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The effect of the vertical learning transmission of the skills of the human wheel and the handstand on the skill of the Arabic jump on the floor movement mat in the artistic gymnastics for men

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Abstract

The idea of the research is based on knowing the transmission of the vertical effect of one skill on another skill. Where the researcher worked on teaching two skills, namely the human wheel and standing on the hands, and knowing the effect of these two skills on learning the Arabic jump skill. The subject teacher, the researcher conducted pre and posttests to find out the size of the change and whether the two previous skills affected the learning of the Arabic jump skill even in a simple way without rehearsing it. The researcher reached results that the experimental group achieved better results than the control group, thanks to the exercises prepared by the researcher, On the one hand, and because of the similarity of its kinetic path with the skill of the Arab jump, on the other hand. The researcher reached a conclusion that it is possible to teach a specific skill and to benefit from that learning in learning another skill that is similar or closes to it, and this is what we call the transfer of learning effect.

Keywords: Vertical learning, transmission, human wheel, handstand, skill, Arabic jump, artistic gymnastics

1. Introduction

The phenomenon of transferring the effect of learning is of great importance in the field of kinesthetic learning because the process of transfer leads to acceleration of learning and early maturity of the individual. For this reason, the phenomenon of learning transfer has received increasing attention from scientists and specialists in the field of learning different skills. There is no doubt that the transmission of the effect of learning occurs in all forms and attempts to learn mathematical skills, and this has been proven by many experiments and studies conducted by kinetic learning scholars and psychologists since the beginning of this century. "Where the transmission of the effect of learning is one of the things that are of great importance in the field of learning mathematical skills, because without learning, it would be necessary for every learner to learn the special responses he needs for each situation, and this is a difficult matter that the learner's years of life cannot meet to master" (Mazen) (2011) [5]. Learning in all its cognitive, kinetic and social aspects effectively contributes to acquiring new cognitive, kinetic and social aspects, which in turn completes the cycle of knowledge in a person to earn more throughout his life years. The use of this knowledge and information in learning new knowledge is nothing but a process of transferring the effect to previous learning. Given the great similarity between the mathematical skills in the effectiveness of gymnastics in terms of the motor path and the path of the center of the body's gravity, whether in the introductory, main or final part of the skill, here plays the transfer of the effect of vertical learning an important role in acquiring skills quickly and well. Where the skills of the human wheel and the Arabic jump are among the basic skills of the students of the College of Physical Education and Sports Sciences (second stage), and that learning them takes time for the learner, since the students practice gymnastics for the first time. In addition, the requirements for this activity are learned from childhood because of its physiological determinants for the gymnast once, from employing the transmission of the effect of vertical learning to serve the educational process.

1.1 Hence the importance of the research as follows

- Not investing the similarity between the skill performance of the human wheel and handstand skills in learning the skill of the Arabic jump on the floor mat in the artistic gymnastics for men.
- Loss of time and effort during the learning period due to the lack of knowledge of the concept of transferring the impact of learning between different skills for some teachers, which negatively affects the development and reduction of time, and effort and raising the level of required achievement.
- Shedding light on modern learning methods or the so-called economics of learning, through the extent to which experiences from previous learning are used in new learning.

Research problem: Learning the basic skills in artistic gymnastics for men on the floor movement carpet is like the mother to learn the rest of the movements on the same device or on the rest of the gymnastics devices, due to the similarity of some motor paths to those skills, and that the key to learning the rest of the difficult and complex skills lies in mastering the basic skills On the carpet of ground movements, because of their role in correcting and perfecting the paths of motor performance and shortening the effort and time during the learning process. Hence the problem of our research in not investing that similarity between the different ground skills, whether in the main or introductory part of the skill.

1.2 Research aims

- Preparing educational exercises to learn the skill of the human wheel on the floor movement mat in the artistic gymnastics for men.
- Knowing the effect of the transmission of the effect of vertical learning of the skill of the human wheel on the skill of the Arab jump on the floor movement mat in the artistic gymnastics for men.
- Preparing educational exercises to learn the skill of standing hands on the floor movement mat in the artistic gymnastics for men.
- Knowing the effect of the transmission of the effect of vertical learning of the skill of handstand on the skill of the Arabic jump on the floor movement mat in the artistic gymnastics for men.

1.3 Research assignments

There are statistically significant differences between the pre and post tests for the control and experimental groups and in favor of the post tests.

There are statistically significant differences between the post tests of the control and experimental groups and in favor of the post tests in the experimental group.

The experimental group was better at transmitting the effect of vertical learning than the control group.

1.4 Research areas

- Human field: Students of the Theoretical Sciences Branch of the second stage in the Faculty of Physical Education and Sports Sciences / Maysan University for the academic year 2021-2022.
- Time range: from 20/1/2022 to 17/3/2022.
- Spatial domain: Gymnastics hall affiliated to the Faculty of Physical Education and Sports Sciences / University of Maysan.

1.5 Define terms

Transfer of learning effect: It is the investment of previous learning of a particular skill in learning a new skill that is similar to the previous skill.

Vertical: is the transfer of the learning effect from one skill to another in the same game or activity.

2. Research methodology and field procedures

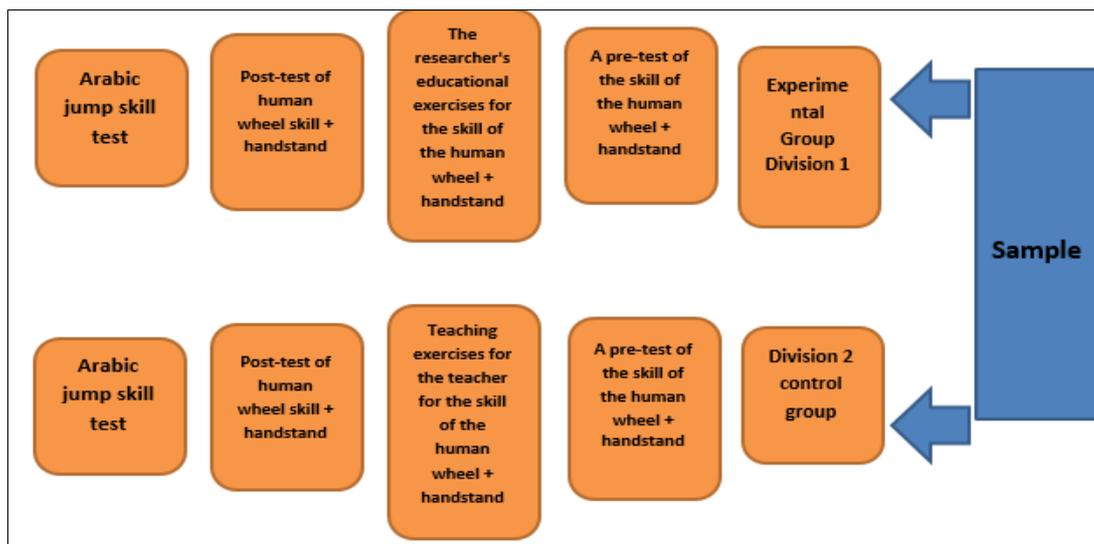
2.1 Research Methodology

The approach is "the accurate perception of the mutual relations between society and the trends, tendencies, desires and development so that it gives a picture of the life reality, setting indicators, and building future predictions, and that many cases and phenomena can only be studied through an approach that fits the problem" (Wajeeh, 2000). Therefore, the researcher adopted The experimental method is the appropriate method for solving the research problem and achieving its objectives.

2.2 The research community and its sample

It means "the model on which the researcher conducts the entirety and focus of his work, and that the research objectives and the procedures taken by the researcher determine the nature of the research sample that he will choose and which represents the research community" (Duke, 1988). The College of Physical Education and Sports Sciences - University of Maysan for the academic year 2021-2022, totaling (38) and the research sample was selected from the two divisions of the second stage, where Division (1), numbering (18) was divided into an experimental group, and Division (2) (18) into a group Officer after excluding two students for the exploratory experiment.

2.2.1 Research design (Experimental)



2.3 Devices, tools and means of collecting information

2.3.1 Devices

- Carpet floor movements.
- Lenovo laptop calculator.
- Mobile device (S9+).

2.3.2 Tools

- Pens.
- CDs >
- Teaching Aids.

2.3.3 Means of collecting information

- Scientific sources.
- Information registration form.
- Note.
- The exams.
- Statistical means.

2.4 Field Research Procedures

2.4.1 Experimental Experiment

It is “a practical training for the researcher to identify the negatives and positives that were encountered during the tests to avoid them” (Qasim, 1989), where the reconnaissance experiment was conducted at eleven o'clock in the morning on Thursday, 3/1/2022, on a sample of students of the theoretical sciences branch of the second stage, who numbered (2) A student, bearing in mind that the exploratory sample bears the same specifications as the main sample.

2.4.2 Tribal tests

The researcher conducted the tribal tests on the skills under study on 20/1/2022 in the gymnastics hall in the College of Physical Education. The test scores were recorded in the special forms prepared for registration. The test was technical performance through the students performing the skill before a committee of referees specialized in the field of gymnastics.

2.4.3 The main experience

The researcher conducted his main experiment on Thursday 27/1/2022 and it was as follows:

The researcher relied on the preparation of suggested exercises that consisted of (8) educational units for a month, in each week two units of instruction.

The researcher took into account the principle of kinesthetic learning in learning from easy to difficult through the difficulty sequence of educational exercises.

The educational exercises were to teach the skills of the human wheel and handstand by giving the experimental group educational exercises to teach these two skills, and the control group educational exercises to learn the skills of the human wheel and handstand as well, but according to the method of the subject teacher.

After completing the post tests, the researcher conducted another test, which is a skill test (the human wheel) to see the impact of learning the previous skills on it.

2.4.4 Post-tests

The researcher conducted his post tests on 10/2/2022 and the results were confirmed under the same conditions as the tribal tests.

2.4.5 Transfer tests of the effect of learning for the skill of the Arabic jump

After conducting the post tests for the skill in question, the researcher conducted another test, which is a test for the skill of the Arab jump, after giving the research sample an educational unit about the skill of the Arab jump, then the test was conducted and the purpose of it was to know the extent of their performance of that skill and whether there is a transfer to the effect of learning.

2.5 Statistical means

- The researcher used the statistical program Spss For data processing, the following laws are used:
- Arithmetic mean.
- Standard deviation.
- Law (t) for symmetrical samples.

In addition to using the learning effect transmission equations, which include the following (Nawfal, 2010) [6]:

- Degree of absolute transmission.
- The degree of relative transmission.
- The degree of transition by setting.
- The degree of transmission by maximum probability.
- The degree of transmission by balanced measurement.

3. Presentation and Discussion of the Results

3.1 Presentation and Discussion of the Results of the pre and post tests for the two experimental groups

Table 1: Shows the arithmetic means, standard deviations, the calculated (t) value and the significance of the differences for the experimental and group pre and post tests

Variables	Pretest		Post test		Calculated (t) values	Indication level	Indication type
	s	p	s	p			
(human wheel)	3.45	1.014	8.70	1.166	7.70	0.00	Moral
(handstand)	3.44	0.51	7.89	.69 0	9.95	0.00	Moral

Significant at significance level $\leq (0.05)$

Table 2: Shows the arithmetic means, standard deviations, the calculated (t) value, and the significance of the differences for the pre and posttests of the control group

Variables	Tribal		After me		Calculated (t) values	Indication level	Indication type
	s	p	s	p			
Human wheel	3.79	0.85	6.55	0.87	14.74	0.00	Moral
Handstand	3.64	0.931	6.35	.927 0	10.25	0.00	Moral

Significant at significance level $\leq (0.05)$

Table 3: Shows the arithmetic means, standard deviations, the calculated (t) value and the significance of the differences to test the human wheel skill for the two experimental groups

Variables	Experimental group		Control group		Calculated (t) values	Indication level	Indication type
	s	p	s	p			
Arabian jump	5.94	1.02	3.11	0.60	9.77	0.00	moral

Significant at significance level $\leq (0.05)$

The degree of absolute transition *

Table 4: Statistical treatment of the control and experimental groups according to the equation of the degree of absolute transfer

Processing skill	Experimental group	Control group s	Absolute transition equation	The degree of absolute transition
Human wheel	8.70	6.55	$8.70 - 6.55$	2.15
Handstand	7.89	6.35	$7.89 - 6.35$	1.54

* Absolute transition = the experimental group - the control group.

2- The degree of relative transmission.

The degree of transition by setting *

Table 5: Statistical treatment of the control and experimental groups according to the equation of the degree of relative transition by means of control

Processing skill	Experimental group	Control group s	Equation of transition by tuning	The degree of transition by adjusting
human wheel skill	8.70	6.55	$\frac{8.70 - 6.55}{6.55} \times 100$	32.82
Handstand skill	7.89	6.35	$\frac{7.89 - 6.35}{6.35} \times 100$	24.25

*Degree of transmission by adjustment = $\frac{\text{Experimental group} \times \text{control group}}{\text{puorg lortnoc}} \times 100$

The degree of transmission by maximum probability *

Table 6: Statistical treatment of the control and experimental groups according to the equation of the degree of transmission by maximum probability

Processing skill	Experimental group	Control group	Equation of transition by maximum probability	Degree of transition from maximum probability %
Human wheel skill	8.70	6.55	$\frac{8.70 - 6.55}{9 - 6.55} \times 100$	87.75
Handstand skill	7.89	6.35	$\frac{7.89 - 6.35}{9 - 6.35} \times 100$	58.11

*Degree of transmission by adjustment = $\frac{\text{Experimental group} - \text{control group}}{\text{Maximum potential enrollment} - \text{control group}} \times 100$

C- The degree of transmission by balanced measurement. *

Table 7: Statistical treatment of the control and experimental groups according to the equation of the degree of transmission through balanced measurement

Processing skill	Experimental group	Control groups	Equation of transition by balanced scaling	Degree of transition from balanced measurement %
Human wheel skill	8.70	6.55	$\frac{8.70 - 6.55}{8.70 + 6.55} \times 100$	14.09
Handstand skill	7.89	6.35	$\frac{7.89 - 6.35}{7.89 + 6.35} \times 100$	10.81

*Degree of transmission by balanced measurement = $\frac{\text{Experimental group} - \text{control group}}{\text{experimental group} + \text{control group}} \times 100$

Table 8: Summary of Absolute and Relative Transfer Equations

Processing skill	Experimental group	Control groups	The degree of absolute transition	The degree of relative transition by		
				Settings	Maximum likelihood	Balanced measurement
Human wheel skill	8.70	6.55	2.15	32.82	87.75	14.09
Handstand skill	7.89	6.35	1.54	24.25	58.11	10.81

3.2 Discussing the Results

By presenting the results that were reached in Table (2.1) and displaying the statistical data, it was shown to us. It is the superiority of the experimental and control groups in the post tests over the tribal tests, where the arithmetic circles of the experimental group reached (3,45) for the skill of the human wheel, and it was for the skill of standing On the hands (3,44) in the pre-test, while the arithmetic means in the post tests were (8.70) and (7.89), while the arithmetic means of the control group were (3.79) for the skill of the human wheel and (3.64) for the skill of standing on the hands, and their arithmetic mean in the post tests was (6.55) for the human wheel and (6.53) for the skill of standing on the hands. This reinforces the hypothesis of the first research, which stipulated the superiority of the control and experimental groups in the post-tests over the tribal tests, and here the researcher attributes that superiority to the effectiveness of the exercises provided to the research sample in teaching the two skills under research and pushing the learning process forward. The researcher also found the superiority of the control group in The post-tests for the experimental group, and this is what the researcher attributes to the accuracy of the proposed exercises designed to teach those two skills (human wheel, handstand), where the researcher took into account the most important principle of motor learning principles, which is the principle of learning from easy to difficult and gradual in giving difficulty and using precise exercises The learning process pushes to progress and perfection. The proposed exercises had an effective effect in the (8) units presented, through which the researcher took into account some repetitions that target precisely the development of the motor path of skills through correct and perfect repetition, as “as one of the conditions that must be met for the learning process to take place It is an exercise in skill” (Wajih, 1987) [9]. And "enhanced repetition helps the player to master the sub-movements that in total represent the skill to be learned, and achieves consistency between these movements, making their performance in a correct sequence and in an appropriate time" (Ahmed, 2015) [2]. By looking at Table (3), which shows the arithmetic means of the control and experimental groups for the skill of the Arab jump, we will notice that there is success in the performance of the research sample for this skill without rehearsing it, and this is what we call (transfer of learning effect), where the research sample achieved a remarkable development in the test The performance has benefited from the exercises prepared by the researcher for

learning the performance of the skills of the human wheel and handstand in achieving the learning of the Arabic jump skill. The skill of the human wheel in (transferring the effect of vertical learning) on the skill of handstand, and the researcher attributes this to the similarity between the sections on wheel skill, as it is somewhat similar to the sections of the skill of the Arabic jump, where there is a match in its two sections (preparatory and main) and this makes the two skills similar In their motor path, there is more than the path of the handstand skill, and the more the similarity increases, the more the (vertical learning effect transmission) is achieved, as “learning similar and identical movements in terms of their repetition leads to a transition positively to the maximum degree in her learning” (Gage, 2000) [4]. The student adds that "the more similarities between two processes, the more transferring between these two processes" (Nizar, 1976) [7]. Here it should be noted that the skill of the Arabic jump in the experimental group was better than the control group, where it scored in its arithmetic mean (5.94), while The same skill was recorded in the control group (3.11) and this is what the researcher considers a natural product because of the progress of the experimental group in learning the human wheel from the control group, which was directly reflected in the transmission of the learning effect of the skill of the Arabic jump, and here the hypothesis of the third research was achieved, which states that the experimental group is better From the control in the events of transferring the effect of vertical learning, and this is consistent with what Al-Khatib mentioned that the learning that takes place through clear awareness and full understanding of situations facilitates the transfer of its effect to new situations” (Ahmed, 1986) [2].

4. Conclusions

1. The researcher concluded that the experimental group was better in transmitting the effect of vertical science than the control group, especially in the skill of the human wheel.
2. The transfer of learning occurs between the skills that have a similarity in their motor path and some of their sections (preparatory - main - final).
3. Learning the skill of the human wheel on the carpet of ground movements will shorten more effort and time for learners in learning the skill of the Arabic jump.

5. Recommendations

1. Gymnastics teachers in particular and the rest of the

subjects in general should take into account the study of similar and close skills in a sequential manner to benefit from the principle of transmission of the learning effect, which is reflected in the shortening of effort and time in the educational process.

2. Arranging the teaching of gymnastics skills sequentially according to the degree of difficulty.
3. Emphasis on the use of educational exercises aimed at mastering the correct motor path performance during the learning process.
4. It is possible to benefit from the principle of transmission of the effect of learning in the rest of the stages of physical education, especially in games that have closeness in performance, for example, benefiting from learning basketball skills in teaching handball skills. And also benefit from teaching badminton skills in learning tennis skills, and so on with the rest of the activities.
5. Conducting research on other activities and skills.

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