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## The effect of the distributed and intensive methods in teaching the performance of the pronation skill on the horizontal bar for students

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### Abstract

The process of learning skills has a major role in the practice of sports activities, which contribute to the individual's acquisition of motor skill up to the stage of mastery, as the learner is able to perform it in a manner that is smooth, aesthetic and economical with effort, and the principle that defines intense or distributed exercise is rest times between repetitions. Intensive exercise is Giving repetitions without a rest period or short rest periods between repetitions while performing the exercises, which is the practice of learning continuously and constancy of the skill required for learning and after a short rest period (6: 80-86), the importance of the research lies in knowing which of the two methods will be more effective in teaching the skill and directing teachers and trainers to use the most effective method in learning the skill in a manner that is characterized by speed and economy with effort. On the horizontal bar, as it needs to understand the motor path of the skill and the parts of the movement in addition to the physical and motor characteristics, as well as following one method or method during learning the skill, it may not help effectively in delivering information and motor performance to the learner. Therefore, the researcher decided to use two methods in learning the skill, the distributed and intensive method, and identify Which of the two methods has an advantage over the other and contributes to saving time and effort for the teacher, the researchers used the experimental approach in the manner of two equal groups, and the conduct of homogeneity and equivalence for the members of the research sample in order for them to be in one line of initiation, and after that a pre-test was conducted for the members of the sample, as the researchers prepared an educational curriculum in the distributed and intensive method, and after completing the teaching units, a post-test was conducted for the skill and the performance was presented The residents and the researcher reached to direct teachers and trainers to introduce the distributed method within the educational curriculum to teach skills in the faculties of physical education and sports sciences for the purpose of learning other skills in gymnastics.

**Keywords:** Intensive style, distributed style, the skill of ascending on the horizontal bar

### 1. Introduction

The process of learning skills has a major role in the practice of sports activities, which contribute to the individual's acquisition of motor skill up to the stage of mastery, as the learner is able to perform it in a manner that is smooth, aesthetic and economical with effort. Good, and therefore requires the player to think, feel, pay attention, and agree between the muscle groups. The principle that defines intensive or distributed exercise is the rest times between repetitions. Intensive exercise is giving repetitions without a rest period or short rest periods between total repetitions while performing the exercises. Also, it is the practice of learning continuously and constancy of the skill required for learning and after a short period of rest (6: 80- 86), as for the distributed exercise, it is the one that gives a large percentage of rest between one attempt and another of the exercise, and it may be as much as the duration of the practice or more, and according to the complexity and difficulty of the exercise. 41-42). The importance of the research lies in knowing which of the two methods will be more effective in teaching the skill and directing teachers and trainers to use the most effective method in learning the skill in a manner characterized by speed and economic effort and thus is reflected in the number of instructional units that are less compared to the traditional methods used by by teachers and coaches.

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**1.2. The purpose of the study**

1. To identify the effect of the two intensive and distributed methods in teaching the performance of the pronation skill on the horizontal bar.
2. Identifying the best method of the intensive or distributed method in teaching the performance of the skill of ascending by pronation on the horizontal bar.

**2. Research Methodology and Field Procedures:**

**2.1 Research Methodology:** The researchers used the experimental method appropriate to the nature of the problem.

**2.2 Research community and sample:**

The research community was determined by third-stage students in the College of Physical Education and Sports Sciences, University of Al-Qadisiyah for the academic year 2022-2023, whose number is (128) students distributed into (5) divisions (B, C, D, E, and F). The sample was chosen

randomly by lottery, and the sample was represented by Division (D, F) As the number of students in Division D reached (22) students, and after excluding repeaters, there were (2) students, so that the number of members of the experimental group became (20) students, and Division (F) amounted to (23) students, and after excluding (1) an injured student And a teacher (1) and a student who failed (1), so that the number of members of the control group became (20) students, as (20) students were approved for each group.

**2.2.1 Homogeneity and equivalence of the sample in the research variables**

The two researches recorded some measurements of the variables (age, length, and weight) for the sample members, and the (torsion coefficient) was used, through which the sample members appeared distributed according to the normal distribution. Table (1) shows that

**Table 1:** Shows the homogeneity of the sample:

Variables	Measuring unit	Mean	Std. deviation	Skew ness	Difference coefficient	Sample number
Length	Cm	167.575	1.92	0.7954-	1.1457	40
Weight	Kg	63.38	2.14	0.4681	3.3840	
Age	Year	21.4	0.49	0.4243	2.3184	

Through the above table, all the values of the torsion coefficient appeared between ( $\pm 1$ ), and this indicates the homogeneity of the sample, as the researcher divided the sample into two experimental groups, through the lottery, as one group works in the intensive method and the other works in the distributed method.

**2.2.2 Equivalence between the two groups**

The researchers intended to conduct equivalence in the pre-test (after two educational units) by performing the skill of ascending by pronation on the horizontal device for the members of the research sample in order for them to have one starting line, and Table (2) shows this

**Table 2:** Shows the equivalence of the two groups in the pretests in performing the skill of ascending with pronation on the horizontal bar.

Variables	Measuring unit	Distributed		Capacitor		T value	Sig level	Sig type
		Mean	Std. deviation	Mean	Std. deviation			
Rising upside down on the horizontal bar	10 degree	2.600	0.50262	2.8500	0.4893	1.594	2.042	Non sig

The tabular t value is 2.042 at (38) degrees of freedom and below the significance level of 0.05.

**2.3 Pre-test**

The teacher of subject performed the skill of ascending by pronation on the horizontal bar after two educational units for the purpose of introducing them to the skill and explaining it, and giving equal attempts to the members of the two groups, as the pre-test was conducted on 1/2/2023.

**2.4 Performance Evaluation**

After filming the performance of the skill, discs were distributed to the residents for the purpose of evaluating the performance, as the performance was out of 10 degrees after deleting the highest and lowest degrees and adopting the average of two degrees.

**2.5 Educational Curriculum:**

The sample underwent an educational program according to the method (intensive, distributed), as it included units according to the curriculum prescribed for the lesson of gymnastics in the third stage, the College of Physical

Education and Sports Sciences - University of Al-Qadisiyah, as the intensive exercise method was used with the first group consisting of (20) students distributed with the group The second, consisting of (20) students, included (6) educational units for each group distributed over three weeks, with two educational units per week.

The researchers relied on repetitions in their distribution, and from the researchers' point of view, they are more accurate in implementation for both groups, as each student performed (32) repetitions on the horizontal bar.

As the mechanism of intensifying and distributing the repetitions was by using a different number of horizontal devices, the intensive group was (2 horizontal equipment), distributing the intensive sample members into two groups, a group of (10) students and a group of (10) students, and thus the performance of the repetitions was twice that of the distributor group, while the distributor group used one clamping device.

**Table 3:** Shows the educational program:

Week	Teaching unit number	Horizontal device	Exercise
1	1	Education	Walk under the bar
	2	6	- weighted and jumped - Weighted, extended body and back
2	3	6	body lift performance
	4	6	Take a prostrate position
3	5	6	Linking the parts of the movement (performing the movement in full)
	6	8	movement performance
Total (32) repetitions			

**2.5.1 How to implement the method used in the research**

**2.5.2 Intensive exercise method**

As the student performs (3) attempts according to what is planned in the educational unit and in a continuous work manner without rest periods between repetitions, and when the student finishes performing, it is the turn of the second student. The first, as after completing the work, the first student returns to perform the set of other repetitions in the same manner, then this period of work is like a rest for the second student, then the second student returns, then the first until the required number of attempts is finished, and it is the turn of two other students until the end of the group.

**2.5.3 Distributed exercise method**

Where the performance of each student is one attempt, i.e. the performance of the first student, then the second student, etc., and so on until the turn returns to the first student to perform the second attempt, and so the performance continues among the group members.

**3. Presentation, analysis and discussion of the results**

**3.1 Presentation and analysis of the results of the performance tests of the skill of ascending on the horizontal bar**

**Table 4:** Shows the arithmetic means, standard deviations, and (T) value for the pre and post tests of the skill of ascending with a pronation on the horizontal bar.

Variables	Measruing unit	Pre-test		Post-test		T value	Sig type
		Mean	Std. deviation	Mean	Std. deviation		
Skill by intensive methods	Degree	2.600	0.50	5.40	1.05	10.87	Sig
Skill by Distributed method	Degree	2.8500	0.49	6.050	0.76	17.17	Sig

The tabular value is (2,093) under the level of significance (0.05) and with a degree of freedom (19).

Upon observing Table (4), it is clear to us in the pre-test that the arithmetic mean of the skill of ascending with pronation on the pull-up device that practices the intensive method amounted to (2.600) with a standard deviation of (0.50), while the post-test for the same group amounted to (5.40) and a standard deviation of (5.40). (1.05) and when using the t-test law), the calculated value of (t) (10.87) appeared with significant significance and with a degree of freedom (19), upon observing the same table in the pre-test, it became clear to us that the arithmetic mean of the skill of ascending by pronation on the pull-up device that practices the distributed method was (2.850) with a standard deviation of (0.49), while the post-test for the same group amounted to (6.050) and a standard deviation of (6.050). (0.76) and when using the t-test law), the calculated (t) value (17.17) appeared as a significant sign and with a degree of freedom (19), which

**2.6 Post-test of the research sample**

The two researchers conducted the post-test for the research sample of the two experimental groups after completing the educational units on Tuesday at ten o'clock in the morning corresponding to 7/3/2023 after completing the application of the curriculum prepared during the educational units according to the same methods and methods that were applied in the pre-test.

**2.7. Skill Evaluation**

The skill was evaluated according to the full performance of the skill, and the score was out of (10), as the highest and lowest scores of the four judges were omitted. The two scores were combined and divided by (2) to be the final score for the skill.

**2.8 Statistical Methods:** The researchers used the statistical bag (SPSS) to process and extract data.

indicates the existence of statistically significant differences between the pre and post tests and in favor of the post test.

**3.1.1 Discussing pre and post test**

By observing the results reached by the researchers and through the differences between the pre and post measurement of the two groups, as the intensive and distributed method both contributed to learning the skill, as the use of the distributed method in the first stages of learning the skill is the best because the learner is effective during this method and does not feel tired at the time Early and thus makes him able to concentrate, understand and learn, because this method is interspersed with rest periods and after understanding the motor path and learning the skill, then it will be followed by the intensive method of teaching the skill. It was also noted that the time period and exercises placed in the educational units contributed effectively to learning the skill.

### 3.2 Presenting and analyzing the results of the performance test of the skill of ascending by pronation on the horizontal bar for the post-tests.

**Table 5:** Shows the mean, standard deviations, and (T) value of the post-tests of the skill of propulsion by both intensive and distributed methods.

Variable	Intensive		Distributed		T value	Sig type
	Mean	Std. deviation	Mean	Std. deviation		
The skill of ascending on the horizontal bar	5.40	1.05	6.05	0.76	2.249	<i>Sig</i>

The tabular value is (2,042) under the level of significance (0.05) and with a degree of freedom (38).

#### 4. Discussing the results

Through what has been reached in the above table, we notice that the arithmetic mean in the post test for the skill of ascending by pronation on the horizontal bar and in the intensive method is (5.400) with a standard deviation of (1.046), while the arithmetic mean for the skill of ascending by pronation on the horizontal bar and in the distributed method is (6.05) with a deviation (0.76), and upon observing the calculated (T) value, we find that it is greater than the tabular one, and this means that the difference is significant and in favor of the distributed method. Therefore, we note the results of the post-tests that the group that practices distributed learning has developed in the amount of its learning more than the group that learns in the intensive method. The reason for the resulting learning is the correct organization of the educational units, the distribution of time, the appropriateness of the exercises placed in the educational unit, in addition to the mechanism followed in the distribution of the educational units during the week and the distribution of rest periods, which had a clear role in increasing learning using the distributed method, as this allows the learner to take a break this is sufficient because this type of exercise is characterized by the presence of periods of rest and thus makes the learner able to continue performing well without feeling tired. And this is what (Bahaa El-Din Salama 1992) [1] explained that "the rest period affects the recovery process, whether it is between one exercise and another, or between repetitions of one exercise, as it differs among beginners from those who are advanced" (1:24). Also, when increasing the amount of rest between exercise attempts, learning improves significantly and develop it (3:210). And rest "is the period of time that is given to the athlete with the intention of helping him to regain his practical ability to be able to continue performing and participating in the exercise effectively" (2:135). In this type of exercise, the learner gets complete rest, which aims to restore the learner to his full strength after the physical performance, so that he is ready to perform again with the same strength and without hindrance (267:4).

#### 5. Conclusions and recommendations

##### 5.1 Conclusions

1. The results showed that the use of the distributed and intensive methods has a positive and effective effect on learning the skill of ascending by pronation on the horizontal bar.
2. The results showed that learning according to the distributed method with the presence of rest periods has a great role in learning the skill of ascending on the horizontal bar more than the intensive method.

##### 5.2 Recommendations

1. Directing teachers and trainers to introduce the distributed method within the educational curriculum to teach skills in the faculties of physical education and sports sciences for the purpose of learning other skills in

gymnastics.

2. The need to use the method distributed according to the scientific organization of rest periods between exercises and between educational units for the purpose of obtaining speed in acquisition and effective learning.

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