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The effect of special physical abilities and some kinematic variables to develop the skill of the Arab jump on the jumping platform for the students of the second stage in the College of Physical Education and Sports Sciences / University of Diyala

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Abstract. Skillful performance is generally linked to the fulfillment of the mechanical conditions for this skill, which is evidence of the integration of the artistic performance, and due to the connection of the application of these conditions to the reality of physical and motor capabilities, so it has become important for the student in the gymnastics subject to be characterized by physical abilities specific to the type of skill in order to integrate the mechanical conditions for it, and from Here, the importance of the research was manifested in studying the effect of special physical capabilities and some kinematic variables to develop the skill of the Arab jump on the jumping platform for the students of the second stage of the College of Physical Education and Sports Sciences / University of Diyala on their physical fitness and skill through the study of some special physical abilities and some biokinematic variables and the accuracy of the performance of the skill in During the physical effort to find out the impact of the effort exerted by the student on the special physical abilities and the skill of the Arab jump on the jump platform and the biokinematic variables of this skill. The researchers used the training method with an experimental group with two pre and post tests. The research community was represented by students of the second stage of the College of Physical Education and Sports Sciences, Diyala University, numbering (267) students divided into (5) people, and the research sample was chosen by the intentional method, and they are students of Division (C) adult Their number (37) represented (13.82%) of the parent community, as (2) students were excluded for their commitment to attendance, so (5) were excluded for their participation in the survey experiment, and (10) students were chosen randomly to represent the research sample, while the rest of the students adhered The number of (20) students is the requirements of the educational unit related to the curriculum with another training.

Keywords. special physical abilities, biokinematic variables, Arab jump, jumping platform, gymnastics

1. Introduction:

Maintaining the efficiency of physical performance is of great importance and one of the main bases on which to achieve the required results, as maintaining the level of special physical abilities despite exposure to physical exertion is a clear indicator that possesses

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physical and motor qualities is an influential factor in the performance of skills for any sport according to mechanical and technical conditions, as maintaining the student's performance level is one of the important steps to achieve the goal.

Researchers and specialists in the sports field have been interested in identifying the kinks and weaknesses in the details of any skill as a basis for its development, as the high technical level that we observe in the performance of some students with a good level came as a result of the use of many tools and supplies and multiple means, including the use of motor analysis for the purpose of knowing the details of technical performance accurately, as maintaining students on the correct motor paths of basic skills has to do with the reality of the level of physical abilities, and is also an important factor in continuing to bid throughout the gymnastics races, maintaining the correct motor path will give an economy to the student's effort, and hence the ability to perform in a Better.

Despite the fact that gymnastics depends on accuracy in skill performance, it has begun to develop in many countries of the world, and this is due to the dependence on the sciences related to the sports field, whose main purpose is to improve the physical and skill level of students, taking into account the specificity of each of the gymnastics events, as special physical abilities and basic skills, as the student in gymnastics must have high-level physical abilities in order to be able to implement the basic skills of the game, because this game has specifications that require high speed in performance, as well as the requirements of the game force students to keep moving and not stop, as they impose on the student In addition to the small size of some relative devices, including the jumping platform, it is imperative for the student to possess, in addition to strength, high accuracy throughout the performance period on the device, because of the importance of this skill in enhancing the goal or modifying the motor trajectory, including the skill of the Arab jump jumping platform.

Skill performance in general is related to the achievement of the mechanical conditions of this skill, which is evidence of the integration of technical performance and due to the fact that the application of these conditions is related to the reality of physical and motor abilities, so it has become important for the student in gymnastics to be distinguished by physical abilities specific to the type of skill in order to integrate the mechanical conditions for it, hence the importance of research in studying the impact of special physical abilities and some kinematic variables to develop the Arabic jump skill on the jumping platform among students of the second stage Faculty of physical education and Sports Sciences/ University of Diyala on their physical fitness and skill by studying some special physical abilities and some variables To find out the impact of the effort exerted by the student on the special physical abilities and the skill of the Arabian jump on the jumping platform and the biokinematic variables of this skill.

By following up the researchers and being specialists and teachers of gymnastics, they found that there is a weakness in the level of some special physical abilities and a weakness in the accuracy of the performance of the Arabic jump skill on the jumping platform among students, which will inevitably affect the mechanical conditions and motor pathways of the skill, so the researchers decided to study this problem and develop appropriate solutions to it by finding a program that helps to develop special physical abilities and some kinematic variables to develop the Arabic jump skill on the jumping platform among students of the second stage Faculty of physical education and Sports Sciences/ University of Diyala.

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2- Methodology and field procedures:

2.1 Methodology:

The researchers used the experimental group training method with both pre-and post-tests to suit the nature of the research problem.

2.2 community and its sample:

The students of the second stage of the Faculty of Physical Education and Sports Sciences represented the research community, University of Diyala, numbering (267) students divided into (5) divisions, and the research sample was chosen in a deliberate way, and they are the students of Division (C), numbering (37) represented (13.82%) of the community of origin, where (2) students were excluded for their commitment to attend, what was excluded (5) for their participation in the survey experiment, and (10) students were selected randomly to represent the research sample, while the rest of the (20) students complied with the requirements of the special educational unit with another training course.

2.3 Means of collecting information, devices and tools used in the research:

2.3.1 Means of information collection:

- Arabic and foreign references.
- Testing and measurement.
- International Information Network (Internet).
- Data registration form.

2.3.2 Devices and tools used in research:

- Calculator (Laptop) type (Dell Inspiron 15) of Chinese origin.
- Shooting camera type (Nikon D5000) of Japanese origin.
- Casio type camera with a shooting resolution (420 images per second).
- Kinetic analysis program (Kenova).
- Jumping platform device.
- Light indication.
- Dry pens.
- Tape measure.
- Adhesive tape.

Test instructions:

- Each laboratory has two attempts for which the best is recorded.
- If the tester's balance is disturbed and she touches the ground with another part of her body except the feet, the attempt is considered invalid and must be returned.
- The feet should be in contact with the ground until the moment of elevation.

Test management:

- A registrar who calls the names and records the results.
- An arbitrator that calculates the jump distance and notes the performance.

Recording method: The distance from the starting line (i.e. the inner edge) to the last trace left by the tested student and closest to the starting line is measured in meters and recorded for the laboratory.

Third: flexibility test: trunk bending test of standing

The purpose of the test is to measure the flexibility of the trunk and thigh in forward flexion movements from a standing position.

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Tools requirement:
* A scale made of wood or a ruler 20 cm long.
* The furnisher must ensure that the bench, chair or flat table are capable of withstanding the weight of the laboratory without generating any vibration.
Procedures
* The scale (ruler) is fixed to the edge of the seat or table so that the middle of the scale is above the edge of the seat or table and the other half below the edge.
* It is noted that the step Point (Zero) is at the level of the edge of the seat, provided that the deviations of the steps located in the upper half are negative and those located in the lower half are positive.
Performance description
* The tester takes a standing position on the edge of the bench or table so that the feet are in contact with the sides of the scale.
* The laboratory bends the trunk in front of the bottom so that the fingers are in front of the scale, and from this position the laboratory tries to bend the trunk as far as possible strongly and slowly, noting that the fingers of the hands are in one plane and move down parallel to the scale.
Test instructions
* The test is performed without stiffness in the muscles of the arms, trunk and neck.
* The test is performed from an upright position of the knees.
* The torso should be bent down slowly and strongly and try to achieve the maximum possible extent of bending down.
• It is better to give the laboratory two or three attempts as a means of warming up and training for testing before measurement, noting that this is done before climbing on the table.
* The tester should direct his gaze to the bottom of the scale.
* It turned out that strongly bending the trunk down achieves better results, but this method of performance reduces the stability and objectivity of grades due to the difficulty of calculating the grade, and therefore, in calculating the grade, it is required that the tester maintain his final position for a period of 2-3 seconds.
* The test administration is an arbitrator who monitors performance and calculates grades. A registrar makes a call to the testers and records the results.
Calculation of degrees: the laboratory degree is the maximum point reached by the laboratory from the position of bending the trunk in front of the bottom. (Allawi:1982: 341).

2.4.2 Biokinematic variants:

Based on the scientific sources and references and previous studies for the purpose of extracting all the biokinematic variables related to the skill of the Arabian jump on the jumping platform, they were identified as follows:

- Shoulder angle moment of wicking: it is the point of contact that is sandwiched between the elbow bone with the shoulder bone from below.
- Hip angle moment of wicking: it is the point of intersection of the hip joint with the knee joint from the front.
- The angle of the knee is the moment of wicking: it is the point of contact that is sandwiched between the knee joint with the ankle joint from below.

2.4.3 Exploration experience:

The survey experiment is considered a "practical training for the researcher to identify the negatives and positives that he meets during work to avoid them" (Al-Mandlawi: 1990: 107) as the researchers conducted the survey experiment on the survey sample of (5) students

on 10/11/2024 in the gymnasium Faculty of physical education and Sports Sciences/ University of Diyala at 9:00 a.m., The selected physical abilities tests were conducted and photographed in order to find out the time taken to conduct the test and the extent of the application of the sample and ensure the validity of the tools and devices used in the tests, as well as adjust the lens dimension, shooting angle and camera height.

Thus, the purpose of the exploration experiment was:

- The extent to which the sample was performed the tests used.
- Organization of the work of the auxiliary team.
- Avoiding the difficulties and obstacles that researchers may face in the main experiment.
- Suitability of the physical exertion test for the research sample.
- Note the time taken to perform the tests.
- Adjust the shooting angle, the distance of the lens from the student and the height of the lens from the ground surface.
- Ensure the validity of the camera and the recording tape.
- The validity of the devices and tools used.
- Learn how to skillfully perform by watching the tape recording on the VCR.
- Install the camera and set its final position.

2.4.4 Pre-test:

The researchers conducted the pre-test on the members of the research sample of (10) students in the gymnasium at the faculty of Physical Education and Sports Sciences/ University of Diyala on 13/11/2024 at 9:00 AM, where the researchers conducted tests of the students' physical abilities and biokinematic variables and recorded the data of the students through the registration form.

2.4.5 Educational curriculum:

The start of the application of the educational curriculum for the development of special physical abilities to develop some of the biokinematic variants of the Arabic jump skill on the jumping platform for students began on Sunday, 17/11/2024 and continued until 10/12/2024 for a month with two educational units (on Sunday and Tuesday) per week, the final set of the number of educational units reached (8) units and the educational curriculum prepared by the researchers was applied to the main section of the educational unit of (90) minutes, including (20) minutes it includes skill training and repetition, corrects performance by referencing motor pathways By shooting video with the cameras used in the study, the researchers ' function is limited to guidance, giving instructions and alerting to errors by means of real-time feedback.

2.4.6-Dimensional testing:

The researchers conducted the dimensional test on the members of the research sample of (10) students in the gymnasium at the faculty of physical education and Sports Sciences/ University of Diyala on 15/12/2024 at 9:00 am, under the same conditions as the tribal tests and in the presence of the assistant team.

2.5 Statistical tools:

The researchers used the SPSS statistical bag to extract the results and process the data.

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3.Presentation, analysis and discussion of results:

3.1 presentation of the results of the correlation relationship between pre-and post-tests of special physical abilities in the research sample:

Table (1)

Shows the results of the correlation relationship between the pre-and post-tests of the special physical abilities of the individuals of the research sample

Physical Abilities	Pre-test		Post-testing		S F	± AF	Standard Error	Calculated T value	Error Percentage	Significance Level
	S	± A	S	± A						
Explosive power of the arms	10.401	1.173	17.901	0.994	7.521	1.081	0.341	21.958	0.000	Moral
The explosive power of the two legs	2.032	0.073	2.274	0.052	0.242	0.107	0.033	7.148	0.000	Moral
Flexibility	10.64	1.244	22.45	1.130	11.813	1.786	0.564	20.903	0.000	Moral

3.2 presentation of the results of the correlation relationship between the tribal and dimensional biokinematic variables of the skill of the Arabian jump on the jumping platform among the members of the research sample:

Table (2)

Shows the results of the correlation relationship between the tribal and dimensional biokinematic variables of the skill of the Arabian jump on the jumping platform among the members of the research sample

Physical Abilities	Pre-test		Post-testing		S F	± AF	Standard Error	Calculated T value	Error Percentage	Significance Level
	S	± A	S	± A						
Shoulder Angle	102.80	6.442	132.3	4.522	28.527	8.553	2.704	10.906	0.000	Moral
Hip angle	81.18	5.7822	166.43	5.521	85.362	5.907	1.868	45.661	0.000	Moral
Knee angle	165.75	5.597	167.82	5.652	1.537	6.241	1.973	0.760	0.457	Insignificant

3.4 Discussion of results:

The researchers attribute the reason for these differences in the values of physical tests to the weakness and efficiency of some working muscles while performing the skill of the Arab jump on the jumping platform and the physical effort exerted on the research sample in some skills that need compatibility between the working and supporting muscles, especially in the compound skills of gymnastics, and this is what he pointed out (Khoribet: 1997: 13). Fatigue is a temporary decrease in the ability to continue performing work and can be measured from its external manifestations. Fatigue, as a physiological condition, affects the muscular system and other organs, which affects the working muscle potential of the sample, and the differences in the values of all physical tests showed this.

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And these differences resulted from the fact that the fatigue that befell the research sample because of performing physical effort has led to failing to achieve the required excitement in line with the abilities of students in normal conditions, and therefore we will notice a decrease in the level of physical abilities for them, and this decrease extends to the level of strength of the muscles and physical abilities under research and this effect has been shown in several images. But it is because of one reason, which is to reach a state of fatigue, as fatigue affects the level of special physical abilities.

When comparing, I found that the calculated values of the variables (shoulder angle and hip angle) reached an error rate of less than (0.05), while the value of (knee angle) was greater than the value of the error level, which is (0.05), meaning that the differences were significant for all the biokinematic variables at the moment of wicking, except for the two knee angle variables, as the differences were random.

The researcher attributes the moral differences of the shoulder angle and hip angle during the performance of physical effort to the fact that the impact of physical effort on the research sample led to the inability of the tidal muscles to perform efficiently due to the poor level of force tolerance of the research sample, which led to failing to achieve the correct and ideal mechanical foundations of the skill of the Arabian jump on the jumping platform, and this aspect was evident in the research sample, as the knee angle of the man is one of the biokinematic variables that have a clear impact on achieving the requirements of skill performance, because the failure of the knee joint of the man at the moment of performance will negatively affect the speed of the body according to the correct paths to perform the skill in question. This is because the non-lengthening of the turning radius causes a decrease in the values of the man's peripheral speed, which affects the speed of skill performance, and this is what I emphasize (abdulreda:2018: 84) that the increase, which helped to increase the horizontal distance of the player's body, which helped to give a higher vertical distance to the player while providing mobility, which facilitates the performance of the main part of the movement (turning movement) and leaving. (FARHAN, AMEEN, NSAIF:2019: 241).

As we note that there is an inverse relationship between the use of force and time, the output of the ability can be the skill performance of the movement through the use of the highest force in the shortest possible time, and this has a controversial relationship with the speed and strength achieved, as the frequency of occurrence of the above explosive ability for a short period of time gives an indication when performing a physical effort characterized by maximum intensity for a short period of time, such as jumping movements, running, and performing related skills.

4. Conclusion:

Through the results that appeared, the researchers concluded that all special physical abilities were significantly affected by the method used. The values of most of the biokinematic variables were affected by the physical effort to which the research sample was subjected, which affected the development of the values of these variables and their suitability for skill performance under study. The presence of some biokinematic variables that were not associated with.

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Appendices

Educational module model

Stage: Second Lecture: Second Time: 20 minutes.	Today: Tuesday Date: 19/11/2024 Tools: Stick, Jumping Platform.	Educational Objectives: Learn the skill of swinging the arms	Educational Objectives: 1- Spreading the spirit of cooperation within groups 2- Spreading the spirit of competition between groups

Lesson Sections	Time	Behavioral Goals	Motor Events and Skills	Organization	Notes
Main Section	70 Min	- The student should know how to perform the arm-swinging skill. - Give the student a response on how to perform the weighted arms	* Hold a stick with the opening for the arms shoulder-width apart. The student raises and lowers the arms taking care not to bend the arms from the elbow joint. The same exercise as before, * provided that the snatch is done with the arms by twisting the torso to the .side		- Emphasize calm among group members.
The Applied Part	20 Min				