

DESIGNING AN AUXILIARY DEVICE AND ITS IMPACT ON LEARNING THE SKILLS OF ANGULAR SUPPORT AND OPEN SUPPORT FOR HANDSTAND PUSH-UPS ON THE PARALLEL APPARATUS IN ARTISTIC GYMNASTICS FOR BUDS

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Abstract

The aim of the research is to find out the effect of using an assistive device in teaching the skills of angular support and open pressure to the hands stand. As **for the research hypothesis**, the use of the assistive device has a positive effect in teaching my skill of angular support and open pressure to the hands stand on the parallel apparatus. The researchers used the experimental approach (group design the one with two tests, pre and post) to suit the nature of the problem to be solved. As for the research community, it represents (10) players of the School of Mathematical Talent for Gymnastics, and the ages of the group, which is the category of buds, range from (6-8) years. As for the research sample, it represented (6) players and was determined by (60%). The most important **conclusions** are that the assistive device has affected Clearly in learning the two skills well and that the device is well-designed and has good specifications and withstands the performance of the players very well.

Keywords: Auxiliary Device, Fulcrum, Parallel Apparatus

Introduction

The basic skills for all sports are the first building block and the basis for learning the rest of the complex skills that are involved in more than one basic skill. Due to the specificity of each sport, whether individual or group, it has a special training style and method that suits all ages. The specificity of the game of artistic gymnastics, whether for men or women, is that it requires a huge amount of devices and auxiliary tools to prevent the player from falling and being exposed to injury, as it is multi-device and has many skill requirements on all of his equipment.

The parallel device is considered one of the difficult devices at the beginning of learning for age groups because the device is high, which causes the budding player to be extremely afraid, in addition to the fact that it requires a strong fulcrum and high balance, which reduces the time period for learning basic skills on it. Therefore, the devices and auxiliary tools are considered one of the means that speed up the process of skill learning. In addition to adding a second method of training and breaking the barrier of fear by giving the player an opportunity to feel the skill duty paths for each of the basic skills. My skills include angular fulcrum and fulcrum, which

is a handstand push-up on a machine. Therefore, the importance of the research is the use of an assistive device in teaching these two skills, but the problem is manifested in overcoming the process of learning to perform the two study skills and overcoming the difficulty of performance through the use of an innovative assistive device. Much scientific research has addressed the importance of using assistive devices and tools, including a study (Hanan et al., 2017). The researchers concluded that the assistive device designed by them contributed positively to the experimental group's learning of the handstand skill that developed, and that the experimental group's use of the assistive device had an effective impact. In the students' enthusiasm and eagerness to learn the skill, which led to their superiority in the skill of handstand in artistic gymnastics over the control group in the post-tests of the skill. As for the study (Laith, 2010), it concluded that the experimental group that used the manufactured device had an advantage over the control group in the results of the tests of skill variables. Dimensionality. As for the study (Ismail, 2010), the study concluded the effectiveness of using the assistive device in learning the skill of ascending to the parallel apparatus at different heights, as it recommended the necessity of using the assistive device when teaching the skill of ascending to the parallel apparatus at different heights and familiarity with the importance of the diversity of educational aids and tools that help in Learn the skills better and correctly. As for the study (Ali et al., 2022), the researchers concluded that there is a positive effect of the exercises for an innovative device in improving the motor path and performing the pronation skill on the artistic gymnastics parallel device. As for the study (Qasim, 2019), the researcher found that the assistive device had the greatest impact on learning basic skills on the throat device and was an alternative to manual assistance and had a positive impact on the level and speed of learning. It was also shown through the field experiment that the experimental group that was taught using the assistive device outperformed the control group that was taught the skill with manual assistance. The aim of the research is to identify the effect of the assistive device in learning the skills of angular support and open pressure to stand on the hands on the parallel device. The hypothesis of the research is that the designed assistive device has an impact on learning the skills of angular support and open pressure to stand on the hands on the parallel device.

Method and tools:

The researchers used the experimental method to suit the research problem, as the research population was defined as (10) buddy players from the Specialized School of Gymnastics, whose ages range between (6-8) years, which is the buddy category. The research sample included (6) players, and the research sample constituted (60%). The researchers used a single sample design. Table (1) shows the percentage distribution of the sample

Percentage	the number	the society	No
100%	10	research community	1
60%	6	The research sample	2
20 %	2	Exploratory sample	3

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 low legal parallel device, and an auxiliary device.

How to design the device- :

After the idea was completed, what the problem was and solutions were developed to solve it, it became clear to the researchers and Mr. Supervisor about the mechanism of action and the goal of the idea of the device, so the researchers began to design preliminary plans for it and put the correct measurements in a way that is compatible with the ages of the target sample. Accordingly, the device was designed and its components are:

Components and specifications of the proposed device

A-The main part

1. The rule: The base consists of iron in the form of a rectangle, 1.5 meters long, 5 cm high, 50 cm wide, and 5 cm high. The researchers chose these measurements for the strength and durability of the device and its balance on the ground.
2. Rail carrier-: The iron stand consists of two pieces, 1.40 cm long, fixed to the main base from the inside, and in the middle it is not fixed to the base, meaning it is fixed when needed and lifted from the main base.
3. The sliding base, which is an iron base that represents a sliding cart on the railway installed on the main base. (10) cm wide and (5) cm high. Tires are installed on its four sides, so that it moves forward and backward like a cart.
4. Two (2) hollow iron bars, 50 cm long and 20 cm in diameter, which represent the iron bar of the parallel bar.
5. Iron supports, 25 cm high, to fix the parallel bars on the basic base.
6. Two (2) iron tubes, each of which is 1.5 meters long, jointed and folded inwards and outwards. It is fixed at the end of the parallel bar and with a clamp perpendicular to it. It is used when working in a way that suits the lengths of the players and contains an iron circle to fix the last part of the device.
7. Two iron tubes designed in the shape of a T, which are attached to the last piece of the device and serve as a support for the player in handstands.
8. Finally, (4) rubber ropes, the length of each pair is 50 cm and the other is 25 cm.

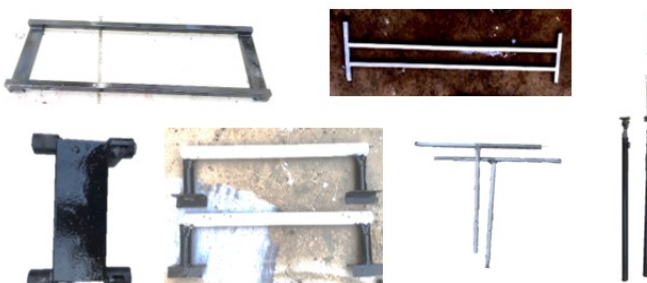


Figure (1)(
Shows the parts of the device



Figure (2)

Explains how the device works

The two researchers conducted a reconnaissance experiment with the help of the assistant work team to determine the effectiveness of the work of the Al-Muqrah assistant device. The exploratory experiment was conducted in the gymnastics hall in the Al-Amana Club next to Al-Rusafa on a sample consisting of players outside the research sample, and its goal was to initially test the device's work on the players as well as Determine whether the device is suitable for teaching the research skill, and it became clear after taking into account the opinions of experts that the proposed device works in accordance with the procedures and does not hinder work with it.

The pre-test for the skills of angular fulcrum and fulcrum, opening the push-up to the handstand on the parallel bar

Field research procedures

Skill tests

The purpose of the test: to measure the ability to perform and know the final score that the player obtains for performing the skill of angular fulcrum and open fulcrum to push up to stand on the hands on the parallel apparatus.

Testing tools: Low-height legal parallel device, 20 cm high foam mat, watch.

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. And for each of the two research skills

Test procedures: The tester takes the preparation position, climbs onto the apparatus, and leans on the bars by taking the starting position of the movement (angular support and pressure opening for handstand), i.e., with an outstretched arm, then completes the skill and stability requirements after the end of the performance.

To score: The evaluation is done by four referees and according to an internal evaluation of the referees. The average of the two scores is taken and divided by (2) for the purpose of extracting the player's final score. The performance evaluation is made up of (10) scores according to agreement and as shown in the following figure. It must be constant (2)s



Figure (3)

Demonstrates the performance of the two skills

The researchers relied on the vocabulary prescribed and developed by the team coach, while the educational curriculum was developed by them and based on the opinions of the coaches of the game. They did not change the vocabulary developed, and the assistant device was used in the curriculum developed for the sample. The experiment lasted for (6) weeks and included (15)) an educational unit at a rate of (3) units per week, and the time of the total unit amounted to (145) minutes, the time of the device from the main part of the unit, with a time period of (35) minutes for the parallel device. The researchers also relied on the principle of (repetitions), and were keen to have The educational curriculum that was developed by them and the trainer was in accordance with scientific foundations and principles.

Table (2) shows the experimental design of the research group

Posttest	Pilot program	Pretest	the group
Testing my skills of angular fulcrum and angularfulcrum and push-up for handstand	Use of an assistive device	Testing my skills of angular fulcrum and angularfulcrum and push-up for handstand	Research group

Table (3): A daily training educational unit in the educational system designed to teach the two study skills

Total time	Rest between sets	Number of groups	Performance time	Duplicates	Exercise name
11/d	2/d	5	15/s	10	Using the sliding cart with the skill of front angular pivot
7/d	2/d	5	10/s	10	Using rubber ropes to support the front opening
5/d	2/d	4	7/s	10	Using the sliding cart with the rear angular pivot
10/s	2/d	5	8/s	10	Using rubber ropes to support the back

After completing the application of the vocabulary of the educational curriculum for the skills of angular fulcrum and open fulcrum and push-up to handstand on the parallel apparatus, the post-test was conducted in the same manner as it was done in the pre-test, as the researchers prepared the atmosphere and conditions in which the pre-tests were conducted. The players' performance was evaluated directly by the referees (Appendix 2) accredited by the Central Gymnastics Federation, and the evaluation score was based on a range of (10) skill levels. The two researchers 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 the judges' scores. Divide it by two to extract the player's final score.

Results

Table (4) 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 the two skills of the research sample.

Type of significance	sig	T value Calculated	A F	F	Posttest		Pretest		Measurement	n	
					p±	s	p±	s			
D	.000	13.51	.616	3.40	.553	5.23	.258	1.83	degree	5	gular An fulcrum
D	.000	33.2	.278	3.783	.393	6.15	.196	2.36	degree	5	The

										foundation is open
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*Significant at the confidence level (0.05) if the error rate $\leq$ (0.05).

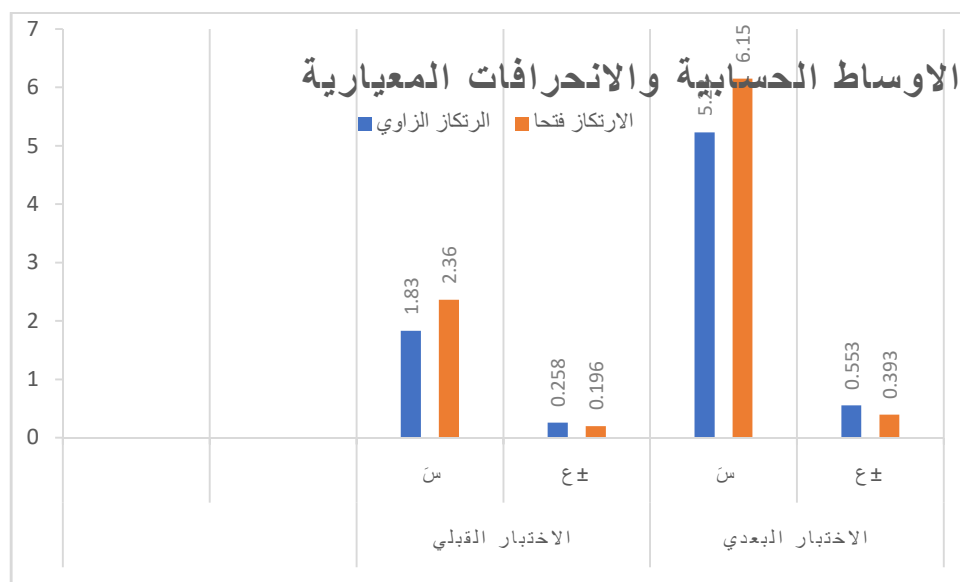


Figure (4) shows the histogram of means and standard deviations in the pre- and post-tests

Discussion

The results presented in Table (4) and Figure (3) for the two skills showed that there were significant differences between the two tests and in favor of the posttest. The researchers attribute this to the use of the (auxiliary) device, which has proven effective in teaching the skills of angular fulcrum and fulcrum, opening the pressure to stand on the hands, by establishing Positioning the hip and torso and raising the performance of the skill with the correct paths on the parallel apparatus, in addition to the correct repetitions on it to strengthen some of the muscle groups that are involved in the skill performance of the two skills in the research group, as well as the major role in the use of rubber ropes in an artistic manner and connecting them to the correct position on the apparatus and the body of the players, as the results showed that there is a development between The pre- and post-tests are in favor of the post-tests, through the development of the arithmetic media for the two tests. This indicates the effective contribution of the (auxiliary) device designed to the learning process and the extent of its benefit to the coach and players from the proposed device, which contributed well to educating the players through performance free of errors associated with learning.

The device also facilitated the learning process because it put the player on the correct path to the skills under study, especially in the early stages, as the device works to help the player stabilize the hip position, which plays a major role in learning the two skills on the parallel device, and the balance is high, which gives the player the ability Balance without falling from the device and

creates an atmosphere of confidence and safety for them, and this is also confirmed by (Hani Al-Desouki Ibrahim, 2013, p. 166) that devices and tools help in the transfer of knowledge, information, and various and multiple skills and increase the ability of players to acquire skill through the different senses and thus It works to have a positive impact on the speed of development of basic skills and improve the specifications of tactical and skill performance.” (Al-Kuraimi, 2019, p. 20) points out, “Assistive tools and devices have a major role in improving and developing technical performance and helping the player understand the movement path that the player is going through, as well as providing strength.” It is necessary to complete the main part of the movement, in addition to being a good means of safety. However, there are some skills in which it is difficult to provide manual assistance due to the multiple axes of movement and the position of the player in which it is difficult to give additional force by the coach“.

The proposed device also contributed to developing the spirit of competition and excitement among the budding players by achieving the goal of teaching the two skills under discussion, which is what it was developed for. In addition to that, the repetitions used on the proposed device, the scientific method, the diversity in the exercises, and the number of educational units, which were (3) per week. Such factors helped greatly in attracting the players towards learning and increasing their motivation and motivation, which contributed to the development of the experimental group, as it confirms (Abdel Reda, 2016, p. 76) that “using the proposed device and diversifying the use of exercises on it led to eliminating boredom from the players and seriously pushing them towards better performance, because the various exercises on the device make the player eager to learn and stimulate different muscle groups, depending on the type of exercise“. The researchers concluded that the assistive device had a clear impact on learning the skill well. The device has good specifications and handles the players’ performance very well. The researchers suggest conducting studies on the use of the assistive device in learning other skills on the device itself and other devices.

Conclusions

1. The assistive device has had a clear and good impact on learning the two skills
2. The device has a good design, has good specifications, and handles the performance of players very well.
3. The researchers suggest conducting studies on the use of the assistive device in learning other skills on other devices that include the skill of standing on hands, such as the throat, the handles horse, and the floor.

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Appendix (1) The weekly and daily educational unit

الوحدة التعليمية الاستيعابية

وحدة تعليمية يومية					
الأسبوع الأول/اليوم الأول					
وحدة	يوم	وقت الوحدة التعليمية (١:٥)		قرار	
الثانية	الخميس	٢٥	احماء عام وخاص	شرح المطلوب في الوحدة التعليمية فيما يخص جهاز المتوازي مع شرح المهارتين	لا يسمح به وقت الوحدة التعليمية
			٣٥ متوازي		
			٣٥ مقابض		
			٣٥ أرضية		
		١٥	تمارين استطعام		

وحدة تعليمية يومية					
الأسبوع الأول/اليوم الثاني					
وحدة	يوم	وقت الوحدة التعليمية (١:٥)		قرار	
الثانية	الخميس	٢٥	احماء عام وخاص	شرح المطلوب في الوحدة التعليمية فيما يخص المتوازي	لا يسمح به وقت الوحدة التعليمية
			٣٥ مقابض		
			٣٥ خلق		
			٣٥ متوازي		
		١٥	تمارين استطعام		

وحدة تعليمية يومية					
الأسبوع الأول/اليوم الثالث					
وحدة	يوم	وقت الوحدة التعليمية (١:٥)		قرار	
الثالثة	الجمعة	٢٥	احماء عام وخاص	شرح المطلوب في الوحدة التعليمية فيما يخص جهاز المتوازي	لا يسمح به وقت الوحدة التعليمية
			٣٥ خلق		
			٣٥ متوازي		
			٣٥ خلق		
		١٥	تمارين استطعام		

الوحدة التعليمية

Appendix (2) Names of arbitrators

Workplace	Arbitration certificate	Name	No
Central Federation of Gymnastics	First instance judge	Najm Abdul Hussein	1
Central Federation of Gymnastics	First instance judge	HamedAwaid	2
Central Federation of Gymnastics	International governance	Abdul KarimArif	3
Central Federation of Gymnastics	First instance judge	A mighty position	4