

## COMPETITIVE PERFORMANCE EXERCISES TO DEVELOP TRANSITIONAL SPEED AND AGILITY AND THEIR IMPACT ON SOME OFFENSIVE AND DEFENSIVE BASKETBALL SKILLS FOR STUDENTS

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### Abstract

The research aims to prepare competitive performance exercises, then know their impact on transitional speed and agility, and then find out the effect of folding these two qualities in some offensive and defensive skills of basketball. The researcher used the experimental curriculum on a randomly picked sample of students of the fourth stage of Al-Mustansiriyah University and put them in two equal groups one is experimental and the second is controlled, with 24 students which is 18.18% the research community of (110) students. The exploratory experiment and the pre and posttest for the variables of the research were conducted, in addition to the main experiment, which lasted (10) weeks, and the research lasted from 18/11/2021 to 23/2/2022. In addition to the appropriate statistical means. The researcher concluded that the competitive exercises of the performances influence developing the transitional speed and agility, as well as it proved its effect on all research variables, the research variables showed differences in favor of the experimental group in the posttests, a development was showed in the control group but not at the level of the experimental group in the research variables.

**Keywords:** Competitive exercises. Transitional speed. Agility. Handling. Plump. Defender movement. Basketball.

### Introduction

Basketball game is one of the team games that has speed and agility, it is a competitive and suspenseful fun game for its diverse offensive and defensive skills (Al-Selmi et al., 2019). which made it a scientific subject taught and learned in the faculties of sports education, students should learn and perform it with transitional speed and agility being the basis of performance (Ahmed, 2015; Mahmoud & Fouad, 2021). The importance of the research is reflected in the development of these two qualities because they have a significant role in influencing performance skills using exercises developed for this purpose (Hassan et al., 2019).

Basketball game is one of the team games that is characterized by speed and agility, it is one of the most practiced games as a competitive and exciting game for including many diverse skills like offensive and defensive, and this is what made it a scientific subject taught and learned in the curriculum of all faculties of physical education and sports sciences, students should learn it and perform it in line with the course of fast play and agile play in matches, this is possible through the physical elements that students have which enables them to perform, these elements include transitional speed and agility, as they are the basis for achieving what the performance requires (Alwan, 2022a).

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The importance of research is in the development of these two qualities because they have a major role in influencing the performance of the game skills, and this is through using exercises developed for this purpose in order to build a good base for students and to be a help to teachers in scientific lessons in colleges (Alwan, 2022b; Hayder et al., 2022).

### Research problem

Through the experience of the researcher in the field of the game, being a teacher of basketball subject and following the scientific lessons of some faculties of physical education and sports sciences like the AL-Mustansiriyah University, she noticed that the exercises given within practical lessons are performed in a traditional individual distant way as it is in the game, but it must be given in an environment and a similar competitive method in line with the real skill performance in matches, as it is impacting the development of the physical ability in a positive way from one side and from the other side it develops main skills of the game, whether they were offensive or defensive (Table 1).

### Methodology and Methods

Search aims to Preparing competitive basketball exercises for students, Knowing the effect of competitive exercises performance on the transitional speed and agility for students, and the development of transitional speed and agility affects some offensive and defensive basketball skills for students.

### Research hypotheses

H1: Competitive exercise performance has an impact on the transitional speed and agility of the basketball students.

H2: The development of transitional speed and agility impacts some offensive and defensive basketball skills for students.

### Sample

The research community has been identified as 130 students of the fourth stage - the Faculty of Physical Education and Sports Sciences - the University of Mustansiriyah, which is divided into four divisions (A,B,C,D) and after the exclusion of the female students from Division A, the total number became (20) students, and the research community became (110) students, And in

a random way, which is the latest method of selection, the division D was selected to be the experimental sample with (12) students selected randomly and division B To be the controlled sample with (12) students as well, so the sample was made of (24) students which is 18.18% of the research community, and to ensure the randomness of differences in the research variables, the researcher conducted equivalence between the experimental and controlled samples, where they were proved equal as shown in table 1.

Table (1) the parity of the experimental and controlled samples in the research variables

At indication level (0.05), freedom degree (24-2=22) and scheduling degree (2.07)

**Methods and tools for collecting information:** Arabic and foreign sources, Physical and skill test, Form for registration and unloading of data, Helping staff, Basketball court, basketballs, whistles, stopwatches total (2), leather measuring tape, Prominent points, a wall with circles drawn on it.

**Field procedures for research:** The following procedures has been made A range of competitive performance exercises have been prepared, The sample was identified as fourth-stage students (Hussein et al., 2022). Preparing all the needs to get the training unit out (Alwan, 2021). Preparing the helping staff and Identifying the physical and skill tests and their tools and they were: (Transitional Speed Test (6 :94), Agility test (4: 34), Pectoral handling test (8 :379-381), High plump test (9 : 168) and Defender's Movement (2:63)) (Raad, 1995). Executing a pilot experiment (Hussein & Salih, 2022). Performing pretests (Aya, 2018). Applying exercises prepared by the researcher in the main part of the class (Moayad et al., 2018). Performing posttests and Processing statistical results (Amer, 2011).

**Pilot experiment:** The team conducted the pilot experiment with the supervision of the researcher on Sunday, 21 November 2022 on a sample of students of the fourth stage Division C with (8) students that were randomly selected, and the purpose was to benefit from it as much as possible and to follow all the researcher's level in the main experiment (Samoum, 2014).

**Pretests:** The team conducted the pre-experiment with the supervision of the researcher on Thursday, 18 November 2021 on the experimental and controlled research sample, which included physical and skill tests and to

both groups, Where the researcher sought to prepare and install what can be installed for its availability in the post-tests (Ali, 2013).

**Exercises application (the main experience):** The exercises were applied in the practical lessons for the students, where the aim was to develop some physical and skill abilities, if the application of these exercises continued for (10) ten weeks and in fact one unit and according to the schedule (Thursday) of each week, where the period was allocated between (20-30) minutes within the special section of the practical lesson and the implementation of the exercises began on 25/11/2021 to 27/1/2022.

**Post-tests:** The posttests were conducted by the helping team and supervised by the researcher on Thursday, February 3. 2022. and followed the same procedures in pre-tests.

**Results**

**Presentation and analysis the results**

Presentation of transitional speed, agility, and some offensive and defensive basketball skills for the pre and posttests of the experimental group (Table 2).

Indication level is (0.05), degree of freedom (12-1=11) and tabular score of (2.07).

Table 2 shows the search variables for the experimental group, where the arithmetical mean of transitional speed was (6.10) and its deviation (0.82) while in post-tests it was (4.92) and its deviation (0.05), with difference in arithmetic means of (1.18) and deviation of (0.59) and the calculated t value was (7.71).

This presentation continues all research variables (agility, pectoral, high plump, and defender's movement)

When comparing all the calculated values of the variables, it was found that it was more than the value of calculated tabular t which is (2.07) and this indicates an impact of the competitive exercises developed by the researcher because of the difference between the pre and posttests.

**Presentation of transitional speed, agility, and some offensive and defensive basketball skills for pre and posttests for the control group.**

Table 3 shows the research variables for the control group, where the arithmetic mean of the transitional speed was (6.14) with deviation of (0.61). while in the post-tests, it was (5.66), with a deviation of (0.65), and the difference in means amounted to (0.48) and deviation of (0.27). The calculated (T) value amounted to (6.72). This presentation continues all research variables, and when comparing all the calculated values of the variables, it is found to be more than the tabular t value of (2.07), indicating an impact of the exercises used by the teacher in practical lessons (Table 3).

**Presenting the results of transitional speed, agility, and some offensive and defensive skills in basketball for the post-test for the experimental and control group**

Table 4 shows the research variables for the experimental and control groups in the post post-tests in all the research variables, where the arithmetic mean for the post-experimental group was (4.92) and with a deviation of (0.50), while the arithmetic mean for the control group was (5.66). With a deviation of (0.65), the calculated value of (T) was (3.44). This presentation continues on all other research variables, and when comparing all the calculated T values of the variables, it was found that they are greater than the tabular T value of (1.72), this indicates that there is an effect of the competitive exercises developed by the researcher as a result of the differences between the post-tests for the two groups and in favor of the experimental group (Table 4).

**Table 1:** The parity of the experimental and controlled samples in the research variables.

Variables	Unit of measurement	Experimental Group		Control Group		Calculated t value	Indication
		S	P	S	P		
Transitional speed	Second	6.10	0.82	6.14	0.61	0.13	Random
Agility	Second	18.72	1.43	18.86	1.29	0.27	Random
Pectoral handling	Degree	9.86	1.06	9.80	0.86	0.18	Random
High plump	Second	6.85	0.92	7.19	0.70	0.97	Random
Movement of defender	Second	10.24	1.17	10.39	0.94	0.38	Random

**Table 2:** It shows the variables, the unit of measure, the arithmetic means and it's deviations, the difference of the means and deviations, and the value of (t) calculated for the pre and post tests of the experimental group.

Variables	Unit of measurement	Tribal tests		Remote tests		Q	Pq	Calculated t value	indication
		S	P±	S	P±				
Transitional speed	Second	6.10	0.82	4.92	0.50	1.18	0.59	7.71	Moral
Agility	Second	18.72	1.43	17.01	1.28	1.71	0.64	10.21	Moral
pectoral handling	Degree	9.86	1.06	12	1.19	2.13	0.83	9.90	Moral
High plump	Second	6.8	0.92	5.30	0.56	1.55	0.65	8.35	Moral
Defender's Movement	Second	10.24	1.17	8.71	0.72	1.52	0.79	7.42	Moral

**Table 3:** The unit of measurement, the arithmetic means and their deviations, the difference of the means and deviations, and the value of (t) calculated for the pre and posttests of the control group.

Variables	Unit of measurement	pretests		posttests		Q	Pq	Calculated t value	indications
		S	P±	S	P±				
Transitional speed	Second	6.14	0.61	5.66	0.6	0.48	0.27	6.72	Moral
Agility	Second	18.86	1.29	17.89	1	0.96	0.60	6.16	Moral
pectoral handling	Degree	9.80	0.86	10.73	1.3	0.93	1.16	3.10	Moral
High plump	Second	7.19	0.70	6.35	0.6	0.84	0.59	4.85	Moral
Defender's Movement	Second	10.39	0.94	9.47	1.1	0.92	0.63	5.65	Moral

At indication level (0.05), freedom degree (12-1=11) and tabular score (2.07)

**Table 4:** Shows the variables, the unit of measurement, the arithmetic means and its deviations, the difference in means and deviations, and the value of (t) calculated for the post-test for the experimental and control group.

Variables	Unit of measurement	Pre group		Post group		Calculated t value	indications
		S	P±	S	P±		
Transitional speed	Second	4.92	0.50	5.66	0.65	3.44	Moral
Agility	Second	17.01	1.28	17.89	1.00	2.09	Moral
Pectoral handling	Degree	12.00	1.19	10.73	1.38	2.67	Moral
High plump	Second	5.30	0.56	6.35	0.62	3.25	Moral
Defender's Movement	Second	8.71	0.72	9.47	1.16	2.12	Moral

At indication level (0.05), freedom degree (24-2=22) and tabular score (1.72)

### Discussions of the results

Table 2, which is related to the experimental group, shows that there is an effect of competitive performance exercises, and this is what was shown by the differences between the pre and posttests, as well as the post post-tests with the control group and for all research variables represented by transitional speed, agility, pectoral handling, high plump in addition to the defenders movement, which are attributed to the competitive performance exercises prepared by the researcher and implemented by the teacher in the practical lessons and under her supervision, which included fast running in various situations, distances, times and different intensities, as the control over them was through the gradation in this intensity, as was the repetition and rest period that was given when applying the transitional speed exercises and it was suitable to the physical effort done when performing Varied distance running, as Raad Jaber stresses on "the necessity of developing speed, especially the transitional speed" (107:2) The fact that the motor performance of basketball skills requires that all students be characterized by demonstrating high speed when performing.

In addition to that, the agility exercises, which consisted of running between the poles, shuttle running, moving diagonally, as well as changing direction according to the signal and its opposite, which was carried out in a competitive way, leading to the development of this trait firstly and then affecting the performance of the skills of the game in question secondly, as } gility exercises play a positive role in advancing the level of sports skills and specialized and different game situations } (5:336).

As for the control group, it achieved moral results and development in the research variables due to the exercises set by the teacher of the subject, and this is what was showed in table (3) but not at the level of development of the experiment group, which was showed in table (2), as well as what was showed in table (4) which proved the difference of development in variables for the benefit of the experiment group.

### Conclusions and recommendations

#### Conclusions

1. The presence of an impact of competitive performance exercise in the development of transitional speed and agility and this has been proven to have an impact by developing all the research variables of the experiment group
2. The emergence of differences in all the physical and skill research variables in the post-tests and in favor of the experimental group, this is a clear indication of the impact of competitive performance exercises.
3. There is an effect of the exercises developed by the teacher of the control group and on all the variables of the research but not at the level of the experiment group.

#### Recommendations

1. The need to benefit from the exercises prepared by the researcher in practical lessons after she proved her effective role in development.
2. Emphasizing basketball teachers to use competitive performance exercises in line with the specificity of performing basketball game during the matches.
3. Working on developing transitional speed and agility for its effective role in the offensive and defensive skill performance in line with the specificity of each skill.

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## Appendix

Appendix 1 Model for exercise application Applied Unit: First Month: 1<sup>st</sup> Time: 20-30 minutes Week: 1<sup>st</sup> Venue: College's Inner Hall day and Date: Thursday/ 25/11/2021.

Main goal: developing transitional speed and agility in a competitive performance

<b>t</b>	<b>Exercise</b>	<b>intensity</b>	<b>Size (Repetition)</b>	<b>Comfort between repetitions</b>	<b>Comfort between totals</b>	<b>Total performance time</b>
1	Standing under the basket, and when you hear the whistle, start running fast to the end of the field (28 meters).	85%	3*28 m	90seconds	-	290 seconds
2	Sit on fours, and when you hear the whistle, run fast for 20 meters.	85%	4*20 m	45 seconds	-	200 seconds
3	Long seating, when you hear the whistle, fast running fro 30 m.	85%	3*30 m	90 seconds	-	300 seconds
4	fast running between a number of 8 poles till mid-field done in two groups, one after the other.	85%	5*15 m	45 seconds	-	260 seconds
5	Standing and hearing the whistle and running in different directions numbered in advance and performing in the form of two groups one after the other	85%	4*30 <sup>th</sup>	60 seconds	-	360 seconds