

## The impact of educational games, based on indicators of certain physical and motor abilities, on students' learning of jumping effectiveness in athletics

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### Abstract

It is considered Education Physical from elements Basic in development a personality The pupils, where Contributes in development Their abilities Physical and kinetics And in this The context is games forces from Sports Important that It depends In a way big on Skills Physical like Jumping, Which Requires coordination high between body And the mind became from Essential Search on Methods New and innovative To teach This is amazing Activities In a way effective,The importance of educational games and the necessity of using and employing them in the learning process are highlighted by their important and effective impact in delivering educational material to learners. They also contribute to making the motor learning process more effective and positive, as the learner becomes largely responsible and a positive participant. It does not negate the teacher's role in the educational process, nor does it replace him; rather, it always works to create a state of integration between what is new in the educational process and the teacher's abilities, needs, desires, and inclinations. The importance of this research lies in identifying the impact of educational games. According to an indicator of some physical and motor abilities in learning effectiveness jump athletics for students, The researcher observed that traditional teaching methods, which rely primarily on direct instruction and routine exercises, may not be effective enough to motivate students to develop the necessary motor skills quickly and engagingly. Therefore, the researcher decided to study how educational games can be used as an effective tool in developing the physical and motor abilities necessary for effective learning.bounceFaster and more effectively, the research problem lies in identifying the extent to which educational games, according to an index of certain physical and motor abilities, affect the effectiveness of learning.Long jumpWith athletics for students, the research problem lies in how educational games can contribute to the development of certain physical and motor skills, and how this affects students' learning of the effectiveness of the sport.bounceIn athleticsThe researcher used a dual methodology that includes descriptive and analytical approaches, where factor analysis was used to identify the most important skills appropriate for thebounce The experimental method in the application phaseThe original population consisted of 200 students aged 10-12 years. Tests were conducted on all physical abilities (speed-strength, sprinting speed, movement speed, and reaction speed) and motor abilities (agility, flexibility, coordination, and balance). A sample of 45 students aged 10-12 years was then selected purposively by randomly assigning 15 students to the experimental group and 15 students to the control group. Ten students were excluded for pilot study purposes. The research sample represents 66.66% of the original population. Additionally, five students were excluded for not attending the tests. The researcher used [the following data/methods/etc.]. Statistical methods Values for percentage, arithmetic mean, standard deviation, median, and coefficientDifferenceRelative importance, and simple correlation coefficient (Person), and the (T-test) concluded Researcher Using educational games to teach the effectiveness of the long jump in athletics has a positive and effective impact on developing students' skills. The experimental group that used educational games excelled in technical performance and achievement in the long jump.

### Introduction

Education is considered a key element in developing the main personality, as it develops their abilities and motor skills. In this context, athletics is one of the sports that rely heavily on skills such as running and jumping, which require high coordination between the body and mind. It has become necessary to search for a new and innovative design to teach this subject effectively. The importance of educational games and the necessity of using and employing them in the learning process are highlighted by their important and effective impact in delivering educational material to learners, as well as their contribution to making the motor learning process more effective and positive. The learner becomes largely responsible and actively involved. This approach does not negate the teacher's role in the educational process, nor does it replace them. Rather, it fosters a blend of new developments in the educational process with the teacher's abilities, needs, desires, and inclinations. The importance of this research lies in identifying the impact of educational games, based on long jump n indicators of certain physical and motor abilities, on students' learning of skills in athletics. The researcher observed that traditional teaching methods, which rely primarily on direct instruction and routine exercises, may not be sufficiently effective in motivating students to develop the necessary motor skills quickly and engagingly. Therefore, the researcher decided to study how educational games can be used as an effective tool for developing the physical and motor abilities needed to learn long jump skills more quickly and effectively. The research problem lies in identifying the extent to which educational games, based on indicators of certain physical and motor abilities, impact students' learning of long jump skills in athletics.

The research problem, therefore, lies in how educational games can contribute to the development of certain physical and motor skills, and how this affects students' learning of long jump skills in athletics. The researcher employed a dual methodology, combining descriptive and analytical approaches. Factor analysis was used to identify the most important skills relevant to running. The experimental method was used in the application phase. The original population consisted of 200 students aged 10-12 years. Tests were conducted on all physical abilities (speed-strength, sprinting speed, movement speed, and reaction speed) and motor skills (agility, flexibility, coordination, and balance). A control group of 45 students, aged 10-12 years, was selected purposively by randomly assigning 15 students to the experimental group and 15 to the control group. Ten students were excluded for pilot study purposes. The research sample represents 66.66% of the original population. Additionally, five students were excluded for not attending the tests. The researcher used various methods... The statistics included the percentage values, arithmetic mean, standard deviation, median, coefficient of variation, relative importance, simple correlation coefficient (Person), and (T-test). The researcher concluded that employing educational games in learning the running effectiveness in athletics has a positive and effective impact on developing the level of students and the superiority of the experimental group in technical performance and achievement in running that used educational games.

Physical education is considered one of the essential elements in developing the personality of students, as it contributes to developing their physical and motor abilities. In this context, athletics is one of the important sports that depend greatly on physical skills such as running and jumping, which require high coordination between the body and mind. It has become necessary to search for new and innovative methods to teach these activities effectively.

Educational games are one of these innovative methods that may help improve students' physical and motor skills, which positively impacts their learning of athletics. Educational games aim to integrate entertainment with education, which enhances students' motivation and helps them acquire motor skills in a more interactive and enjoyable way. The importance of educational games and the necessity of using and employing them in the learning process are highlighted by their important and effective impact in delivering educational material to learners. They also contribute to making the motor learning process more effective and positive, as the learner becomes responsible and a positive participant to a great extent, after being a recipient and imitator. It does not negate the teacher's role in the educational process, nor does it replace him. Rather, it always works to create a state of integration between what is new in the educational process and the teacher's abilities,

needs, desires, and inclinations. It is a tool used by the teacher, supported by available resources, to clarify and transfer theoretical information and practical skills to the learner in order to reach the desired goal with the least effort and in the shortest time, as it is one of the means of direct communication that help learners acquire knowledge, skills, and attitudes. The performance of different sports activities is linked to the requirements and capabilities specific to those activities, as the contribution of these capabilities varies according to the type of sports activity practiced and the required motor task to be performed.

Physical abilities are inherited and depend on an individual's muscular system and the functioning of their internal organs, while motor skills are acquired and depend on an individual's motor orientation. Motor skills are subject to an individual's ability to control and master motor performance. Improving student performance in the long jump event, by focusing on how educational games influence development Physical and motor skills: The importance of this research lies in identifying the impact of educational games. According to an indicator of some physical and motor abilities in effective learning the long jump Athletics for students.

**Research problem:**

Many notice from teachers and the coaches in Education Physical that Ways teaching traditional may be not Enough To stimulate pupils on to improve Their skills Kinetic Basic in Sports like jump The tall one, He is what leads to slow in acquisition Skills and increase Feeling Bored I have The students, as the researcher observed that Ways teaching traditional that It depends In a way essential on Guidance Live And exercises routine may no be Effective In what In it Sufficiency To stimulate pupils on development Skills Kinetic Necessary In a way fast Interesting, therefore the researcher decided in study How to Use Games Educational As a tool Effective in development Abilities Physical and motor skills Necessary To learn The effectiveness of running faster and more Effectiveness; the research problem lies in identifying the extent to which educational games, according to an indicator of certain physical and motor abilities, affect the learning of long jump effectiveness in athletics for students. here It is a problem Search in how maybe for games Educational that Contributes in development some Abilities Physical And kinetics, and how Affects that on to learn pupils for effectiveness Running in games Forces.

**Research objectives.**

- 1- Determining the physical and motor abilities for long jump events in athletics for students.
- 2- Determining the physical and motor abilities tests for the effectiveness of the long jump in athletics for students.
- 3- Developing an indicator for some physical and motor abilities for long-distance athletics performance among students.
- 4- Identifying the impact of educational games, according to an indicator of some physical and motor abilities, on learning the effectiveness of the long jump in athletics for students.

**Assumptions Search:**

- 1- There are differences Statistical significance in the artistic performance of the event the Long jump Between the experimental group and the control group and In favor of the experimental group.
- 2- The found Far and Q Dhat Statistically significant improvement in physical performance between the experimental and control groups after using educational games and In favor of the experimental group.

**Research areas:**

**human field:** students of the first stage Fifth Grade Elementary School At the age of (10-12 years) In the schools of Dhi Qar Governorate.

**Field Time:** From 1/11/2024 to 1/5/2026.

**Field Spatial:** Primary schoolyards in Dhi Qar Governorate.

**Methodology Research and its field procedures:**

The researcher used a dual methodology, including descriptive-analytical (where factor analysis was used to identify the most important abilities suitable for the long jump) and experimental methodology in the application phase. He knew him (facet) that "system Test and comparison between Two sets or more Enter On it variable Independent So that Used researcher in this order Two sets or more Equivalent With their properties from Aspects all". So U Sed researcher Curriculum experimental (experimental) + Officer.

**community Research and sample:**

The original population consisted of (200) pupils aged (10-12 years) who underwent testing. For students per Physical abilities (Strength characterized by speed (transitional speed, movement speed, reaction speed) and motor abilities (agility, flexibility, coordination, balance) were taken into account. The original community (45 students) At the age of (10-12 years), this sample was chosen intentionally by taking (15 students) for the experimental group and (15 students) for the control group by random method (drawing lots). (10) students were excluded for the purposes of the pilot study, as the research sample represents a percentage of (66.66%) of the original population, and (5 students) were also excluded for not attending the tests. In order to ensure the accuracy and validity of the results, the researcher performed homogenization. Among the members of the research population, according to the variables (height - weight - chronological age), the coefficient of variation was calculated after the arithmetic means and standard deviations were extracted, and then the coefficient of variation was calculated for each variable, as shown in the table (1)

Table (1) The homogeneity of the research sample in terms of age, height, and weight is shown using the coefficient Difference Which appears Values less than 30%

Coefficient of variation	standard deviation	arithmetic mean	unit of measurement	Measurements and variables	No
7.07%	0.802	11.33	year	the age	1
11.99%	3.61	30.10	kg	The block	2
3.49%	5.046	144.33	poison	height	3

After confirming the homogeneity of each group, the equivalence of the two groups (control and experimental) was verified using (t) As shown in Table (2):

Table (2) It shows the values of the arithmetic means, standard deviations, and the value of (T Results of the values (achievement and technical performance of the long jump) for the pre-tests of the control and experimental groups

Significance Statistics	value (sig) Level of significance	value (t) Calculated	Experimental group		Control group		unit of measurement	Statistical processing Variables	N
			±A	S	±A	S			
not moral	0.950	0.063	0.513	1.8387	0.582	1.8260	meter	Long jump (achievement)	1
not moral	0.650	0.459	0.774	1,800	0.816	1.6667	degree	Long jump (technical performance)	2

The table above shows that the difference between the means of the two groups in the pre-tests is not statistically significant at the significance level. <(0.05) which indicates that the two groups were equal in the pre-tests.

**Methods, tools, and equipment used in the research:**

**Methods of gathering information:**

The researcher used the following methods to collect information in the research:

- Arabic and foreign sources and references.
- Personal interviews.
- The international electronic information network (the Internet).
- Physical and motor skills form.
- Physical and motor skills test form.
- A form for evaluating technical and running performance.

**Equipment and tools used in the research:**

- Whistle number (2).
- Metric measuring tape (5m).
- Three (3) electronic timers.
- Personal mobile device (laptop calculator type) DELL(1) Chinese origin.
- One (1) Chinese-made medical scale.
- Two (2) hoops.
- Two large signs.
- (8) small-sized signs.
- A stick with a length of (2m) number (3).
- Ground floor ladder, number (1).
- Medium-sized barriers, number (4).
- Two medium-sized balls.
- Small balls, number (6).
- Number of signs (10).
- (8) plastic plates.
- camera(Canon)) Japanese number (1).

**Determining physical and motor abilities:**

To identify the most important physical and motor skills, the researcher consulted scientific sources to identify some of the physical and motor skills needed by students. A questionnaire was also designed. Tests were conducted for the students to assess all physical abilities (speed-strength, sprinting speed, movement speed, and reaction speed) and motor abilities (agility, flexibility, coordination, and balance). A range of these abilities was presented to a panel of eleven experts to evaluate them and confirm their suitability for further research. The experts assigned scores to each selected physical and motor ability on a scale of 1 to 5, resulting in an acceptance rate of 54.54%. The forms were collected and processed, and Table (3) shows the agreement of experts and specialists regarding the determination of physical and motor abilities according to their relative importance.:

Table (3) shows the determination of physical and motor abilities

Acceptance rate	ability The candidate	Percentage Important Relativity	Degree College	1	2	3	4	5	Physical abilities and kinetics	T
				repetition	repetition	repetition	repetition	repetition		
54.54	√	96.364	53	0	0	1	0	10	Power characterized by speed	1
	×	52.727	29	3	3	2	1	2	Ultimate power	2
	×	49.091	27	6	0	1	2	2	Endurance	3
	×	52.727	29	3	3	2	1	2	Endurance	4
	√	92.727	51	0	0	1	2	8	Kinetic speed	2
	√	94.545	52	0	0	1	1	9	Transitional speed	3
	√	90.909	50	0	0	2	1	8	Motor reaction speed	4
	√	96.364	53	0	0	0	2	9	fitness	5
	√	92.727	51	0	0	1	2	8	flexibility	6
	√	96.364	53	0	0	0	2	9	compatibility	7
√	92.727	51	0	0	1	2	8	Balance	8	

Factor analysis was then used. As shown in Table (4):

Table (4) The interpretation of variances for factors after rotation is shown.

the components	Primary self-values			Extracting the sum of squares Downloads			Squaring rotations of loads		
	the total%	from Contrast	Cumulative percentage	the total%	from Contrast	Cumulative%	the total%	from Contrast	Contrast%
1	1.430	17,870	17,870	1.430	17,870	17,870	1.271	15.883	15.883
2	1.108	13,849	31.719	1.108	13,849	31.719	1.180	14,754	30.637
3	1.053	13.167	44.886	1.053	13.167	44.886	1.140	14,248	44.886
4	980	12,247	57.133						
5	925	11,563	68.696						
6	900	11.255	79.951						
7	809	10.110	90.061						
8	795	9.939	100,000						

Extraction method: Analysis of the basic components

Table of underlying roots of factors: Where the factor that Its value Greater than one is acceptable, therefore there is(3) Factors that were accepted

Table (5) The saturation of elements on factors after rotation is shown

The third factor	The second factor	The factorfirst	Abilities	N
094	752	151	power distinctive Quickly	1
-.091	-396	432	speed transitional	2
142	-.095	533	speed Kinetics	3
-.413	-.031	767	speed to reply the verb	4
026	-.100	885.-	fitness	5
638	-.016	-.469	flexibility	6
-.098	660	-.129	compatibility	7
800	035	158	Balance	8

The table above identifies the physical and motor abilities with high saturation of the three factors.

**Research variable tests: Physical and motor ability tests**

**Reaction speed test (motor reaction speed):**

Test name: Nelson Test of Transitional Motor Response

**The purpose of the test:** Measuring the ability to respond and move quickly and accurately according to the chosen stimulus.

**Tools:** A flat, unobstructed open space area with a length of (20m) and a width of (2m) + a stopwatch + a measuring tape.

**procedures:** Planning the test area with three lines, the distance between each line being (6.40m) and the length of the line being (1m).

**Performance specifications:**

- The lab technician stands at one end of the center line facing the referee, who stands at the other end of the line. As shown in Figure (1).
  - The test subject assumes a ready position with the midline between the feet and with the body slightly bent forward.
  - The referee holds the stopwatch in one hand and raises it upwards, then quickly moves his arm either to the left or the right while simultaneously turning on the watch.
  - The laboratory responds No Start and try to move as fast as possible in the direction specified to reach the side line which is 6.40m away from the center line.
  - When the tester cuts the correct side, the referee stops the clock.
  - If the tester starts running in the wrong direction, the referee continues to run the clock until the tester changes direction and reaches the correct side line.
  - The lab gives ten consecutive attempts, with twenty seconds between each attempt, and five attempts on each side.
  - The attempts on each side are chosen in a sequential, random manner. To achieve this, ten pieces of cardboard (cards) of uniform size and color are prepared, and the word "left" is written on five of them, and the word "right" is written on the other five. Turn it right, then turn it over well, place it in a bag or box, then pull it out without looking at it.
- Test instructions:**
- Each laboratory is given a number of off-measurement trials under the same basic conditions in order to familiarize itself with the test procedures.
  - The referee must practice the starting signal, so that he can give this signal with the arm and operate the clock at the same time.
  - Before conducting the test, the judge randomly draws the ten previous cards and records the order in which they were drawn on a special card. This card is held in one hand to guide the judge in the sequence of signal directions and to record the time for each tester individually. This procedure is used to prevent the tester from predicting the direction from one attempt to the next.
  - The tester should not know that they are required to perform ten trials equally distributed in both directions, but rather that the number of trials in one direction may be greater. In short, the order of the trials is done randomly and varies from one laboratory to another.
  - The test should begin by giving the judge the following signal: Ready/Start. In all attempts, the time interval between the words (Ready/Start) should be between (0.5-2 seconds).

**Registration:**

- The time for each attempt is calculated to be approximately one second.
- The lab score is: the average of ten attempts.

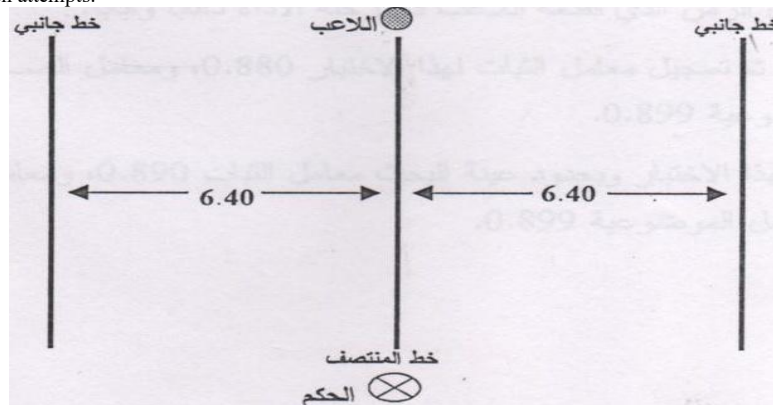


Figure (1) Nelson's test of motor response demonstrates

**Kinetic balance test:**

**Test name:** Navigate over the markers.

**The purpose of the test:** Measuring balance during and after movement.

**Tools used:** Stopwatch, measuring tape, 11 sign.

**Performance specifications:** The tester stands on the starting line with his right foot, then stands from the starting position on the mark. 1 With the instep of his left foot (note that the mark is covered by the foot), he tries to remain in this position, then jumps to the mark. (2) He should stand on the ball of his right foot and so on until he reaches the last mark, using the same method in each jump.

**Registration method:** The laboratory records (10 Points are awarded for each jump and steadiness attempt, as shown in Figure (2)).

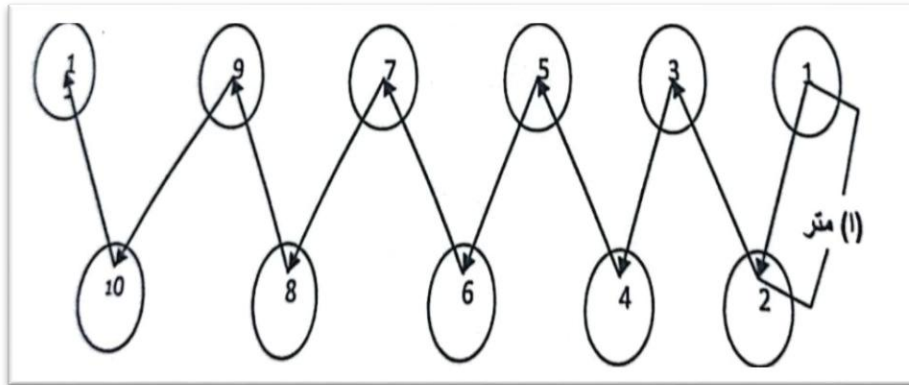


Figure (2) illustrates the test of moving over marks to measure motor balance

**-The experiment exploratory:**

WageTresearcherThe experimentexploratoryOn the date9/2/Sunday, 2025With the support team, a sample of the research population was selected, amounting to (10) students. If They were subsequently excluded from the experiment. Main.

**Pre-tests for the research sample:**

I conductedTestsTribal affiliation of the research sample dated 18-19/2/2019tenthA.MFor Tuesday and WednesdayThe researcher applied allTestsPhysical And the kinetics on both groups (The officerandempiricismWhere it was appliedT TestsPhysical (and strength characterized by speed)and kinetic speed Transitional speed and reaction speed) and Motor tests (agility and flexibility) and compatibility And balance) and the results were recorded according to conditionsTestsThe specifications are in forms prepared by the researcher, who took into account the circumstances related to the tests in terms of time, place, tools, and methods.AmtoThe method of implementation and the supporting team, in order to provide it inTestsThe dimension that will be applied later.

**Main experiment:**

The researcher conducted the main experiment from 2/20/2025 to 4/6/2025 on the experimental group for (6 weeks) at a rate of two units per week, which were divided into three sections (a preparatory section with a time of (15 minutes), a main section with a time of (25 minutes), and a final section with a time of (5 minutes)).

**-Educational games for physical and motor skills:**

**- Reaction speed:**

- 1- We place medium-sized targets of different colors. The distance between them is not great. The players run in succession over the targets after hearing the starting signal. The targets move according to their colors when the command is given for each color. Then they jump forward over the small-sized targets and run forward as shown in the picture (1).



Figure (1) illustrates movement around signs according to color.

- 2- We place two opposite markers on two sets and place colored plates in front of the markers. When the instruction is given, the students of each set touch the colored plates on the instruction, and the set that finishes faster continues running to the end as shown in picture (2).



Figure (2) illustrates touching the plates according to color upon instruction.

**Balance:**

- 1- Six hoops are placed on the ground, and the person jumps with one foot once and with both feet with the second hoop again until he finishes and runs forward as shown in picture (3).



Figure (3) illustrates jumping over hoops

- 2- Two large pillars are placed, and a stick is placed in the middle of the pillars. The player jumps forwards and backwards several times as shown in picture (4).



Figure (4) shows jumping around the target

**-The scientific basis of testing:**

To determine the scientific weight of the research tests, find researcher's The scientific foundations (truth, reliability, and objectivity) are as follows:

**Honesty:**

Honesty is an important quality that a good test should possess, and a test that does not have a good level of honesty is not He can perform his job, and honesty is not an absolute quality, meaning that it does not It can be said that this test is true or false in absolute terms, but rather its truth rate is determined by its degree of truth., Validity means that the test measures what It was designed to measure the abilities of those being tested, and it has been used researcher's Is the content credible or the substance?By identifying all the test components in a questionnaire form and presenting them to (experts and experts)Special(China) and through them the validity of the test was obtained,Test validity means that a valid test measures what it was designed to measure.To be sureBased on the accuracy of the tests and the strength demonstrated by the resultsSeparationmoral

**Stability:**

It isTestIt is consistent if we obtain results from it.Closely related toReapplying it to the same individuals under the same conditions in order to extract consistencyUserresearcher'sMethod (re-)TestA reliability coefficient was applied.TestOn a sampleExploratory experimentThe number of which reached (10 studentsThe first application of the tests was carried out on the date18/ 2/ 2025 TuesdayAnd after the passage of (6days returned researcher's TestsA second time, on the same sample, and under the same conditions in which it was conducted.TestsinTestFirst, as much as possible, in order to obtain accurate results, and then find researcher's coefficientLinkCompare the results of the two tests using a coefficientLinkThe simple Pearson, and this confirms thatTestsIt has a high degree of stability and the table (6This explains it.

**Objectivity:**

Objectivity describes an individual's abilities as they actually exist, not as we wish them to be. Objectivity can be achieved through the agreement of a group of experts on the objectivity of of...TestsResearch, by giving a reportYMy topic is far from subjective. And bias, Objectivity was achieved by recording the resultsTestsIn calculating stability using two assessors and procedurecorrelationBetween their scores, a relationship was found. Correlation High. As shown in the table (6).

Table (6) It shows Reliability and objectivity of the tests under study

sig	Objectivity factor	sig	stability coefficient	Statistical processing Variables	No
0.000	0.91	0.000	0.89	Long jump (achievement)	1
0.000	0.92	0.000	0.89	Long jump (technical performance)	2

TestsDimensional:

I conductedTestsPost-hoc analysis of the research sample in history8-9/4/2025 Tuesday and Wednesday, 10 AMinPrimary schools in Dhi Qar Governorate, afterFinishFrom the duration of application (educational gamesHe was keen researcher'sTo provide conditionsTestsTribalism itself inTestsPostural.

**Statistical methods:**

It was completeduseSocial Statistical Portfolio System (Using SPSS version (V24), (Statistical Package for the Social Sciences), the values of percentage, arithmetic mean, standard deviation, median, and coefficient were calculated.DifferenceRelative importance, and simple correlation coefficient(Person), and the (T-test).

**Presentation, analysis, and discussion results Differences between Tests Tribalism and the aftermath Control group in variables Search:**  
 Table (7) It shows the values of the arithmetic means, standard deviations, and the value of (TResults of achievement values and technical performance in the long jump for the pre- and post-tests of the control group

Statistic al significance	value ((sig) level of significance	value (t) Calculated	F A	F S	Post-test		Pre-test		unit of measurement	Statistical processing Variables	N
					±A	S	±A	S			
moral	0.000	12.606	0.277	0.902	0.543	2.7287	0.582	1.8260	meter	jumptheLong (achievement)	1
moral	0.000	6.094	1.355	2.133	0.774	3,800	0.816	1.6667	degree	Long jump (technical performance)	2

It is observed from the table (7) which shows the results of the differences between the pre-tests and post-tests for the groupThe officerIn search variables **AIjumptheLong (achievement)**The arithmetic mean in the pre-test (1.8260(with a standard deviation)0.582The arithmetic mean in the post-test became (2.7287(with a standard deviation)0.543The average difference between the two tests was(0.277)With a standard deviation of the difference (0.277)The calculated value reachedTest(t) For related samples(12.606This is a function compared to the value of(Sig) adult (0.000) at the significance level of (0.05)toBeing smaller than (0.05), and this indicates the presence of a differenceandQSignificantstatisticalAmong the resultsThe two testsBefore and afterandIn favor ofTestThe postBut in**Long jump (technical performance)**)The arithmetic mean in the pre-test was (1.6667(with standard deviation)2.044The arithmetic mean in the post-test became (3,800(with standard deviation)3,800The average difference between the two tests was (2.133With a standard deviation of the difference1.355)The calculated value reachedTest(t)For related samples(6.094)It is a function compared to the value(Sig)adult (0.000)Because it is smaller than (0.05This indicates that there are statistically significant differences between the results of the pre-test and post-test, in favor of the post-test..

**Discussion of the results:** From the table review (7Regarding the results of the pre- and post-testsLong jump (achievement and technical performance) For the total. The search officer Through the presentation Test results are shown There are significant differences in the tests.Pre-test and post-test, and in favor of the post-tests for the control groupThis indicates that the differences between the pre-test and post-test for the control group were slightly significant, favoring the post-tests. The results of these tests for members of the control group who were not exposed toeducational gamesPrepared by the researcherRather, it was carried outGamesPrepared for them byTheir teacherThis relied on the vocabulary of his own methodology, which was reflected in the result of the statistical analysis of the values of (The calculated t-value (T) for all research variables is related to the pre-test and post-test scores of the control group. Therefore, to determine the significance of these differences between the experimental and control groups in the post-tests, the t-value was calculated for both groups. This will reveal where the significance lies and which group benefits. The t-value was calculated using a matched sample for all research variables.,The reason why such differences did not appear for the control group compared to the experimental group in all tests is thatTAtribution of the researcherthatinLack of vocabularyAjFollowerBy the teacherOn the excitementssuspense Educational games in engaging ways for studentsAnd relying on traditional methods in implementationGames belonging to their teacherRequired to be carried out by members of the group The officer,And the results of these tests for members of the control group, whose members were not exposed tothevariables that were adoptedresearcherFor the members of the experimental group.

**-Presenting, discussing, and analyzing the results of the differences between the pre- and post-tests for the experimental group in the research variables:**

Table (8) It shows the values of the arithmetic means, standard deviations, and the value of (TResults of achievement values and technical performance in the long jump for the pre- and post-tests of the experimental group

Significan ceStatistic s	value (sig)Lev el of significance	value (t)Calculat ed	F A	F S	Post-test		Pre-test		unit of measurement	Statistical processing Variables	N
					±ε	S	±ε	S			
moral	0.000	10.799	0.805	2.245	0.750	4.084	0.513	1.8387	meter	Long jump (achievement)	1
moral	0.000	13.208	1.055	3,600	0.632	5,400	0.774	1,800	degree	Long jump (technical performance)	2

It is observed from the table (8) which shows the results of the differences between the pre-tests and post-tests for the groupempiricismIn search variables We note that **jumptheLong (achievement)**The arithmetic mean in the pre-test (1.8387(with a standard deviation)0.513The arithmetic mean in the post-test became (4.084(with a standard deviation)0.750)The average difference between the two tests was(2.245)With a standard deviation of the difference (0.805)The calculated value reachedTest(t) For related samples(10.799This is a function compared to the value of(Sig) adult (0.000) at the significance level of (0.05)toBeing smaller than (0.05), and this indicates the presence of a differenceandQSignificantstatisticalAmong the resultsThe two testsBefore and afterandIn favor ofTestThe post, But in**Long jump (technical performance)**)The arithmetic mean in the pre-test was (1,800(with a standard deviation)0.774The arithmetic mean in the post-test became (5,400(with standard deviation)0.632The average difference between the two tests was (3,600And with a standard deviation of the difference (1.055)The calculated value reachedTest(t)For related samples(13.208)It is a function compared to the value(Sig)adult (0.000)Because it is

smaller than (0.05) This indicates that there are statistically significant differences between the results of the pre-test and post-test, in favor of the post-test.

**Discussion of the results:**

From the table review (8) Regarding the results of the pre- and post-tests Long jump (achievement and technical performance) For the total experimental research and Attribute researcher The appearance of these results to Educational games prepared by the researcher And its suitability to the level of Drissi For the target sample.

**-Present, discuss, and analyze the results of the differences between the post-tests of the two experimental and control groups:**

Table (9) It shows the values of the arithmetic means, standard deviations, and the value of (T) Results of achievement values and technical performance in the long jump for the two post-tests for the control and experimental groups.

Significance Statistics	value (sig) Level of significance	value (t) Calculated	Experimental group		Control group		unit of measurement	Statistical processing Variables	N
			±A	S	±A	S			
moral	0.000	5.666	0.750	4.084	0.543	2.7287	meter	Long jump (achievement)	1
moral	0.000	6.197	0.632	5,400	0.774	3,800	degree	Long jump (technical performance)	2

It is observed from the table (9) which shows the results of the differences between the post-tests of the group The control group shows that the arithmetic mean of the control group in **jump the Long (achievement)** (reached) **2.7287** (with a standard deviation) **0.543** As for the experimental group, its arithmetic mean reached (**4.084** (with a standard deviation) **0.750**) The calculated value for the t-test for uncorrelated samples was (**5.666**) and level of significance (0.05) This is statistically significant compared to the value (Sig) The adult (000.) is younger than (0.05) This means that there is a statistically significant difference between the results of the two research groups, in favor of the experimental group. But in **Long jump (technical performance) (for the control group)** The arithmetic mean reached (**3,800** (with a standard deviation) **0.774**) As for the experimental group, its arithmetic mean reached (**5,400** (with a standard deviation) **0.632**) The calculated value for the t-test for uncorrelated samples was (**6.197**) and level of significance (0.05) This is statistically significant compared to the value (Sig) The adult (000.) is younger than (0.05) This means that there is a statistically significant difference between the results of the two research groups, in favor of the experimental group.

**Discussion of the results:**

From the presentation of Table (9) For the post-tests of the experimental and control groups, the value was (t) Significant and in favor of the experimental group across all research variables There are statistically significant differences between the post-tests of the two groups in the research variables, favoring the experimental group. The researcher attributes these differences to the fact that the members of this group were exposed to the items of the independent variable, which included educational games. The researcher prepared the plan, which was implemented by the main experimental group throughout the duration of the educational games. The games were conducted under the researcher's supervision and with the direct involvement of the teacher, who assisted the researcher in carrying out the experiment and the related research tests. This was achieved through sound planning of all organizational procedures for the support staff and the group, assigning each their role in implementing the experiment and ensuring the group's direct commitment to its application. The participants were asked to perform educational games during the week. The researcher obtained post-test results from this group that accurately reflect all the researcher's and the sample's work. These objective post-test results, based on the statistical table compiled by the researcher, were used to compare with the control group, whose role was to control the variables. This comparison aimed to support the researcher's findings and the achievement of the study's objectives. Research.

**Conclusions**

- 1- Using educational games to learn the jumping and running skills in athletics has a positive and effective impact on developing the level of students.
- 2- The experimental group excelled in technical performance and achievement in running and long jump when they used educational games.
- 3- Educational games contribute significantly to the development of some physical abilities (such as speed-strength and reaction speed) and motor abilities (such as agility, flexibility, and balance), in addition to enhancing basic motor skills such as motor coordination and neuro-motor coordination.

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