THE EFFECT OF SPECIAL EXERCISES USING AN AUXILIARY DEVICE IN LEARNING THE FRONT HANDS JUMP ON THE FLOOR MOVEMENT MAT FOR STUDENTS

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ABSTRACT

The research problem emerged through the researcher’s observation of a gymnastics lesson in the College of Physical Education and Sports Sciences, as well as the experience of the supervisor, being a teacher of the subject in the same college. From performing the skill of the forward jump on the ground movement device by means of special exercises prepared by the researcher. The research also aims to design an auxiliary device to learn the skill of the front jump on the carpet of ground movements and prepare special exercises on this device in addition to identifying the effect of those exercises on the proposed device in learning the skill of the front jump. The experimental and control groups and in favor of the experimental group in the post tests. The researcher used the experimental method for the two equal groups (the control and experimental) with the pre and post test for its suitability to the nature of the research problem. 123 students, while the research sample is chosen in an intentional way and divided into groups by taking (5) students from each group.

It was found that there are significant differences between the results of the post-tests between the control and experimental groups Several conclusions, including that the special exercises performed on the device achieved positive results in learning the skill of the forward jump, as well as saving time and effort for the teacher and the student. The device also speeded up the learning process. The researchers recommends that the proposed auxiliary device can be used for both sexes. The use of modern devices and tools and keeping pace with technology will contribute in learning skills for students or players correctly

I. INTRODUCTION AND RESEARCH IMPORTANCE:

research importance:

Gymnastics is one of the sports in which the level of performance has reached the level of creativity and innovation, and gymnastics is one of the basic games in the physical education curriculum, because of this game of many benefits, so it requires the development of kinetic and physical abilities and sports sciences and because of its importance and many benefits. For all movements on the rest of the devices, and it is one of the favorite and interesting skills for most practitioners because of its linkage and coordination, as its learning is linked to learning the basic elementary situations because it is the basis for learning and mastering these movements at the right time. Also, special exercises have a great role in education and training in order to raise the level of skill preparation, so it should not be considered as a precaution, but rather an effective means with influential conditions related to the physical aspect and has a role in the preparatory period in various sports and thus it effectively affects when it is linked In racing exercises, the front hands jump skill on the floor mat is considered one of the difficult skills for students of the Faculty of Physical Education, due to their poor level of performance, in addition to the fact that it requires art and motor coordination from the students, as it is a complete rotation of the body around the transverse axis. Kinetic learning, like other educational sciences in the field of physical education and sports sciences, has received increasing attention to a large extent through recent research and studies, which made it take an organizational form. Their capabilities and abilities, as well as the numbers to organize to achieve the best that is appropriate to develop the level of performance.

The educational aids and devices and the importance of their use in the kinetic learning process are no longer a marginal issue in the educational process, but rather have become an integral part of its basic components, as the
use of various educational aids makes the kinetic learning process more effective and positive, because its use in the educational process has several benefits and functions from The most important of which is building and developing the learner’s motor perception, determining the correct motor paths, and other important benefits that work to achieve the largest possible educational efficiency, in line with the individual capabilities and available capabilities of the learner in the surrounding environment, taking into account individual differences and the age stage of the learner during the learning process.

II. RESEARCH PROBLEM:

Through the researcher’s observation of the Gymna Steak lesson in the College of Physical Education and Sports Sciences, as well as the supervisor’s experience as a teacher of the subject in the same college, he noticed that there is difficulty in the early stages of learning by students, because the college lacks educational means and tools that facilitate and speed up the learning process The large number and the lack of teachers requires a great effort on the part of the teacher to make notes and help more than one learner at the same time, which leads to a waste of lecture time, which is reflected in the lack of performance of repetitions, which in turn contributes mainly to mastering the performance process for this skill, so the researcher wanted to put A temporary solution to this problem by seeking the researcher and the supervisor to propose an educational device that facilitates the performance of the forward jump skill on the carpet of ground movements and the possibility of grading the difficulty in performance, perhaps he can put a solution to this problem

Research objectives:

• Designing an auxiliary device to learn the skill of the forward jump on the floor mat for third-year students in the College of Physical Education and Sports Sciences / Wasit University.
• Preparing special exercises on the proposed device to learn the skill of the forward jump on the floor movements of the third stage students.
• Identifying the effect of special exercises using the auxiliary device in some learning the skill of the forward jump on the floor movements of the third stage

Assuming the search:

1. There are statistically significant differences between the results of the tribal and remote tests of the skill under study on the floor mat device and in favor of the post tests for both research groups.

2. There are statistically significant differences between the results of the post-tests of the skills under study on the floor movement mat device in favor of the experimental group.

Areas of research:

1. The human field: students of the Faculty of Physical Education and Sports Sciences, third stage / Wasit University.

2. Time range: the period from 27/12/2020 to 28/7/2021.


III. RESEARCH METHODOLOGY AND FIELD PROCEDURES:

Research method:

The problem is what determines the research method in order to detect and reach the truth, through a comprehensive investigation of the phenomena and evidence related to the research problem, so the researchers used the experimental method for the two equal groups (control and experimental) with a pre and post test to suit the nature of the research problem.

Research community and sample:

The research community was determined by the students of the College of Physical Education and Sports Sciences at Wasit University / the third stage for the academic year 2020–2021, who numbered (123) students, while the research sample was chosen by the intentional method and divided into groups by taking (5) students from each
division by four divisions, i.e. The sample amounted to (20) students, where the research sample constituted (16.26%) of the research community.

In order to ensure that the sample is an honest representation of the research community, the researcher performed homogeneity on the extraneous variables (height, biological age, mass), while the researcher conducted a handstand equivalence between the two research groups when conducting the tribal tests to ensure that both groups included starting with one starting point when implementing Education Curriculum.

**Homogeneity of the sample:**

the researchers made some measurements and tests for the members of the research sample in each of the variables of height, weight, age, and (handstand) test. Table (1) shows this:

Table (1) The homogeneity of the research sample

<table>
<thead>
<tr>
<th>Variables</th>
<th>unit of measure</th>
<th>Arithmetic mean</th>
<th>Mediator</th>
<th>standard deviation</th>
<th>Coefficient of torsion</th>
</tr>
</thead>
<tbody>
<tr>
<td>length</td>
<td>cm</td>
<td>165.65</td>
<td>172</td>
<td>5.179</td>
<td>0.030</td>
</tr>
<tr>
<td>weight</td>
<td>kg</td>
<td>66.65</td>
<td>65</td>
<td>4.795</td>
<td>0.148</td>
</tr>
<tr>
<td>biological age</td>
<td>year</td>
<td>20.446</td>
<td>22</td>
<td>1.454</td>
<td>0.846</td>
</tr>
</tbody>
</table>

Through the above table, it is clear that the research sample is homogeneous, since the sample members have a normal distribution of the extraneous variables, because the skew coefficient was within the normal limits (±1).

**The equivalence of the two search groups:**

The researchers performed equivalence on the two research groups in the variables under study and table (2) shows this:

Table (2) It shows the equivalence of the two research groups (control and experimental)

<table>
<thead>
<tr>
<th>Statistical Parameters Variables</th>
<th>measruing unit</th>
<th>control group</th>
<th>experimental group</th>
<th>Value (T) Calculated</th>
<th>Error rate</th>
<th>Indication level</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td>Mean</td>
<td>Std. Deviation</td>
<td>Mean</td>
<td>Std. Deviation</td>
<td></td>
</tr>
<tr>
<td>Stand on the hands</td>
<td>Degree</td>
<td>6.311</td>
<td>0.833</td>
<td>6.254</td>
<td>1.118</td>
<td>0.164</td>
</tr>
<tr>
<td>Front hands jump</td>
<td>Degree</td>
<td>3.600</td>
<td>0.882</td>
<td>3.450</td>
<td>0.793</td>
<td>0.565</td>
</tr>
</tbody>
</table>

T is equal to the tabular ":." (2.541) at the degree of freedom (18) and the level of significance (0.05).

**Devices, tools and aids in the search:**

To obtain accurate results for the research, there are a number of means and tools that the researcher uses for the purpose of the research service, which he believes will help him reach the goals he has set, to find solutions to many problems. These tools are:

**Means of collecting information:**

1. Personal interviews with experts and specialists.
2. References and sources.
3. Note
4. Tests and measurements.
5. Performance evaluation form for the skills under study.
Equipment and tools used in the research:

- The proposed auxiliary educational device.
- A computer type (HP).
- A medical scale for measuring weight and height.
- A camera (video camera), one type (Nikon).
- Tripod for the camera (camera) number (1).
- The floor mat.
- CDs.
- Miscellaneous stationery.
- The simplest sponge.
- One (1) metal tape measure to measure the lengths, widths and circumferences for students.

Field Research Procedures:

After the idea of the device came by the researchers in designing a proposed auxiliary device in learning the forward jump in gymnastics and after he made a questionnaire to present the proposed device to a group of experts and specialists for the purpose of knowing their opinions about the usefulness of the device and preparing special exercises to learn this skill, as the researcher presented the device’s components, measurements and method Working on it and the results were good in the life of the device.

The two survey experiments

In order to determine the accuracy and validity of the research work and to avoid obstacles that may appear when conducting the experiment, the researchers conducted two exploratory experiments, the aim of which was:

- Knowing the safety and efficiency of the devices and tools used.
- Ensure the validity of the photographic equipment (camera).
- Check the validity of the video film.
- Determine the location of the camera and the shooting angle.
- Distributing work tasks to the assistant work team to accomplish their tasks according to the research objectives.

First reconnaissance experiment:

After installing the proposed device in the gymnastics hall in the College of Physical Education and Sports Sciences, the researchers conducted the first exploratory experiment on Monday, on 28/12/2020, as the researcher brought four third-grade students of the College of Physical Education and Sports Sciences in Wasit for the academic year 2020-2021 from outside the research sample to perform the front hands jump skill on the proposed device, and the purpose of the exploratory experiment was:

- Determining the negatives and positives in the form and measurements of the proposed device.
- Verify the device is valid and identify any other problems to be avoided.

After the initial experiment was conducted on the device, the researcher noticed that there are some minor obstacles with regard to the measurements that affect the motor path of the front hand jump skill and the method of raising the device up or down, and the necessary adjustments were made and these obstacles were avoided.

Second exploratory experiment:

After making adjustments to the measurements and the motor path of the front hand jump skill on the proposed device, the researcher conducted his second exploratory experiment on Wednesday on 12/30/2020 through the performance of (4) students from the fourth stage who had learned to perform the skill, in the same place and its purpose was:

- Identifying the needs of the educational curriculum, how to implement it and the time it takes for it.
- Determining the exercise time on the device in each educational unit.
- Learn the skill with the help of the device.
• Identifying the difficulties and obstacles that the researcher may face while applying the special exercises on the proposed device

**Tribal tests:**

The researchers conducted the tribal tests on Sunday (3/1/2021) in Al-Jamna Steak Hall in the College of Physical Education and Sports Sciences, and at exactly ten o’clock in the morning, the front-hands jump skill test was conducted.

The researchers took into account the process of warming up the players and the psychological readiness to apply the test as The tests were conducted in the presence of the residents, and after completing the tests, the data were downloaded into previously prepared forms.

**Special exercises (main experiment):**

After conducting the tribal tests, the special exercises prepared by the researchers on the proposed device to learn the skill of the front jump for the hands were started on Tuesday (5/1/2021), as those exercises were presented to the experts and specialists in the field of gymnastics and kinesthetic learning, as well as the application of exercises for using the device. The proposal is by (24) educational units that lasted for a period of (8) weeks and by three educational units per week for days (Sunday - Tuesday - Thursday) as the exercises were applied to the experimental sample under the supervision of the researchers, while the control sample applies the prescribed curriculum under the supervision of the subject professor and during the educational units. Where the unit time, which represents (90) minutes, was divided into (the preparatory section, the main and the final section), as the preparatory section included a warm-up, then moved to the main section, which included several special exercises using the floor mats of different heights and illustrative means and using the proposed device that saved the researcher the process of performance evaluation by giving direct corrections to the performance during the student's application and then moving to the final section.

(Figure 1) shows the method of performance on the device
Post tests:
The researchers conducted the post tests on Sunday, 2/3/2021 in the Al-Jamna Steak Hall in the Faculty of Physical Education and Sports Sciences, at exactly ten o’clock in the morning.

Performance evaluation:
The technical performance of the skill in question and for all the research sample was presented to the arbitrators, as the performance evaluation for the skill was of (10) degrees, and it was calculated through the highest and lowest degrees and the adoption of the arithmetic mean of the two intermediate degrees of the arbitrators’ scores.

Statistical means:
The researcher used the statistical bag for psychological and educational sciences (spss) to process the data he obtained. The means are: 1- Arithmetic mean. 2- The mediator. 3- The standard deviation. 4- skew modulus. 5- T-test for two independent samples.

Presentation and discussion of the results:
This chapter deals with the presentation, analysis and discussion of the research results, after the researchers completed all the data resulting from the used tests that were placed in the tables because of the ease in extracting scientific evidence and because it is the appropriate explanatory tool for research, which enables the achievement of research hypotheses and objectives in the light of the field procedures carried out by the researchers.

Table (3)
It shows the arithmetic means, standard deviations, the calculated "t" value, the error rate and the type of significance among the results of the post-tests in evaluating the performance of the front-hand jump under study for the two research groups (experimental and control)
IV. DISCUSSING THE RESULTS OF THE POST-TEST FOR THE VARIABLE OF THE EXPERIMENTAL AND CONTROL GROUP:

Through Table (3), it is clear that there are significant differences between the control and experimental groups and in favor of the experimental group. The researchers attribute the reason for this to the special exercises that the researchers developed for the purpose of correcting performance and facilitating the learning process for that skill, as the researchers inferred that the body during the performance of this skill falls under the influence of Two forces are the reaction resulting from the ground and the force of weight acting on the center of gravity of the body, which acts in a vertical direction downward. This is what Talha Hossam Al-Din indicated, “The closer the line of gravity of the body is to being in the vertical position, the greater the body’s ability to maintain equilibrium” (6).

The device is designed to bear a weight of more than (100 kg). Also, the special exercises developed by the researchers relied in their formulation to treat cases of weakness and imbalance in the application of the vocabulary of this skill. The researcher attributes the reason for the almost uniform development in the learning level of the control group, as a natural result of the regular teaching of this group subject to the educational curriculum with explanation, presentation and manual assistance when performing students to direct the learner’s body to the correct paths for the movement of body parts. And sensory knowledge of the learner about how the parts of the body move in the required directions and the right timing, and the continuation of repetition and repetition of the skill, i.e. more reinforcement of the response, as we note the occurrence of advanced responses for each previous educational unit among the members of the control group.

If it happens that it is sometimes a strong help, It leads to a negative impact on the learner because he is unable to know the error, and that helping a large number of students, according to repetitions, in performing the skill, may cause fatigue for the teacher, and thus the assistance is weak and hinders the achievement of the goal, as the teacher must help at the right moment, to help in The success of the movement's performance, and on the contrary, the performance fails. While the researcher believes that the experimental group’s use of the device was helpful in providing feedback, here the individual gets feedback (information) about the amount of force used, the location of the limbs, the arc of the body’s trunk, through sensory receptors “(7), and there is evidence Emphasizes that “when accurate internal feedback is available, the use of additional feedback will not give an additional effect to learning motor skills” (6), as for the members of the control group, they are not able to know the error in performance, except through the teaching (external feedback).

The researchers attributes this to the fact that the proposed device facilitated the learning process because it was drawing a clear and stable path for learning, which led to the accuracy of performance. It may occur during the performance of the movement, because learning was not limited to the stereotyped method (repetition only), but took the form of training, practice and reinforced repetition, and this is confirmed by learning theories that learning cannot occur unless behavior is reinforced. During the learning process, as indicated by Sayed Sobhi, "we must notice a gradual improvement in the individual's performance as a result of reinforcement" (3).

The proposed device was an important means of reinforcement, and this was evident in the results of the post-tests, which showed significant differences, and this indicates that the proposed device is very suitable for teaching the front-hand jump.

Through the results of Table (3), we note the clear progress of the experimental group over the control group in the learning process of the skill under study, and the reason for this is due to the use of the proposed device by the experimental group.

The device led to the advancement of the learning process and reduces the time needed to learn (4). The role of the proposed device does not stop at this point, but extends to the basis of the educational process, which is the kinetic visualization, which you work on building and developing. Where Muhammad Al-Arabi points out that “perception of movement and feeling it results in contractions that are transmitted through the nerve pathways associated with this movement, which is known as the Copuber Effect. skilled (5).
We also know through the results of Table (3) that there is a speed in the learning of the experimental group members about the control group in learning the skill, and there is also a clear progress in the level of performance, because the learning process that took place using the proposed device has helped the learner to use the necessary force to push and perform the front hands jump through the optimum repetition of what this movement needs to push and thus perform the movement in the correct manner. The front hands jump is one of the closed skills in which the learner performs the performance under the same conditions as well as the same requirements every time, especially after reaching the mechanism. (1)

The proposed device served as a motivator and motivator for the members of the experimental group, as stimulation is one of the important factors that facilitate the learning of motor skills. And motivation works to direct behavior towards effectiveness and has a major role in delaying fatigue as well as working to increase the attention of the learner and increase accuracy. As the proposed device had an important means of reinforcement, and this was evident in the results of the post-tests, which showed significant differences between them, and this indicates that the proposed device is very suitable for teaching the front-hand jump of ground movements.

We conclude from this that the greater and faster development of the experimental group compared to the control group, that the device had an effective effect and an aid factor for the student in terms of the absence of fear, as the student began to perform the movement correctly without hesitation.

V. CONCLUSIONS AND RECOMMENDATIONS:

Conclusions:

- The special exercises on the proposed apparatus according to the educational methods greatly led to the learner's understanding of the skill sought in the artistic gymnastics for students.
- The use of the proposed auxiliary device achieved positive results on the research sample.
- A good percentage of learning not only the aforementioned skill, but also developing some basic skills (front hands jump, back hands jump, handstand) on the floor movements of the technical gymnastics for men.
- The device added an atmosphere of fun and suspense to the learners while performing the educational experience.

Recommendations:

- Disseminating the proposed device to the faculties of physical education in the universities of the country to be used as an auxiliary educational device in the gymnastics lesson.
- The necessity of conducting research similar to the current study and applying it to some movements that fit the work of the device.
- The use of the proposed device is to save time and effort for the teacher and the learner student to develop the skill (the front hands leap).
- The proposed auxiliary device can be used for both sexes.

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