursday 10/19 to Tuesday 11/28 and for two days a week on Sunday and Tuesday of each week. This is according to the students' schedule.

- The duration of the training educational unit was (45 minutes)

- The duration of the preparatory section is 10 minutes for the general warm-up, then 30 minutes for the main section, which includes two sides. The first side is the educational side, which lasts 10 minutes, and the other side is the applied side, which lasts 20 minutes.
- The duration of the final section is 5 minutes. Calming and relaxation exercises. The researcher in the applied educational section gave exercises similar to the practical part, with repetitions ranging from 10 to 4 times.
- Educational exercises according to the mind mapping strategy are given in the main section as follows:
 - Determine a central idea that represents the main theme of the map, which is reaching the highest achievement by jumping, using colors and symbols
 - By distinguishing different branches using different colors and symbols. This contributes to improving discrimination and differentiation between different topics. (The approaching jog until the moment of getting up, the bounding, the step, and the jump)
 - Approximate sprinting is to gain the greatest momentum during the running phase
 - Bounding to reach the farthest distance while reducing the height to maintain a suitable angle in the knee and hip to ensure the effectiveness of the step
 - Jumping to reach the farthest distance while maintaining balance in the air
 - Landing using the greatest distance
 - Avoid excessive complexity. Use few words and simple pictures to illustrate ideas.
 - The learner starts from a specific place, and has a special starting position.
 - Focuses on balance and concentration.
 - The learner uses muscle force to accelerate in the desired direction
 - Use good linking between the stages to maintain stability and prepare for the next step
 - Determine the goal for each of the stages and what we want to achieve, such as after jumping, trying to maintain a suitable angle in the knee and hip to ensure the effectiveness of the step
 - Review and update periodically and update it to reflect any changes in thoughts or

information such as loss of balance (trying to maintain a proper body position during the jump).

- Using creativity in drawing mind maps, which are installed by the learner with the help of the teacher in the form of papers that determine the clarity of the technical stages of the triple jump. You can use pictures and illustrations freely to better express your ideas. The researchers conducted the post-tests under the same conditions in which they conducted the pre-tests and accompanied by the same assistant work team, as the assistant team was

distributed in special places for each test, during Thursday 11/30 at exactly 8.45 am, in the arena for the track and field games, the triple jump, and this was performed. The camera was fixed at the same dimensions and distances that were used in the pre-tests, to record the movement of the students while performing the triple jump. The statistical methods used were the arithmetic mean. Standard deviation. T-law for independent samples. T-law for non-independent samples

Results:

Table .3 shows the results of the differences between the pre- and post-tests for the control group

Measuring unit	Variables	Pre-test		Post-test		Difference between arithmetic mean	Difference between standard deviations	T value calculated	Type Sig
		Mean	Std. Deviations	Mean	Std. Deviations				
Approximate run	Degree	4.555 5	0.704	6.388	0.916	1.833	0.857	9.071	Sig
Bounding	Degree	2.111	0.758	4.666	0.685	2.555	1.149	9.436	Sig
Step	Degree	1.888	0.676	4.00	0.766	2.111	0.963	9.297	Sig
Jump	Degree	2.444	0.983	4.277	0.460	1.833	0.985	7.895	Sig
Achievement	Meter	8.904	0.260	9.045	0.223	0.140	0.097	6.092	Sig

Discussing the results of the differences between the pre- and post-tests for the control group

It appears from Table (3) that there are significant differences between the pre- and post-tests of the control group in the post-test in (approximate running, Bounding, step, jump, and landing) and achievement. The researchers believe that the members of the control group had educational programs for the triple jump subject designed by the subject's school. Relying on the application of practical principles to avoid errors in kinetic performance and the gradual provision of information has given a positive effect in improving the rhythm of the approximate run, especially before rising at the end of the approach phase, which has had a positive impact on the bounding, step, and jump, by giving the learner a clear picture of the technical performance of the triple jump during The theoretical part during presentation, listening, and watching, as well as

organizing the content of educational programs in a scientifically studied manner and creating the educational environment in an effective manner, and this is in addition to what was mentioned by (Diana , aseel) (5) "Also, the precise explanation of the skill, while linking this explanation to models for it, helps in building the movement, i.e. A complete visualization of the athletic movements and tactical behavior to be learned, so that the student can understand the skill and apply it, taking into account that the movement is presented as an integrated unit in addition to dividing it into its logical parts." Its reliance on practice and spreading the feature of repetition, whether within the educational unit or the educational program, has a distinctive effect in building movement, as (Hawraa and Iman) (9) indicate that "one of the most important strategies used in processing information and storing it in long-term memory is the strategy of practice and repetition." It means repeating something several

times in order to keep it in long-term memory. Therefore, the results were positive in the post-test (approximate run, Bounding, step, jump, and

landing) and achievement for members of the control group.

Table .4 shows the results of the differences between the pre- and post-tests for the experimental group

Measuring unit	Variables	Pre-test		Post-test		Difference between arithmetic mean	Difference between standard deviations	T value calculated	Type Sig
		Mean	Std. Deviations	Mean	Std. Deviations				
Approximate run	Degree	4.722	0.826	7.777	0.646	3.055	0.872	14.852	Sig
Bounding	Degree	2.277	0.669	6.055	0.725	3.777	1.06	15.11	Sig
Step	Degree	2.055	0.639	5.444	0.983	3.388	1.092	13.16	Sig
Jump	Degree	1.777	0.427	4.666	0.766	2.888	0.90	13.61	Sig
landing	Degree	2.50	0.875	5.666	0.766	3.166	1.246	10.76	Sig
Achievement	Meter	8.937	0.329	9.370	0.312	0.432	0.062	29.30	Sig

Table .5 shows the results of the differences between the experimental groups and the control group in the post-test

Measuring unit	Variables	Experimental		Control		T value calculated	Level Sig	Type Sig
		Mean	Std. Deviations	Mean	Std. Deviations			
Approximate run	Degree	7.777	0.646	6.388	0.916	5.253	0.000	Sig
Bounding	Degree	6.055	0.725	4.666	0.685	5.902	0.000	Sig
Step	Degree	5.444	0.983	4.00	0.766	4.914	0.000	Sig
Jump	Degree	5.666	0.766	4.277	0.460	6.585	0.000	Sig
Achievement	Meter	9.370	0.312	9.045	0.223	3.592	0.001	Sig

Discussion:

The results of the differences between the experimental groups and the control group in the post-test; it appears from Table (5) that there are significant differences between the experimental groups and the control group in the post-test in (the approach run, the bounding, the step, and the leap) and achievement. The researchers believe that the educational exercises are according to the mind mapping strategy It gives a clear and successive picture and thinking of the correct movement path from the beginning of the skill until the end (the approaching sprint, the bounding, the step, and the jump). It facilitates the process of understanding and then retaining the information, “due to obtaining an understanding and assimilation of the performance requirements

and an understanding of the kinetic performance by knowing the relationship between the parts of the movement and the results.” It reflects the effectiveness of the educational exercises that were prepared and were able to develop the learners’ perception (sensory - kinesthetic) as they performed the movement and then the ability to save it in memory and the ability to retrieve it. Here (Ibtisam et al.) (4) states that “controlling performance can It comes from the sensory perception of the effect of the movement and what is stored in the kinetic memory, which is the memorized movement program that the learner uses to start the movement, and it represents the image of the kinetic action that is to be performed. This image of the kinetic action is the reference that the learners are supposed to feel for the

response that gives a complete idea of the image of the performance. The final analysis of the relationship between the stages and reaching the goal of the skill parts is based on analyzing and organizing the educational content into several purposeful educational steps in a coherent sequence, and arranging the parts of the educational content according to the mind mapping strategy. Here (Adel) emphasizes (6) that “since the movement was complex It can be divided into easy parts, which is a good idea to provide escalating intervention. In general, learning the part from the whole is not as meaningful or easy as connecting the parts to perform the whole. The educational exercises in accordance with the Mind Maps strategy provided the learners with the knowledge to link the relationship of movement to the movement that preceded it (the approaching run to the bounding, the step, and the jump, and the use of Mind Maps, providing a diverse list of experiences that represent a dimension of quality and improvement, and determining the priority of the movement in accordance with the basic principles of the skill, which contributed to making basic decisions. To perform by directing attention to specific parts of the skill or specific parts of the body during kinetic performance, which reflected positively on the results of this group, so it was the mind mapping strategy in learning this skill, (Lamyaa , Zainab) (10) according to the instructions. Prepared by the researchers, it has a direct and distinctive effect and is a basic result in increasing the learners’ ability to perceive movement and the kinetic weight of the complex activity, as all the previous elements constitute different aspects of overcoming performance difficulties, through which performance can be facilitated and simplified, and here is what (Israa and Asmaa) confirms (1) “Instructional exercises that divide skills into small parts in light of their logical sequence in an organized and sequential manner facilitate the perception of movement and accelerate understanding.” Therefore, the results were positive for individuals in the experimental group, and the current study agrees with the study (Amer: Israa) (2) “The educational program used in this study is effective in improving the physical kinetic intelligence and skills applied to female students.” In addition, between the study of (Al-

Nedawy, Al-Mousawi) (8) “to detect and differentiate between learners using the cognitive method (cognitive focus survey) before starting the learning process, to any type of skills because of their impact on the learning process - working to develop kinetic satisfaction among students because of its importance.”

Conclusions:

- The use of educational exercises based on mind maps works to develop the technical performance of the bounding in the triple jump for middle school students.
- The use of educational exercises based on mind maps works to develop the achievement of the triple jump for middle school students.

Recommendations:

- Adopting educational exercises based on mind maps by physical education teachers when teaching the triple jump.
- Generalizing the results to physical education teachers in middle schools
- Using modern educational methods by teachers, and conducting similar research on athletics events.

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Appendix (1)

Experts evaluate

No.	Name and Scientific title	Specialization	Affiliations
1	Prof. Dr. Sarih Abdel Karim Al-Fadhli	Athletics	University of Baghdad
2	Prof. Dr. Haider Faiq Al-Shammaa	Athletics	University of Baghdad
3	Assist Prof. Dr. agham Hatem Khaled	Athletics	University of Baghdad

Appendix (2)

The first educational unit for the triple jump event
Educational objective: Learn the stage of bounding

The educational goal is to instill self-confidence
Day and date: Sunday. Teaching unit time: 45 minutes

Section	Time	Activity or kinetic skill	Repetition	Notes	Equipment and tools used
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Preparatory section	10minute	A general warm-up for the body with a skill-specific warm-up. Skill-specific exercises.		
Main section	30minute			
Educational section	10 minute	- Explaining and clarifying the skill of partridge - Conditions required for correct performance - Doing the show Determine a central idea that represents the main theme of the map, which is reaching the highest achievement by jumping, using colors and symbols	4-6	Keep the stages presented creatively Emphasis on performing exercises according to each movement sequence
applied section	20 minute	The approach sprint is to gain the greatest momentum during the running phase Bounding: Reaching the furthest distance while reducing the height to maintain a suitable angle to obtain knee and hip flexion to obtain the best step.		shows the skill by model
Concluding section	5 minute			

اثر تمارين تعليمية وفق استراتيجية خرائط العقل في الاداء الفني لفعالية الوثبة الثلاثية للطلاب

ديانا غانم يحيى 1 ، اسيل جليل كاطع 2 ، هند وليد كلف 3

3&2&1 جامعة بغداد / كلية التربية البدنية و علوم الرياضة للبنات

تعد تمارين التعلم و استراتيجية خرائط العقل من الأساليب التعليمية المتقدمة التي تركز على تحسين عمليات التعلم وتنظيم المعلومات بشكل فعال و إن قدرة المتعلم على تنفيذ هذه الحركة بكفاءة تلعب دورًا كبيرًا في تحديد نجاحه في الاداء المهاري لفعالية الوثبة الثلاثية ومن خلال عمل الباحثات في مجال التعليم لاحظوا ان هناك تفاوت في الاداء الفني لدى متعلمي هذه الفعالية ما بين الايجابي والسلبي كل ذلك ولد للباحثات مشكلة وقد تكون اهم الاسباب هو تمارين التعلم عن طريق خرائط العقل و استخدمت الباحثات المنهج التجريبي على عينة من (36) طالب في المرحلة الاعدادية مدرسة طارق بن زياد مديرية تربية الرصافة الثانية مقسمين الى مجموعتين تجريبية وضابطة و استخدمت اختبار الوثبة الثلاثية من الإقتراب لقياس مستوى الأداء والإنجاز واجرت الاختبار القبلي ثم قامت باعطاء تمارين تعليمية وفق استراتيجية خرائط العقل للمجموعة التجريبية اما المجموعة الضابطة فكانت تتعلم بأسلوب المدرس واجرت الاختبارات البعيدة بعد مضي 7 اسابيع واستنتجت الباحثات ان استخدام التمارين التعليمية على وفق استراتيجية خرائط العقل تعمل على تطوير الاداء الفني والإنجاز لفعالية الوثبة الثلاثية لطلبة المرحلة الاعدادية و اوصت باستخدام هذه التمارين وتعميمها ، وهذا يحقق احد اهداف التنمية المستدامة للأمم المتحدة في العراق وهو (التعليم الجيد) لاتاحة الفرصة امام الطلبة لكسب مهارات متعددة نتيجة استخدام اساليب مختلفة في التعلم

مستخلص البحث

تمارين تعليمية ، استراتيجية خرائط العقل ، فعالية الوثبة الثلاثية

الكلمات المفتاحية