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Special exercises using tools and their effect on teaching the skill of a front shoulder circle on the rings apparatus in artistic gymnastics for students

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Abstract

Sports skills in some individual games require physical and motor qualities to facilitate the process of skill performance and also require the instructor or trainer to use more than one strategy, method and way to bring the performance to the level of mastery and avoid injury. **The aim** of the research is to know the effect of using special exercises using tools and their effect on teaching the skill of a front shoulder circle**. The research hypothesis** is that using special exercises with tools has a positive effect on teaching the skill of a front shoulder circle on the rings apparatus. Research method: **The researchers used the experimental** method by designing two equal groups, the control and the experimental, to suit the research procedures. Research community: **The research community** was determined by (341) students distributed over (10) sections of the third stage of the College of Physical Education and Sports Sciences / University of Baghdad. As for the research sample, they are the third stage, Section (L), and their number is (30) students. The injured and failed ones were excluded and the sample settled on (20 students). The research sample formed a percentage of (5.86%). As for the exploratory experiment sample, the researchers used (5) students from the same department from outside the experimental sample. **The researcher concluded** that the exercises using the tools had a clear impact on learning the anterior shoulder circle skill - and that the design of the exercises was consistent with its fluidity and did not hinder the scope of learning the skill, in addition to adding a kind of comfort and safety when performing and not getting injured. **The researchers recommended** conducting other studies using special exercises in artistic gymnastics on other devices.

Keywords: Special exercises, ring device, artistic gymnastics.

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Introduction

Sports skills in some individual games require physical and motor qualities to facilitate the process of skill performance. They also require the teacher or coach to use more than one strategy, style and method in order to bring the performance to the level of mastery and avoid injury, as some skills may cause severe injury due to their dependence on a specific part of the body, especially if this skill is taught at a certain age and training level or to students in colleges of physical education and sports sciences. Because of age and school stage, the student needs high physical strength as well as abilities. Movement to reduce the intensity of skill performance in sports, especially those that depend on the upper extremities of the body.

The artistic gymnastics game for men is one of the individual games with high physical and motor requirements due to the variety of gymnastics equipment and the number of motor skills required throughout the annual teaching stage. The throat apparatus is one of the difficult devices for the student because it depends on the grip strength of the throat handle and the strength of the shoulders. The front shoulder rotation skill is the most difficult skill for the throat apparatus. It is taught in the third stage after giving the basic skills in the second stage. This means that the student knows the difficulty of this apparatus and its requirements. Special exercises are considered one of the most important requirements for learning to perform the skills. Difficult movement, and auxiliary tools and devices are considered one of the foundations of the success of the educational process, and here it lies the importance of research Preparing special exercises using tools to learn the skill of a forward shoulder rotation on the throat device .As for the search problem It is manifested by reaching the level of performance through exercises with the tools used, which correct the work of the correct paths of the body and overcoming errors associated with performance, such as bending the arms and not reaching the body to the correct level before performing the forward shoulder rotation, to avoid injury and falling from the device. Much scientific research has addressed the importance of using exercises, devices, and assistive tools, and researchers agree with many studies, including one (Yassin & Akbar, 2024 .(The researchers concluded that the special exercises had an impact on learning and improving the performance of the skill of landing with a rounded back flip to stand on the horizontal bar. The use of special tools also had a not insignificant role in learning and improving the performance of the skill of landing with a rounded back air flip to stand .As for the study (Muhsen, 2024) The researchers concluded that the use of the two-way auxiliary balance device had a clear effect on some motor abilities and improved the performance of the handstand skill in men's artistic gymnastics, and that the two-way balance device was well designed and studied (Al-Saedeey &Salman, 2024 .(The most important conclusions were that the assistive device added to the sample a second and enjoyable training method that had a clear impact on learning the skill of standing on the hands by rotating half a turn outwards. Through the educational units and repetitions for players on the device, it becomes clear that it has a good design and can withstand their weights and repetitions. As for the study) Jehad et al., 2023 (The researchers concluded that special exercises that resemble the performance of the skill have a significant impact on developing Endo and Stalder skills in the pull-down apparatus for men. As for the

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study (Shihaib et al., 2022) The researchers concluded that the educational method had a positive impact on learning the skill, and that the educational method was very good and supported the performance of all players.

Research objective It is knowledge of the effect of use Special exercises using tools and their effect on teaching the skill of forward shoulder rotation on the ring device in artistic gymnastics for students

Force the search The use of special exercises for tools has a positive effect in teaching students the skill of forward shoulder rotation on the ring machine in artistic gymnastics.

Method and tools

Research Methodology

The researchers used the experimental method by designing two equal groups, control and experimental, to suit the research procedures .**As for the research community - :**The research population was determined by (341) students distributed among (10) divisions for the second stage of the College of Physical Education and Sports Sciences / University of Baghdad. As for the research sample, the third stage was division (L) (30) students. The injured and those who failed were excluded from them, and the sample settled on (20 students), and the research sample constituted a percentage of (5.86%). As for the exploratory experiment sample, the researchers used (5) students from the same branch from outside the experimentation sample, and the following table shows the percentages of the full sample.

Table(1) It shows the sample size and percentages

Percentage	umber	the society	T
100%	341	earch community	1
5.8%	20	earch sample	2
0.014%	5	loratory sample	3

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Table (2) The experimental design of the research group is shown in the table

Posttest	Pilot program	Pretest	Group
ulder cycle skill test	ching programme	ulder cycle skill test	ale officer
ulder cycle skill test	Tool exercises	ulder cycle skill test	piricism

The researchers used research methods (Arabic sources and references, observation and analysis, tests and measurement, the Internet), and the researchers also used tools and devices, including a stopwatch, a photographic camera, a legal throat device, a mini-trampoline device, jumps, inclined mats with a height of (30 cm) and a length of (1.5) metres, a mat with a height of (1) meter and a length of (1.5) metres, a training dumbbell device with variable heights.

Exercises

After specifying the tools on which the exercises would be performed, the researchers designed the exercises in a way that had never been used before in learning this skill, and since the teachers were specialists in gymnastics (physique, learning, and training), the exercises were developed in a way that matched the abilities and level of the students without injury, since the skill, any error in its path and performance, would cause injury to the shoulder joint, and thus deprive the student of many practical subject lessons in college.

T	Explanation of the exercise	rformance form
1	xplaining the entire skill to students, indicating the keys to its cess as well as the obstacles to performance. Explain the use of each tool and its function in helping good performance	
2	of a legal variable altitude assistive throat device. The student ands holding the two rings, using the hooks for stability, and tends the arms to the side so that the arms are extended to the s in a straight line with the shoulder, and he jumps and does the full front roll.	

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3	same as the first exercise, but the height of the throat is higher the first exercise, in addition to the student standing on a piece sponge, 20 cm high, in addition to the use of the sponge roller, hen the student performs the same first exercise and lands by placing the Z on the sponge roller.	
4	the same legal ring device with variable heights, he places the -trampoline device and places the foam roller in front of it. The ent holds the rings with the arms extended to the side and begins mping to a level where the arms are equal to the shoulders and ad. At the end of the jump, the student twists the arms inward.	
5	The same fourth exercise: At the end of the jump, the student rforms a forward shoulder rotation and descends in the angled position on the foam roller	
6	same exercise as before differs only in that the student holds the oat in a standing position with the arms up, then from stability mps up and does a forward shoulder rotation and lands on the foam roller.	
7	g a slanted sponge rug, where two of them are placed one on top he other, forming a rug 30 cm high. The student stands on it in e middle, holding the throat in a hanging position, and begins ping up, doing a forward shoulder rotation, and descending onto the rug.	
8	forming the skill is likely on a legal device with full assistance	

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Figure(1) Demonstrates exercises with tools

Field research procedures:

The researchers conducted a reconnaissance experiment with the help of the assistant work team to find out the effectiveness of the exercises with the tools used on each side and the exercises designed by them. Are they compatible with the lengths and weights of the sample and whether the springs stabilize the student at the heights of the device in relation to the variable throat heights, in addition to the effectiveness of the exercises with inclined mats? The exploratory experiment was carried out in the gymnastics hall in the College of Physical Education and Sports Sciences, University of Baghdad, on a sample consisting of (5) students outside the experimental sample in the division, and each exercise was applied to one student.

Pre-test of the skill of forward shoulder rotation on the throat machine

1-4-2Skills test

-1The purpose of the test Measuring the ability to perform and knowing the final score that the player obtains for performing the skill of the forward shoulder rotation on the throat machine

Testing tools :Legal throat device, sponge mat with a height of (20) cm,

Evaluation of the test: The test is evaluated according to the technical performance according to what the arbitrators agreed upon by calculating the player's errors, as the highest score obtained by the player on the device is (10) degrees.

Test procedures: After helping the student to hang on the ring device, he then takes the starting position of the movement from the swing and performs three swings. With the third swing, he snatches the legs forcefully back so that the body position is horizontal with the ground and emphasizes the straightness of the arms to the side. Then he bends the hip joint and keeps the legs straight. The movement begins from the shoulder joint, bringing the chin to the chest and doing a forward roll. The final position of the skill is an inverted hang.

To register : The evaluation is carried out by four teaching referees specializing in gymnastics, and according to their internal evaluation. The average of the two scores is taken and divided by (2) for the purpose of extracting the player's final score, and the performance evaluation is made up of (10) scores, according to agreement, and as shown in the following figure.

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Figure(2)

Demonstrates the technician's performance of the skill of forward shoulder rotation on the throat device

Pretest The researchers conducted the pre-test for the control and experimental samples to establish equivalence in skill performance, as shown in the following table.

Table(3)

It shows the arithmetic mean, the standard deviation, the calculated (t) value, the level of error and significance, the differences in the arithmetic means, and the deviation of the differences in the pre-test of a skill for the control and experimental research sample.

Type of gnificance	ror vel	value ulated	perimental group		ntrol roup		Unit of easurement		Landmarks Statistics
			±	Q	=				rch variables
Not a sign	1.	06.	63.	720	6.	70	degree		ulder standing skill

*Significant at the confidence level (0.05) if the error rate ≤ (0.05). Degree of freedom n-2 = 18

Educational curriculum

For researchers, Az They relied on the vocabulary prescribed and set by the college and according to the vocabulary of the throat device for the third stage. It did not change the set vocabulary, and used the exercises for the tools in the curriculum set for the sample. The experiment lasted for (10) weeks and included (10) educational units of (1) one, as decided for the third stage, which is (2) hours per week. The time of the total unit was (90) minutes divided into two devices. For one educational unit, it is divided into two devices for each one (flying, jumping) and (flying, jumping), and the educational curriculum is applied in a period of time of(30)

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Accurate for the parallel device. The researchers also relied on the principle of (repetition and rest), and they were keen that the educational curriculum that was developed by them and in consultation with the supervisor of the auxiliary device was in accordance with scientific foundations and principles.

After completing the application of the educational curriculum vocabulary using exercises with assistive tools, the skill of forward shoulder rotation on the throat device, the post-test was conducted in the same manner in which the procedures were conducted and as in the pre-test, as the researchers created the atmosphere and conditions in which the same pre-tests were conducted. After that, the skill was photographed, then it was transferred to a calculator and then to a laser disc, and then it was presented to the specialized teachers and the evaluation score was approved with a range of (10) degrees for the skill .The teaching referees adopted the international law of artistic gymnastics by excluding the highest score and the lowest score and adopting the arithmetic mean of the two middle scores from their scores. Divide it by two to extract the player's final score.

Statistical methods

The researchers used the statistical program SPSS, and the use included the arithmetic mean, standard deviation, percentage, and t-test value for correlated and different samples.

Results

Table(5)

earch variables	N	Unit of asurement	Pre-test		osttest				lue	oral	notation
			Q	ع	Q						
t shoulder rotation skill	9	degree	570	56	.450	1	0	7	07	000	Dal

It shows the arithmetic mean, the standard deviation, the calculated (t) value, the level of error and significance, the differences in the arithmetic means, and the deviation of the differences in the pre- and post-tests of a skill for the control research sample.

*Significant at the confidence level (0.05) if the error rate.(0.05) ≥

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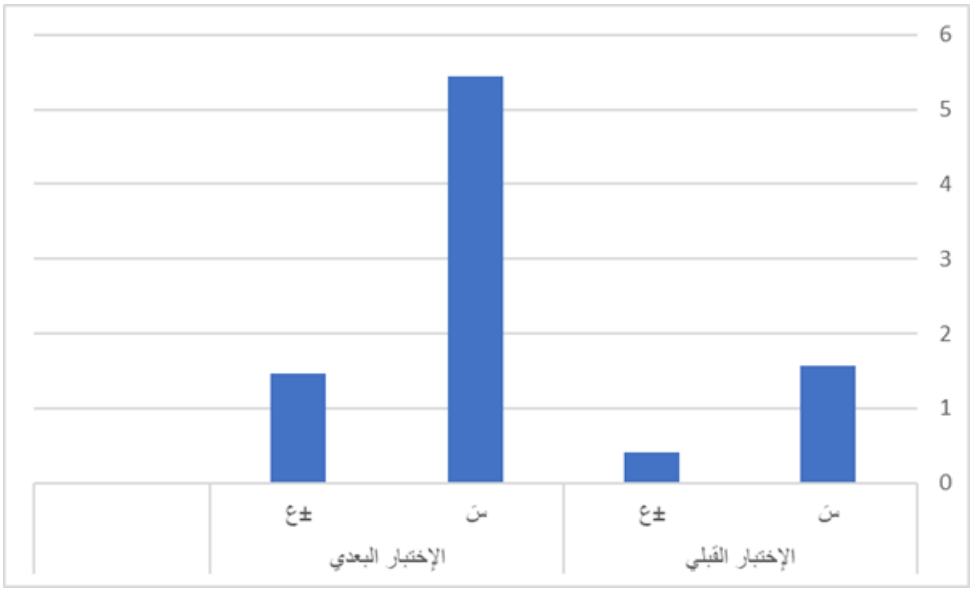

Figure(3) The histogram shows the means and standard deviations for the pre- and post-test for the control group

Table(6)

It shows the arithmetic mean, the standard deviation, the calculated (t) value, the level of error and significance, the differences in the arithmetic means, and the deviation of the differences in the pre- and post-tests of skill for the experimental group.

arch iables	N	liness urement	est		est		F	A F	value	loral	notation
t shoulder rotation skill	9	the	1.720	.4263	6.800	1.316	4.880	1.344	11.47	.000	Dal

*Significant at the confidence level (0.05) if the error rate.(0.05) ≥

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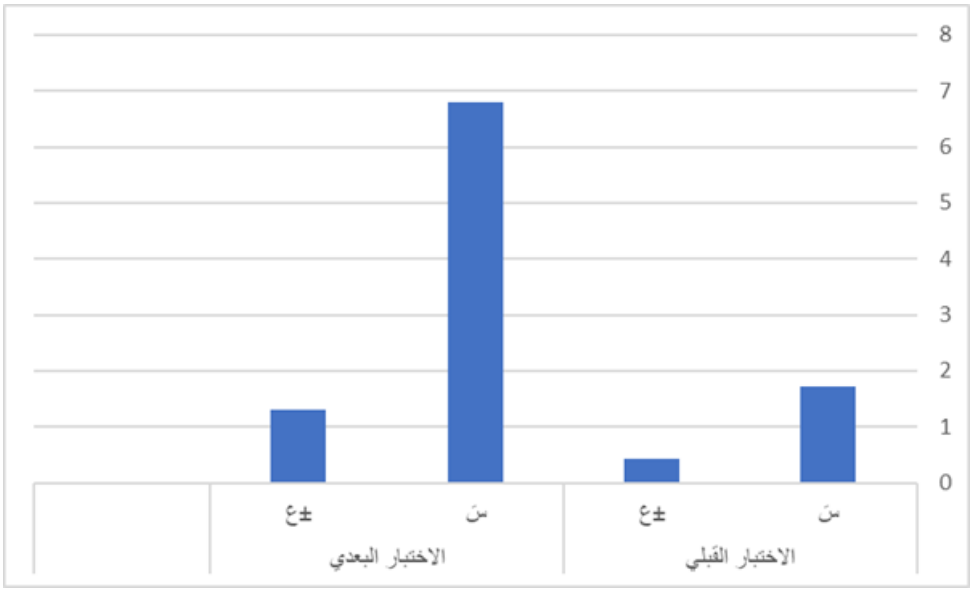

Figure(4) The histogram shows the means and standard deviations for the pre- and post-test of the experimental group

Table(7) It shows the arithmetic mean, the standard deviation, the calculated (t) value, the level of error and significance, the differences in the arithmetic means, and the deviation of the differences in the two post-tests of skill for the control and experimental research sample.

mark s istics / rch ables	N	Unit of asurement	trol up		rimen roup		T value alculated	rror level	Type of nificance
			س	±	س	±			
shoulder rotation skill	18	degree	5.450	1.461	6.800	1.316	2.170	044.	Dal

*Significant at the confidence level (0.05) if the error rate.(0.05) ≥

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Discussion

Based on the results shown in Table (5) and Figure (3) for the control group Mathematical circles showed that there is a significant difference between the two tests and in the style and method of teaching the curriculum developed by the teacher in teaching the skill of the front shoulder rotation. (p36 Nasser et al., 2024) confirms that through the teacher's experience in using the appropriate strategy in his own way and method in communicating the method of learning the skill at the time specified for it within his educational vocabulary" ,as the technical and academic expertise of the teacher is one of the reasons for delivering the practical material in a manner that suits the students in colleges of physical education". (Moayd et al., 2019) The goal of achieving good performance in the shortest period of time in all team and individual sports is the goal of the coach and player. This performance requires physical abilities to facilitate the learning process and keep up with the graph to perform the skill to be learned according to paths in its three parts: primary, basic and final. (p135 Al-Rida, 2021) As for looking at Table (6) and Figure (4) for the experimental group between the pre- and post-tests, it is noted that there is a significant difference between the arithmetic means in favor of the post-test, and (p73 Hussein et al., 2024) indicates that the process of relying on the use of auxiliary tools in the field of training works to reduce the time and effort expended to deliver the sequence of skill vocabulary to the learner in an easy and simple manner, which is one of the important things that he seeks. Those involved in sports, as well as the spirit of competition, suspense and excitement during sports performance. Researchers attribute this to the exercises for using tools that have proven effective in teaching a skill .A front shoulder course on the throat apparatus, (Kadhim, 2024b) by dividing the order of performing the skill into its three parts and using the tools, each according to the form of performance for it. As for the post-tests for the control and the experimental, and by looking at Table (7) and Figure (5), the difference appears clear from the middle for the post-test and in favor of the experimental, since the exercises using the tools according to a special approach other than the method of teaching the skill, as the special exercises are considered like a fingerprint for a particular skill, even though some of the skills are similar to the initial and final parts, the main part needs a method. It combines the three educational parts of the skill to be learned to students. (Al-Bayati, 2013, p. 351) indicates that most sports training scholars agree on the necessity of the training process for the skill to take place according to its motor path to achieve the desired goals, whatever the method or approach adopted in the training process. These reasons and variables affecting performance development have imposed on coaches to find effective specialized training methods and exercises, and if the need arises to find more than one specialized exercise that can be included within the curriculum to develop skill performance. As for what added to the experimental sample's learning level and surpassed that of the control sample, (Kadhim, 2024a) it was the diversity of tools used in a form and designed to correct them in line with the course of each of the three parts. She mentions (Shaima, 2022, p. 33) that the use of different educational means (tools) in the educational process makes the educational process more effective and

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positive, as the learner becomes responsible and a positive participant to a large extent after he was a future person. In addition to activating the process of communicating information, the use of these means leads to speeding up the learning process. Learning (Kadhim & Mousa, 2024)

Conclusions

The researchers concluded that Exercises on using tools have clearly affected learning the skill of forward shoulder rotation

The design of the exercises was consistent with the flow and not obstructing the field of learning the skill, in addition to adding a kind of comfort and safety when performing and preventing injury.

The researchers recommended Conducting other studies using special exercises in artistic gymnastics on other equipment

Appendix(1) Build a daily educational unit for the experimental group Unit time: (90) minutes Objective: Learn to perform the technical skill of (front shoulder rotation). Number of group members :

nth	nity	the time	the details	ure
first nth	e first eek	hroat D	plaining the entire skill to students, indicating the keys to its cess as well as the obstacles to performance. Explain the use of each tool and its function in helping good performance	
	second eek	oat 35D	of a legal variable altitude assistive throat device. The student nds holding the two rings, using the hooks for stability, and ends the arms to the side so that the arms are extended to the s in a straight line with the shoulder, and he jumps and does the full front roll.	
	third eek		epeat the first week's exercise, after which the height of the at will be higher than the first week's exercise, in addition to student standing on a piece of sponge with a height of 20 cm, ddition to using the sponge roller, when the student performs	

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		Throat		e same first exercise and lands by placing the angle on the sponge roller.	
	urth eek			ne previous exercises are repeated and then on the same al loop device with variable heights. He places the mini-poline device and places the foam roller in front of it. The ent holds the rings with the arms extended to the side and gins jumping to a level where the arms are equal to the lders and head. At the end of the jump, the student twists the arms inward.	
		roat	5D		

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