spaced and massed practice teaching method in some The effect of type of passing and dribbling in football

Talha Khanafdl Omar
Department of physical education and sport science Faculty of education – Soran University
Talha.omar@pe.soran.edu.iq

Dr. Hasan T. Al-Tawil
college of physical education and sport science Mutah University
hasanhr@mutah.edu.jo

استلام البحث : ٢٠٢٣/٧/٢٣
قبول البحث : ٢٠٢٣/٧/٣٠

Abstract

The major purpose of this study was to determine the effects of spaced and massed practice teaching methods in some type of passing and dribbling skills in football. The two researcher adopted an experimental design known as the design of two equal groups with two pre- and post-tests. The two researcher used passing and dribbling skills tests to collect data from 24 students in the first stage of the department of physical education and sport sciences at Soran University: 12 students for the spaced group and 12 students for the massed group, the two researcher used SPSS to analyze the data. After analyzing the data, the two researcher communicated the most important results: in both groups, significant differences were observed in passing and dribbling skills in favor of the post-test, but when comparing the post-test results of both groups, significant differences were observed in short passing, medium passing, and dribbling with 3 cones in favor of the spaced group. The results of the current study confirm that the spaced teaching method is more effective for teaching and improving football skills. According to the current research results, it is better to arrange the educational curriculum at colleges of physical education in spaced instead of massed.

Key words: spaced, massed, Passing, Dribbling.

تأثير طرائق تدريس الممارسة المتباعدة و المجتمعة في بعض انواع المناولة والمراوغة بكرة القدم

م. طلحه خان افدل عمر
قسم التربية البدنية و العلوم الرياضية - كلية التربية – جامعة سوران

أ. د. حسين طلال الطويل
كلية التربية البدنية و العلوم الرياضية - جامعة موتة

الملخص

كان الغرض الرئيسي من هذه الدراسة هو تحديد تاثير طرائق تدريس الممارسة المتباعدة والمجتمعة في بعض أنواع المناولة والمراوغة في كرة القدم. اعتمد الباحثان تصميمًا تجريبيًا يعرف باسم تصميم مجموعتين متكافئين ذات اختبارين قبلي وبعدي. استخدم الباحثان اختبارات المناولة والمراوغة لجمع البيانات من ٢٤ طالبًا في المرحلة الأولى من قسم التربية البدنية وعلوم الرياضة بجامعة سوران: ١٢ طالبًا للمجموعة المتباعدة و ١٢ طالبًا للمجموعة المجمعة ، واستخدم الباحثان SPSS لتحليل البيانات. بعد تحليل البيانات ، بعد تحليل البيانات توصل الباحثان لاهم النتائج وجود فروق ذات دلالة إحصائية في بعض أنواع المناولة والمراوغة لصالح الاختبار البعدي ، ولكن عند مقارنة النتائج البعدي لكلا المجموعتين ، فيما ظهرت فروق ذات دلالة إحصائية في التمرير القصير ، والتمرير المتوسط ، والمراوغة بـ ٣ أقماع لصالح المجموعة المتباعدة. تؤكد نتائج الدراسة الحالية أن طريقة التدريس المتباعدة أكثر فاعلية في تعليم مهارات كرة القدم وتحسينها. وفقًا لنتائج البحث الحالية ، من الأفضل ترتيب المناهج التعليمية في كليات التربية البدنية على فترات متباعدة بدلاً من الجتمعة.

الكلمات المفتاحية : المتباعدة، المحشور, المناولة، الدحرجة.

1- Introduction:

The spaced teaching process is a powerful strategy that involves teaching courses in a spreading way; it boosts learning by spreading lessons and retrieval opportunities out over time, so learning is not crammed all at once. By returning to content every so often, students' knowledge has had time to rest and be refreshed. This method develops a consistent routine for memory retrieval, teaching the mind to quickly and automatically recall specific information. It describes a more spaced-out method where you study at intervals over time (1).

Massed practice is a learning method that is implemented without interrupting breaks between specified times. Some limitations on Massed Practice learning methods include the type of learning movement in which individuals or practice groups continue without any alternate activities between trials, in which the amount or duration of rest periods that given is very short or nonexistent (2)

Football is one of the fields of knowledge in the faculties and departments of physical education, whose teaching is not limited to the cognitive and skill aspects, but is based on a basic rule, which is the correct performance of the skill. In order to progress in this game, skills must be mastered and learned to reach a better level of learning, through their application in educational curricula that contain knowledge of sports activity and leadership from theoretical information in skill learning. Therefore, determining the best educational method for students is one of the methods that have a fundamental role in mastering the basic principles of learning skills.

In the game of football, passing the ball is an individual technical skill that every player must understand and get acquainted with (3). also one of the important basic capabilities a player is to master is dribbling, both through massed practice and distributed practice. Dribbling capability is important to master since it is impossible for a player to pass his rivals and enter rival's area without this capability. A team's victory is determined by individual player's foresight while dribbling into rival's area to feed his teammates. Dribbling capability may be supported with individual's good skill while dribbling with high accuracy. (4)

First-stage students in physical education and sports sciences faculties typically study foundational courses related to sports, physical activity, as part of their studies, students introduced to teaching basic football skills. This could involve hands-on practice and demonstrations to gain a better understanding of how to execute and teach techniques like passing and dribbling.

The teaching strategies used in physical education colleges are not a recent phenomenon. It was noted by the researcher during the teaching of football skills in the school of physical education that sometimes students are not learning the required motor skills very well. From my experience as a teacher in the department of physical education at Soran University, I have observed some problems associated with the use of teaching strategies that do not help students learning adequately. Actually, this result might be attributed to the teaching and learning process.

In this context, Physical Education is a complex process that is determined by various social, biological, and, critically, pedagogical influences. Researchers tell us that there are two main strategies that students learn after the teaching process. The first is called massed teaching, which results in massed practicing, which means practicing for

learning is done less frequently. Information memorized this way might be very likely to be forgotten once the students' practice is done. The second way is called distributed teaching, which results in distributed practicing, which means a more spaced-out method where students learning could be classified into intervals over time.

2- Purpose of the study:

The major purpose of the study was to determine and reveal the effect of two teaching methods with different periods among lessons on students' learning of passing and dribbling skills in football. This major purpose includes the following three objectives:

1. The effect of using the teaching and learning method without an interval time between lessons on students' learning of passing and dribbling skills (Massed)
2. The effect of using the teaching and learning method with an interval time between lessons on students learning of passing and dribbling skills (Spaced)
3. The difference between the utilization of the teaching learning method without an interval time between lessons and the teaching learning method with an interval time between lessons on students learning passing and dribbling skills

3- Method and procedures

3-1 Population and sample of the study

The research population was deliberately chosen from the first-stage students in the department of Physical Education and Sports Sciences at Soran University; the total population is 224 students. As for the research sample, it was chosen by the simple random method, which numbered 24 students by 12 students for each group, and by means of lots, the first experimental group was chosen using the spaced teaching method and the second experimental group used the massed teaching method.

Homogeneity and equivalence of the sample

The sample is basically homogeneous and equivalence in terms of age, height, mass, passing skill, dribbling skill, and physical fitness.

Table 1 shows the homogeneity and equivalence of the variables age, mass, and height between the two research groups.

variables	groups	N	Mean	Std. Deviation	Skewness	Kurtosis	T-test	P
Age	Spaced	12	٢٤٧.٣٧	٨.١٢	0.214	0.391	0.653	0.39
	Massed	12	٢٤٥.٩١	٧.٠٩	-0.562	-0.253		
Mass	Spaced	12	١٧٣.٥٩	٤.١٧	0.769	1.694	71٠.٠	0.89
	Massed	12	١٧١.٣٢	٤.٠٢	0.684	-١.٠٨١		
height	Spaced	12	٧٠.٣٤	٣.٧٥	0.652	0.743	0.112	0.87
	Massed	12	٦٨.٩٥	٣.٩٧	-0.437	1.421-		

It is clear from Table (1) that:

Homogeneity: The values of skewness for the variables of age, mass, and height were confined to (±1) and the values of Kurtosis were confined to (±2). These two indicators are considered homogeneous for the spaced and massed groups in all variables.

Equivalence: The P values of the (t) test were greater than (0.05) in the variables of age, mass, and height, and this indicates that there are no significant differences between the members of the spaced and massed groups, and this is an indication of the equivalence of the members of the spaced and massed groups in the variables of age, mass, and height.

Table 2 shows the homogeneity and equivalence of the two research groups in physical fitness variables.

variables	groups	N	Mean	Std. Deviation	Skewness	Kurtosis	T-test	P
Speed performance	Spaced	12	57.08	7.19	0.187	0.836	0.79	0.43
	Massed	12	55.16	4.34	0.179	-0.732		
Agility	Spaced	12	21.74	0.90	-0.158	-1.183	1.32	0.19
	Massed	12	21.24	0.91	-0.391	0.141		
muscular capacity of legs	Spaced	12	2.32	0.12	0.175	-1.669	1.31	0.20
	Massed	12	2.42	0.22	-0.479	-0.213		
transitional speed	Spaced	12	4.29	0.26	0.275	-0.093	1.05	0.30
	Massed	12	4.38	0.15	-0.306	1.789		

It is clear from Table (2) that:

Homogeneity: The values of skewness for all selected physical fitness variables in the above table were confined to (±1) and the values of Kurtosis were confined to (±2). These two indicators of the homogeneity of the two groups in all physical fitness variables.

Equivalence: The P values of the t-test were greater than (0.05) in all physical variables, and this indicates that there are no significant differences between the members of the spaced and massed groups, and this is an indication of the equivalence of the members of the spaced and massed groups in the selected physical fitness variables.

Table 3 shows the homogeneity and equivalence of the two research groups in football skills

variables	groups	N	Mean	Std. Deviation	Skewness	Kurtosis	T-Test	P
Short passing	Spaced	12	5.16	2.20	0.712	0.533	٠.11	0.90
	Massed	12	5.08	5.99	-0.225	0.190		
Medium passing	Spaced	12	9.58	1.78	-0.171	-1.158	1.81	0.08
	Massed	12	8.00	2.44	0.351	-1.097		
Dribbling 3	Spaced	12	16.41	2.06	-0.075	-1.587	.106	0.91
	Massed	12	16.33	1.77	0.189	-0.667		
Dribbling 10	Spaced	12	21.10	2.64	-0.452	0.777	-1.28	0.21
	Massed	12	22.56	2.92	-0.860	-0.097		
	Massed	12	4.41	1.56	0.255	-0.996		

It is clear from Table (3) that:

Homogeneity: The values of skewness for all selected football skill variables in the above table were confined to (±1) and the values of Kurtosis were confined to (±2). These two indicators are considered to be homogeneous for the members of the two groups in all football skills.

Equivalence: The P values of the (t) test were greater than (0.05) in all skill variables, and this indicates that there are no significant differences between the members of the spaced and massed groups, and this is an indication of the equivalence of the members of the spaced and massed groups in selected football skills.

3-2 Experimental Design

The researcher adopted the experimental design, which is known as the Design of two equal groups with pre and post test. The use of an appropriate experimental design is important in every experimental research project because it helps in obtaining answers to the research hypotheses. The process of choosing the experimental design for research is necessary in every Experimental research project because it provides the researcher with the means to reach the required results (Muhammed, 1997, P. 12). This can be illustrated in Figure 1.

Groups	**Pre-test**	**Independent variables**	**Post-test**
1st experimental	passing and dribbling skill	**Massed**	Passing and dribbling skill
2nd experimental		**spaced**	

Figure 1

Demonstrates the experimental design of the research

3-3 Variables studied:

Independent variables: spaced teaching method and massed teaching method.

Dependent variables: passing and dribbling skill.

3-4 Tests used:

- Running with the ball (rolling) 3 cones
- Running with the ball (rolling) 10 cones
- short passing.
- medium passing.

The basic skills of football were identified by using scientific references and previous studies in the field of football and presenting them in the form of a questionnaire to a group of experts and specialists in the fields of teaching methods, and football science, as well as the most appropriate test for each skill. After collecting the questionnaire forms and according to the percentage of agreement of the specialists, the basic football skills that will be included in the teaching curriculum were nominated, which are passing and dribbling the ball, and the appropriate skill tests to measure these skills, which got an agreement rate of 75% or more from the opinions of experts and specialists.

A- Validity of the skill tests: The validity of the tests was verified by obtaining the skill tests in the research with an agreement percentage of 75% or more. In addition, the self-validity of these tests was found by calculating the square root of the test stability coefficient.

B- Reliability of skill tests: The researchers extracted the reliability by using the method of applying the test and re-applying it. The tests were conducted on a sample of (6) students from the research population, and the test was re-conducted on the same sample ten days after applying it for the first time, and a simple correlation coefficient was found between the degrees of the first application and the second application, and through it, the stability coefficient was found, and the tests achieved a high stability coefficient as shown in table number (4).

Table 4: shows the coefficients of validity and reliability for skill tests

Skill tests	Unit measurement	**reliability**	**Validity**
Short passing	degree	**21٠.٨**	**896.0**
Medium passing	degree	**59٠.٨**	**31٠.٩**

Dribbling 3	second	**74٠.٧**	**0.913**
Dribbling 10	second	**0.861**	**0.851**

3-5 Final Research Experience:

After conducting the exploratory experiment and avoiding the obstacles and difficulties facing the research and after conducting a pretest, the main experiment was conducted, which extended from 06/02/2022 to 05/04/2022, on the two groups using the same educational material after making equivalence between them in a number of variables that were mentioned above, and the educational curricula were applied to the members of the two research groups.

4. Presentation, analysis and discussion of results

4.1 Presentation, analysis and discussion of the results related to the first research question:

Question # 1: 1. Is there an effect of using the teaching learning strategy without an interval time (massed practice) between lessons on students learning some basic football motor skills?

4.1.1 Presentation and analysis of the results related to the first research question:

Usable data from (12) participants from massed group were analyzed using mean, standard division and paired sample t-test as a suitable statistic for the natural of this research.

To answer first question, descriptive statistics were applied (Paired t- test). Comparison values of pre-test and post-test in table number 5.

Table (5)

A Paired t-test for the differences between the Pre test and Post test of the massed practice method for passing dribbling skills in football

Variable / Skills	Measurement tool / unit	N	Pre-Test		Post-Test		T-Value	P - Value
			X	sd	X	sd		
Short passing	degree	12	5.92	2.84	10.17	1.69	-5.826	0.000
Medium passing	degree	12	9.83	1.40	11.17	1.03	-7.091	0.000
Dribbling 3	Second & points	12	15.92	1.16	17.17	1.46	-3.362	0.006
Dribbling 10	Second	12	22.09	0.86	20.48	1.21	7.192	0.000

***Paired t-test performed, at the level of significance P < 0.05, degree of freedom (n-1=11)**

The table number (5) shows the results of the tests for passing and dribbling skills in football of pre-test and post-test, and the results showed that there were significant differences in the massed groups. As the arithmetic mean for the pre-test for the short passing test is (5.92) with a standard deviation (2.84). As for the post-test the arithmetic mean is (10.17) with a standard deviation (1.69) and after calculating the value of T calculated using the law of T for the correlated samples that were (-5.826) it is a function compared to the value of (sig) at the significance level (0.05) and degrees of freedom (11) amounting to (0.000) which is less than (0.05). This means that there is a statistically significant difference between pre-test and post-test in favor of the post test.

As for Medium passing skill test the arithmetic mean for the massed group in the pre-test is (9.83) with a standard deviation of (1.40). And for the post test the arithmetic mean is (11.17) with a standard deviation of (1.03). And after calculating the value of T calculated

using the law of T for the correlated samples that were (-7.091) it is a function compared to the value of (sig) at the significance level (0.05) and degrees of freedom (11) amounting to (0.000) which is less than (0.05). This means that there is a statistically significant difference between pre-test and post-test in favor of the post test.

As for dribbling skill with three cones which measured by second and point for this type of dribbling test arithmetic mean for the massed group in the pre-test is (15.92) with a standard deviation of (1.16). And for the post test the arithmetic mean is (17.17) with a standard deviation of (1.46). And after calculating the value of T calculated using the law of T for the correlated samples that were (-3.362) it is a function compared to the value of (sig) at the significance level (0.05) and degrees of freedom (11) amounting to (0.006) which is less than (0.05). This means that there is a statistically significant difference between pre-test and post-test in favor of the post test.

As for dribbling skill with ten cones which measured by second only for this type of dribbling test arithmetic mean for the massed group in the pre-test is (22.09) with a standard deviation of (0.86). And for the post test the arithmetic mean is (20.48) with a standard deviation of (1.21). And after calculating the value of T calculated using the law of T for the correlated samples that were (7.192) it is a function compared to the value of (sig) at the significance level (0.05) and degrees of freedom (11) amounting to (0.000) which is less than (0.05). This means that there is a statistically significant difference between pre-test and post-test in favor of the post test.

4.1.2 Discussing of the results related to the first research question:

As stated in table number (5) means, there were clear differences between the mean values in the pre-tests and post-tests for passing and dribbling football skills.The scores obtained were compared using the paired t-test statistics and are presented in Table 5, it is evident that there were significant differences ($\alpha \leq 0.05$) between the Pre and Post - test on passing and dribbling skills by using the massed teaching method. These results might be attributed to the fact that first stage student of the department of physical education of school of physical education at Soran university will learning and getting improvement of football skills when using any kind teaching method and teaching strategy but the size of learning or the amount of learning is different, as a researcher in this study was looking that which teaching method (spaced or massed) is more effective for teaching passing and dribbling football skills.

After analyzing and interpretation of the data, the study revealed a significant increase (P = 0.000) in short passing skill test of massed group, Also for medium passing skill test there is significance different observed because P value is (P= 0.000) it means student getting improvement in this skill, this is because during two month teaching student of first stage was learning and improvement in passing kill, similar result show that by (5) they reported absolute significant learning and improved of passing skill in experimental group, if independent variable is different, learning and improvement will happen but the size of learning will be different, my focus as a researcher was on the size of learning between two different teaching method.

In both test of dribbling skill there is significant different observed because p value is (P= 0.000) with three cones and (P= 0.006) with ten cones it means learning and improvement increase in post tests. Another research finding showed similar results which was done by (6) in the study (The Different Effects of Massed and Distributed Practice Method on Soccer Players' Dribbling Skill) they are reported massed group improved in dribbling skill is 11.44% but this percentage is less than of spaced practice because percentage of distributed practice is 22.02%.

While spaced practice is generally favored for long-term learning, massed practice can still have benefits in certain situations. For example, it can be useful for intensive skill development in a short period or when immediate performance gains are desired. This can be seen in studies like the one by (7).

4.2 Presentation, analysis and discussion of the results related to the second research question:

Question # 2: Is there an effect of using the teaching learning strategy with an interval time (spaced practice) between lessons on students learning some basic football motor skills?

4.2 Presentation and analysis of the results related to the second research question:

Usable data from (12) participants from spaced group were analyzed using mean, standard division and paired sample t-test as a suitable statistic for the natural of this research.

To answer second question, descriptive statistics were applied (Paired t- test). Comparison values of pre-test and post-test in table number 6.

Table (6) :A Paired t-test for the differences between the Pre-test and Post-test of the spaced practice method for passing and dribbling football skills

Variable / Skills	Measurement tool / unit	N	Pre-Test		Post-Test		T-Value	P – Value
			X	sd	X	Sd		
Short passing	degree	12	5.08	0.90	13.08	1.73	-16.781	0.000
Medium passing	degree	12	8.83	2.08	12.75	1.05	-9.839	0.000
Dribbling 3	Second	12	15.67	1.92	19.58	1.83	-17.110	0.000
Dribbling 10	Second	12	23.04	0.89	20.46	1.24	6.312	0.000

***Paired t-test performed, at the level of significance P < 0.05, degree of freedom (n-1=11)**

The table number **(6)** shows the results of the tests for the some basic football skills in the pre test and post tests, and the results showed that there were significant differences in the spaced groups. As the arithmetic mean for the pre-test for the short passing test is (5.08) with a standard deviation (0.90). As for the post-test the arithmetic mean is (13.08) with a standard deviation (1.73) and after calculating the value of T calculated using the law of T for the correlated samples that were (-16.781) it is a function compared to the value of (sig) at the significance level (0.05) and degrees of freedom (11) amounting to (0.000) which is less than (0.05). This means that there is a statistically significant difference between pre test and post test in favor of the post test.

As for Medium passing skill test the arithmetic mean for the massed group in the pre test is (8.83) with a standard deviation of (2.08). And for the post test the arithmetic mean is (12.75) with a standard deviation of (1.05). And after calculating the value of T calculated using the law of T for the correlated samples that were (-9.839) it is a function compared to the value of (sig) at the significance level (0.05) and degrees of freedom (11) amounting to (0.000) which is less than (0.05). This means that there is a statistically significant difference between pre test and post test in favor of the post test.

As for dribbling skill with three cones which measured by second for this type of dribbling test arithmetic mean for the spaced group in the pre-test is (15.67) with a standard deviation of (1.92). And for the post test the arithmetic mean is (19.58) with a standard deviation of (1.83). And after calculating the value of T calculated using the law of T for the correlated samples that were (-17.110) it is a function compared to the value of (sig) at the significance level (0.05) and degrees of freedom (11) amounting to (0.000) which is less

than (0.05). This means that there is a statistically significant difference between pre-test and post-test in favor of the post test.

As for dribbling skill with ten cones which measured by second for this type of dribbling test arithmetic mean for the massed group in the pre-test is (23.04) with a standard deviation of (0.89). And for the post test the arithmetic mean is (20.46) with a standard deviation of (1.24). And after calculating the value of T calculated using the law of T for the correlated samples that were (6.312) it is a function compared to the value of (sig) at the significance level (0.05) and degrees of freedom (11) amounting to (0.000) which is less than (0.05). This means that there is a statistically significant difference between pre-test and post-test in favor of the post test.

4.2.2 Discussing of the results related to the second research question:

As stated in table number (6) means, there were clear differences between the mean values in the pre tests and post tests for passing and dribbling football skills. The scores obtained were compared using the paired t-test statistics and are presented in Table 6, it is evident that there were significant differences ($\alpha \leq 0.05$) between the Pre-test and Post-test on passing and dribbling skills by using the spaced teaching method. These results might be attributed to the fact that first stage student of the department of physical education of school of physical education at Soran university will learning and getting improvement of football skills when using any kind teaching method and teaching strategy but the size of learning or the amount of learning is different as a researcher I am looking for that which teaching method is more effective.

According to results of spaced group, there are significant differences between the results of the passing and dribbling skills tests of spaced groups. Therefore, I refer the reasons for these differences in passing and dribbling skills to the effectiveness of the educational plans applied to the students of the spaced groups who use the spaced method. Also, the choice of exercises aimed at teaching these skills and the organization of the skills listed in each teaching plan. Moreover, the optimal investment of real time allocated to the implementation of motor duty, which leads to an increase in real practice by participating in the performance of all students, which has led to an increase in movement and activity and learning these skills. (8) confirm that the use of lesson time to increase performance and motor skills will allow learners to develop many physical, motor and motor skills. The ability to stabilize this learning is not an easy process, so it is necessary to practice correctly.

After analyzing and interpretation of the data, the study revealed a significant increase (P = 0.000) in short passing skill test of massed group, Also for medium passing skill test there is significance different observed because P value is (P= 0.000) it means student getting improvement in this skill, this is because during two month teaching student of first stage was learning and improvement in short passing kill, similar result show that by (9) in the study “the effect of exercises with interactive tools in learning passing and scoring skills of futsal for students” they reported absolute significant learning and improved of passing skill in experimental group, if independent variable is different, learning and improvement will happen but the size of learning will be different, my focus as a researcher was on the size of learning between two different teaching method. Another recent research which was done by (10) in the study “The Effect of Different Methods of Distribution and Methods Massed to The Passing Down Skills Volleyball of Game” they are reported absolute significant influence (P<0.05) in passing bawah skill in volleyball.

Distributed practice, also known as spaced practice or spaced repetition, has been found to have positive effects on learning and skill acquisition, including the development of short passing skills in football.

4.3 Presentation, analysis and discussion of the results related to the third research question:

Question # 3: Is there statistically significant differences at the level of significance ($\alpha \leq 0.05$) between the usage of two teaching strategies with a time interval between lessons and without a time interval between lessons on students learning some basic football skills in favor of spaced strategy (with an interval time between lessons) ?

4.3.1 Presentation and analysis of the results related to the third

Usable data from (24) participants 12 from massed group and 12 from spaced group were analyzed using mean, standard division and independent sample t-test as a suitable statistic for the natural of this research.

To answer this question, descriptive statistics were applied (independent sample t-test). Comparison values of post-test of massed group and post-test of spaced group in table number 3.

Table 7: it show that independent t-test for the differences between the post test of massed group and Post test of the spaced group for some basic football skills

Variable / Skills	Measurement tool / unit	N	Massed		Spaced		T- Value	P – Value
			X	Sd	X	sd		
Short passing	degree	12 +12	10.17	1.69	13.08	1.73	- 4.17	0.000
Medium passing	degree	12 +12	11.17	1.03	12.75	1.05	- 3.72	0.001
Dribbling 3	Second	12 +12	17.17	1.46	19.58	1.83	- 3.56	0.002
Dribbling 10	second	12 +12	20.48	1.21	20.46	1.24	- 0.03	0.974

***Independent sample t-test performed, at the level of significance P < 0.05, degree of freedom (n-2=22)**

The table number **(3)** shows the results of the tests for some basic football skills between post-test of massed group and post-tests of spaced group, and the results showed that there were significant differences in all skills listed in the table number (3) except dribbling skills with ten cones which measured by second. As the arithmetic mean of post-test of massed group for short passing skill test is (10.17) with a standard deviation (1.69).

As arithmetic mean of post-test of spaced group for short passing skill is (13.08) with a standard deviation (1.73) and after calculating the value of T calculated using the law of T for the independent samples that were (-4.17) it is a function compared to the value of (sig) at the significance level (0.05) and degrees of freedom (22) amounting to (0.000) which is less than (0.05). This means that there is a statistically significant difference between post-test of massed group and post-test of spaced group for short passing skill in favor of the spaced group.

As for Medium passing skill test the arithmetic mean of post-test of massed group for Medium passing skill test is (11.17) with a standard deviation (1.03). As arithmetic mean of post-test of spaced group for Medium passing skill is (12.75) with a standard deviation (1.05) and after calculating the value of T calculated using the law of T for the independent samples that were (-3.72) it is a function compared to the value of (sig) at the significance level (0.05) and degrees of freedom (22) amounting to (0.001) which is less than (0.05). This means that there is a statistically significant difference between post-test of massed group and post-test of spaced group for Medium passing skill in favor of the spaced group.

As for dribbling skill with three cones which measured by second and point for this type of dribbling test arithmetic mean of post-test of massed group for dribbling skill test with three cones is (17.17) with a standard deviation (1.46). As arithmetic mean of post-test of spaced group for dribbling skill test with three cones is (19.58) with a standard deviation (1.83) and after calculating the value of T calculated using the law of T for the independent samples that were (-3.56) it is a function compared to the value of (sig) at the significance level (0.05) and degrees of freedom (22) amounting to (0.002) which is less than (0.05). This means that there is a statistically significant difference between post-test of massed group and post-test of spaced group for dribbling skill test with three cones in favor of the spaced group.

As for dribbling skill with ten cones which measured by second only for this type of dribbling test arithmetic mean of post-test of massed group for dribbling skill test with ten cones is (20.48) with a standard deviation (1.21). As arithmetic mean of post-test of spaced group for dribbling skill test with ten cones is (20.46) with a standard deviation (1.24) and after calculating the value of T calculated using the law of T for the independent samples that were (-0.03) it is a function compared to the value of (sig) at the significance level (0.05) and degrees of freedom (22) amounting to (0.974) which is greater than (0.05). This means that there is statistically no significant difference between post-test of massed group and post-test of spaced group for dribbling skill test with ten cones.

4.3.2 Discussing of the results related to the third research question:

In the current study, we compared the effectiveness between a distributed teaching schedule and a massed teaching schedule on learning basic football skill. The results show that, distributed teaching schedule consisting of inter-trial intervals of 2 days between first lesson and second lesson in the week during two months more effectively for learning basic football skills than massed teaching schedule consisting of zero-day inter-trial intervals between first lesson and second lesson in the week during two months. the results of table (7) showed there are statistically significant differences between the scores of the spaced groups and the massed group in passing and dribbling skills except dribbling skill with ten cones of football in favor of the spaced group applied in the spaced teaching schedule.

(11) motioned there are at least three possible reasons why the distribution of practice sessions across more days leads to better learning than massing the sessions within fewer days. One is that fatigue negatively influences learning for massed practice schedules. Although none of the experiments discussed in this section assessed participants' levels of fatigue, it is possible to suspect that fatigue influenced learning because of the task performance requirements.

Second reason, the massing of practice within a day or a few days may reduce the amount of cognitive effort used on each trial as practice continues beyond a certain critical amount. The massing of practice trials may institute a practice condition in which performance of the skill on each trial becomes so repetitious that it becomes monotonous or boring. As a result, the learner begins to decrease the amount of cognitive effort involved in each trial, which in turn diminishes the level of learning.

The third reason relates to memory consolidation, which is a long term memory storage process. The memory consolidation hypothesis proposes that to store in memory the relevant information we need to learn a skill, certain neurobiochemical processes must occur.

Overall, the result of current study and results of most previous study confirm that spaced teaching schedule more effectiveness for learning and improvement on sport skills, according to scientific results had better arranging educational curriculum at school and colleges distributed instead of massed.

Conclusions

Based on the results of this study, the researchers concluded that:

1. A strategy teaching learning that used (massed practice) without an interval time has a positive effect on students' learning some basic skills in football (short passing, medium passing, dribbling 3, dribbling 10)
2. A strategy teaching learning that used (spaced practice) with an interval time has a positive effect on students' learning some basic skills in football (short passing, medium passing, dribbling 3, dribbling 10)
3. A strategy teaching learning that used (spaced practice) with an interval time is more effective than the strategy teaching learning that used (massed practice) without an interval time in learning some basic football skills (short passing, medium passing, dribbling 3, dribbling 10)

References

1. Agarwal, P. K., Roediger, H. L., McDaniel, M. A., & McDermott, K. B. (2013). How to use retrieval practice to improve learning. Saint Louis, MO: Washington University in St. Louis.
2. 9.Kamaruddin, I., Tangkudung, J., & Dlis, F. (2019, April). Application of Massed Practice Method and Motoric Ability to Fencing Martial Skills. In 1st International Conference on Advanced Multidisciplinary Research (ICAMR 2018) (pp. 145-147). Atlantis Press.
3. Vembiarto, E. G., & Lismadiana, M. (2018, December). The Effect of Various Passing Exercise and Ankle Coordination on the Accuracy of Short Passing in Football. In 2nd Yogyakarta International Seminar on Health, Physical Education, and Sport Science (YISHPESS 2018) and 1st Conference on Interdisciplinary Approach in Sports (CoIS 2018) (pp. 322-326). Atlantis Press.
4. Kuncoro, B., TW, R. A., & Santosa, T. (2021). The Different Effects of Massed and Distributed Practice Method on Soccer Players' Dribbling Skill. International Journal of Multicultural and Multireligious Understanding, 8(5), 109-113.
5. Hussein, B. R. A., Kadhim, H. M., & Ibrahim, A. P. D. T. Y. (2021). THE EFFECT OF EXERCISES WITH INTERACTIVE TOOLS IN LEARNING PASSING AND SCORING SKILLS OF FUTSAL FOR STUDENTS. *PalArch's Journal of Archaeology of Egypt/Egyptology*, *18*(7), 393-403.
6. 11. Kuncoro, B., TW, R. A., & Santosa, T. (2021). The Different Effects of Massed and Distributed Practice Method on Soccer Players' Dribbling Skill. *International Journal of Multicultural and Multireligious Understanding*, *8*(5), 109-113.
7. Bjork, E. L., & Bjork, R. A. (2006). Optimizing treatment and instruction: Implications of a new theory of disuse. In L-G. Nilsson & R. A. Bjork (Eds.), Learning, remembering, believing: Enhancing human performance (pp. 255-308). Psychology Press.
8. Gréhaigne, J. F., & Godbout, P. (2013). Collective variables for analysing performance in team sports. In *Routledge handbook of sports performance analysis* (pp. 119-132). Routledge.
9. Hussein, B. R. A., Kadhim, H. M., & Ibrahim, A. P. D. T. Y. (2021). THE EFFECT OF EXERCISES WITH INTERACTIVE TOOLS IN LEARNING PASSING AND SCORING SKILLS OF FUTSAL FOR STUDENTS. *PalArch's Journal of Archaeology of Egypt/Egyptology*, *18*(7), 393-403.
10. Saleh, M. S., Syahruddin, S., & Saleh, M. S. (2023). The Effect of Different Methods of Distribution and Methods Massed to The Passing Down Skills Volleyball of Game. *Journal Coaching Education Sports*, *4*(1), 71-82.
11. 19. Magill, R. A., & Anderson, D. (2016). The classification of motor skills. *Motor Learning and Control: Concepts and Applications; McGraw-Hill Education: New York, NY, USA*, 2-25.