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The effect of using simulation (electronic media) on learning the skill of the front hand jump on the artistic gymnastics jumping table for second-stage female students

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Abstract

The importance of the research was to identify the effect of using simulation (electronic media) in learning some of the researched skills. As for the research problem, the researchers noticed difficulty in some skills (the front hands jump on the mat of floor movements), because they require physical effort on the part of the female students, as well as taking a long time from the educational process because they are skills that require muscular strength, agility and flexibility among the female students. While the research aimed to identify the effect of using simulation (electronic media) on learning some of the researched skills. The researcher concluded that the use of electronic simulation media technology has an effective effect in developing and improving the level of learning some skills on gymnastics equipment for female students. Thus, it recommended adopting the use of electronic learning technology to improve some basic skills on gymnastics equipment for female students.

Keywords: Electronic media, front hand jump, artistic gymnastics

Introduction

In recent years, the sports field has witnessed remarkable developments due to the development of technology through the capabilities offered by this important technology that are difficult for humans to achieve with the same accuracy and speed that technology provides. However, all of these developments that astonished us yesterday may lose their luster in the face of what is expected from the entry of technology into the world. The sports field, which has really begun to emerge, promising unprecedented transformations in this field.

Hence, the learner cannot ignore the impact of scientific and technical developments, especially those related to information technology, in all aspects of life.

Learning technology has been used with electronic media in many professions and specializations as learning is a hypothetical process that is not immediately shown in the picture but is deduced from its outcomes. As a result, using it and being proficient with its many programmes in many sectors has become essential. Education is no exception. Our sophisticated educational system keeps up with global technological advancements. Information technology and electronic simulation have been incorporated into updates and enhancements to the system to make it better, more advanced, and more trend-compliant. In order to fully enhance the teaching process, Al-Baha made the decision to use electronic simulation media to elucidate and clarify the fundamental ideas of the talent mastered in artistic gymnastics.

Research Problem

The researcher saw challenges with some abilities since she teaches at the College of Physical Education and Sports Sciences (front hands jump on the mat of floor movements), because they require physical effort by the students, as well as taking a long time from the educational process because they are skills that require muscular strength, agility, and flexibility. For female students. Despite the practical method of teaching these skills, they face some

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difficulties in teaching this skill as well as performing this researched skill due to its reliance on practical application, which is why the researcher entered into this study.

Research objective

1. Identify the effect of using simulation (electronic media) on learning some of the researched skills.
2. Determining the group's preference-control or experimental-for the skill under investigation.

Research hypotheses

1. There are notable variations in how well female students acquire the skill being studied between the control and experimental groups, as well as between the pre- and post-tests.

Research fields

Human field: Female students of the second stage - University of Karbala - College of Physical Education.

Time field: From 18/1/2023 to 25/5/2023.

Spatial field: University of Karbala - College of Physical Education and Sports Sciences - Closed Hall.

Research methodology and field procedures

Research methodology

The researcher used the experimental method using equal

groups to determine the nature of the problem to be solved.

The research community and its sample

The research community was represented by the female students of the second stage (morning study) of the College of Physical Education and Sports Sciences - University of Karbala for the academic year 2023, who numbered (42) students. After excluding (10) female students from the research population in order to achieve the condition of homogeneity in the sample of learners, the number of members of the sample became (32) students. The sample was then divided into two equal groups at random, (16) female students as a control group and (16) female students as an experimental group. The control group takes educational lessons using the followed teaching method, while the experimental group takes educational methods using simulation (electronic media). The groups are equal to the number of educational units allocated to learning (the skill under research in artistic gymnastics for female students). The sample was homogeneous and the two research groups were equal, which affects the accuracy of the research results and the differences in influence are attributed only to the independent variable, which is the use of electronic media simulations. It must first verify the homogeneity and equality.

Table 1: The research sample included variables similar to the skills under research

Variables	Mean	Std. Deviation	Standard error	Skew ness
Forward Roll Drill on the floor mat	2.86	0.74	0.19	0.22

The means, standard deviations, standard error, and skewness coefficient for each variable are shown in Table (1). The findings demonstrated that the homogeneity of the study

sample in these variables is indicated by the skewness coefficient values for the aforementioned variables being smaller than (1).

Table 2: demonstrates that, at a significance level of (0.05) and degree of freedom, the (t) values computed for the pre-tests of technical performance for the skill under investigation are less than the tabulated (t) value of (2.04)

Variables	Experimental group		Control group		t value Calculated	tabular t value	Sig type
	Mean	Std. Deviation	Mean	Std. Deviation			
Front hands jump on a vault table machine	2.81	0.83	2.44	0.73	0.47	2.04	Non Sig

Devices and tools used in the research

Tools and devices used

1. The researcher used the following devices and tools:
2. Laptop.
3. Ground movement's rug.
4. Data Show.
5. Wooden boxes.
6. Jumping table device for female students.

Means of collecting information

1. Observation and experimentation.
2. Testing and measurement.
3. The questionnaire.

Field research procedures

Determined the skill under research

The skill under research was determined according to the vocabulary of the artistic gymnastics curriculum for the second stage in the faculties of physical education and sports sciences, and in a way that is consistent with the requirements of the research topic and the educational curriculum prepared for it.

The exploratory experience

The exploratory experiment was conducted on 28/2/2023 on a

sample of the research community, numbering (8) female students who did not participate in the main experiment, for several objectives, including:

1. Organizing work and timing the procedures of the educational unit in all its departments.
2. Identifying the obstacles that may appear when implementing tests and the educational curriculum and working to find solutions to them.
3. Setting the timings and frequencies necessary to implement the curriculum.

Pre-test

Pre-tests were conducted for the control and experimental groups on (9/3/2023) after completing two introductory educational units (**), where a first educational unit was given for the skill of the front hand jump on the jumping table device, on 3/9/2023, which included an explanation of the skill with the help of some pictures and drawings. This skill was then presented on a program on the laptop, then the research sample applied it, and after the end of the educational unit, pre-tests were conducted for the sample to evaluate the technical performance as well as the accuracy of the skill itself.

Approved forms were used to evaluate the skill (*), and each skill was given (10) grades, and this grade was given by a

committee consisting of three evaluators. The best score is then selected for each evaluator, and by extracting the arithmetic mean of the three best scores, the final score for each student is calculated.

Educational curriculum

Before starting to implement the educational curriculum, it is necessary to clarify the relationship between the methods that aim to achieve a specific set of goals and benefit from the use of electronic simulation in learning some skills in artistic gymnastics for female students.

One of the goals of using electronic media is to develop the relationship between the teacher and the student, especially the student's development and increase his individual independence. We note that the goal is regularity, consistency, accuracy, responsiveness, and control. In the preparatory section of the lesson (warm-up) and focused instruction, we resort to using electronic media.

In order to begin the research procedures, the researcher organized the work of the control and experimental research groups:

The research sample, which numbered (32) female students, was divided by lottery into two control and experimental groups, each group containing (16) female students.

1. The control group: Practiced the learning exercises used according to the educational curriculum followed for the second stage of the Faculties of Physical Education and Sports Sciences, University of Kerbala, over a period of

(12) educational units.

2. The experimental group: The experimental group was divided into two equal secondary groups, that is, by (8) female students for the purpose of organizing the educational curriculum. The female students of the experimental group learned a new skill, which is the front hand jump on the jumping table device, practicing it, and developing and using the electronic device (laptop), as well as Data Show.

The educational curriculum included (12) educational units, with each educational unit lasting (90) minutes, at a rate of two units per week, to change the learning environments, reduce learning time, and arouse the students' enthusiasm.

Post-tests

After completing the application and implementation of the educational units for the control and experimental groups, the post-test was conducted to evaluate the technical performance of the subject's skill on Tuesday 27/4/2023.

Statistical methods

The researcher used the SPSS statistical package.

The results are presented, analyzed and discussed Presenting, analyzing and discussing the results to the research groups

Table 3: Displaying the results of the pre- and post-measurement teams for members of the control group for the investigated skill

Variables	Sample	Pre- test			Post-test			Means difference	t value Calculated	Sig type
		Mean	Std. Deviation	Standard error	Mean	Std. Deviation	Standard error			
Front hands jump on a vault table machine	15	3.26	0.70	0.18	5.13	0.91	0.23	1.87	9.72	Sig

Table 4: Displaying the results of the pre- and post-test difference for members of the experimental group. Showing the pre- and post-test difference for the experimental group (electronic simulation)

Variables	Sample	Pre- test			Post-test			Means difference	t value Calculated	Sig type
		Mean	Std. Deviation	Standard error	Mean	Std. Deviation	Standard error			
Front hands jump on a vault table machine	15	3.26	0.79	0.20	7.13	0.74	0.19	3.87	42.56	Sig

The tabular value of the (T) test at a significance level of (05.0) and a degree of freedom (14) equals (14.2).

Results of the post-test teams for the experimental and control groups (electronic simulation) are presented

In order to achieve the goal of the study, which includes using electronic simulation environments and the curriculum approved by the teacher to improve the level of performance

of some skills on gymnastics equipment for female students, the researcher sought to extract the values of the arithmetic mean, standard deviation, and standard error for the data of members of the two research groups (experimental and control) in the post-measurement, and Table (5) shows that.

Table 5: Show the Variables, group, sample, mean, std. Deviation, standard error, less value and high value

Variables	Groups	Sample	Mean	Std. Deviation	Standard error	Less value	High value
Front hands jump on a vault table machine	Control	15	5.13	0.91	0.23	4.00	7.00
	Experimental	15	7.13	0.74	0.19	6.00	8.00

Discussion of the research results

The researcher confirms through the statistical results that the educational method followed by the subject teacher has an impact on students' learning of the researched skill of artistic gymnastics, which adopted the teaching method approved by the subject teacher and the appropriate repetitions that accompanied the educational units, in addition to performing continuous exercises. Taking into account its suitability to the abilities and capabilities of the female students, as well as the gradual level of difficulty of the movements and skills, which ensures performance by everyone, and this is consistent with

what (Najah Mahdi Shalash and Akram Muhammad, 2000) [3] pointed out, "Practice and exerting effort through training and continuous repetitions are necessary in the process of education and acquisition.

Training is also necessary for the person to regulate their motions, engage with the skill, and achieve synchronisation between the actions that comprise the skill in a proper, sequential execution at the right moment. It improves the group members' acquisition, growth, and mastery of the skill, enabling the researcher to identify variations between the group members' pre- and post-measurements. The

experiment's goal was to statistically analyse the data and determine the arithmetic mean and standard deviation values for each variable under investigation, as shown in Table (4).

This confirms that there is a significant effect of the educational curriculum on learning the researched skill in artistic gymnastics. It was applied by the researcher because the educational units contain exercises that activate the largest number of muscles, as the educational units contained a group of different movements for the torso, arms, legs, and head, as well as various fast and slow movements according to the time of movement, its repetition, and the distance. In addition, technology was used using electronic simulation media. Represented by displaying the "Date Show" screen and the laptop, all of this helped in learning and acquiring a good level of scientific and legal knowledge of the subject of artistic gymnastics for female students, as well as the skills (front hands jump on a vaulting table for female students). (Abdul Hussein & Hrebid. (2023) ^[4].

The students' reaction to all learning needs via the educational units is the cause for this learning and acquisition of the investigated abilities, as they are the most efficient way to spotlight energies, maintain level, and achieve objectives. (Nizar Al-Taleb and Kamel Al-Wais, 2000) ^[2] pointed out, "The athlete who strives towards a specific goal will have an incentive." In his work, and that work without a goal is futile and neglectful work, so the sports educator must help the athlete set a suitable goal for him that he can achieve so that the exercise has value and so that the athlete knows the extent of his progress.

As Ed. Lisa Yount also pointed out, "Using learning technology reduces the risk of injury and also helps students learn basic skills, making the material more interesting and so students are more likely to remember what they learn".

The researcher believes that the use of electronic simulation creates an ideal environment for learning, especially in gymnastics, so that all external influences are isolated from the student, and the focus is on the skill, and also in line with the development taking place in the learning process, increasing suspense and excitement among students, and breaking the routine they are accustomed to when performing skills in the lecture, as it contains The educational units cover a group of different movements of the torso, arms, legs, and head, as well as various fast and slow movements according to the time of movement, its repetition, and the distance. In addition, virtual reality technology was used, represented by a window on the virtual world and via a "data show" screen. All of this helped in learning and acquiring the researched skill.

Conclusions and recommendations

Conclusions

1. The use of electronic simulation media technology has an effective effect in developing and improving the level of learning some skills on gymnastics equipment for female students.
2. The results showed that there is an advantage in using electronic simulation media technology in developing and improving the level of learning some skills on gymnastics equipment for female students.

Recommendations

1. Adopting the use of electronic learning technology to improve some basic skills on gymnastics equipment for female students.
2. Emphasis on using the educational curriculum prepared by the researcher in future research at different age stages.

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