International Journal of Psychosocial Rehabilitation, Vol.24, Issue 01, 2020
ISSN: 1475-7192

The effect of corrective exercises in teaching and developing some biomechanical variables to perform the scoring accuracy skill of consistency in football

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ABSTRACT

Corrective exercises, by which we mean correcting the wrong movements that a player has arisen during the performance of the sporting skill and incorrect positions that affect directly or indirectly the performance. The corrective exercises are of great importance that lies in improving skills and gaining the connection of the movement parts and that the most important benefit of corrective exercises is the expansion of sensory perception at the player, especially if those corrective exercises are prepared according to the biomechanical variables that contribute to the success of the performance significantly, as organizing the corrective exercises and the use of scientific methods and investing educational methods based on the correct foundations are the scientific approach that is intended to raise the educational level and achieve the goals of the educational process effectively and make these exercises tailored to the player's desires and inclinations; to achieve additional learning experiences.

The importance of the research was manifested in the study of one of the most important basic skills in the game of football, namely, the scoring skill, which is one of the main pillars on which all sports teams depend to settle the matches. As a result, the researchers decided to put corrective exercises to correct the errors that occur during the performance that lead to Teaching and developing some biomechanical variables to perform scoring skill from consistency and in order to achieve positive aspects of learning and overcome negative aspects to achieve accuracy in scoring.

As for the research problem, it was manifested in the lack of studies and research that delve into the skill of accurate soccer scoring from a mechanical point of view, and if available, they have overlooked the aspect of determining the biomechanical values for scoring a man as well as not touching on corrective exercises to evaluate performance in the scoring skill of persistence. To scoring the man as well as not to address the corrective exercises to evaluate the performance in the scoring skill from persistence.

Keywords *(corrective exercises, biomechanics, scoring accuracy)*

1-Introducing the research:

1-1-Research Introduction and Importance:

Biomechanical science is the science that has the greatest impact in teaching and developing the level of technical performance of the scoring accuracy skill and the digital level in all sporting activities, as it is considered one of the sciences that is concerned with developing sports movements through study, analysis and biomechanical evaluation as the main purpose of this science in the field of physical education is Study the causes of movement, that is, taking into account the internal and external forces surrounding the movement. Through this science, performance has become more economical and effective, and it has been able through specialists to provide sporting events with the information necessary to improve all skills requirements in order to achieve better achievements.

Football is the first game that attracts the attention of all observers, officials and those concerned with sports affairs around the world due to the privacy and fun that it offers, and the direct free kick is one of the cases that has become a major concern in football matches because of its role in achieving victory in the most difficult Circumstances and the player who is fluent in this kick has become one of the distinguished players, and for this many players seek to excel in mastering this kick, especially after the scientific development in the aspect of athletic training and mechanical foundations taken by setting training curricula according to sound mechanical foundations for training

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in this case, but the evaluation remains from During the measurement by tests, it is the case that indicates achieving the required level and distinguished performance, and through the foregoing the importance of research is evident in the fact that this skill did not have the academic time]1 [allowed for learning for the young class, which makes the process of teaching and training that skill marred by a state of deficiency and weakness so the researchers resorted To this study in order to achieve the positive aspects of learning and overcome negative aspects after being diagnosed for the purpose of evaluating and developing them, as well as work p Li is to provide and provide all players and coaches with sufficient information that makes the scoring process and its biochemical variables within their awareness and make this information within their reach to reach technical performance and achieve sporting achievement.

1-2- Research problem:

The direct free kick is one of the kicks that has become a major concern in achieving victory and resolving the outcome of the match, especially the kicks facing the goal and close to the line defined for the penalty area parallel to the goal line and the coaches are very interested in finding more than one outlet for this case within the ranks of the same team as well as my quest Most players excel in mastering this kick, but the question remains who is the best among the players who are good at implementing this kick, and as a result of the researchers' follow-up to developments in this game, note the lack of studies and research that go into the skill of scoring soccer accuracy from a mechanical point of view and that it is available Overlooked the aspect of determining the values of biochemical variables for scoring for men as well as not to address corrective exercises in evaluating performance in scoring accuracy skill and the absence of special corrective exercises based on the scientific foundations of this kick The researchers resorted to delving into this problem in preparing corrective exercises for scoring accuracy scoring contribution It is in the development of skill for presentation to trainers, which facilitates the process of evaluating performance and developing it.

1-3-Research Objectives:

1-Knowing the effect of corrective exercises on teaching and developing the values of some biomechanical variables and the accuracy of scoring from the fixed kicks of the experimental group.

2- To identify the differences in the values of some biomechanical variables and the accuracy of the scoring from the fixed kicks between the pre and post test of the two groups of the research sample (experimental and control).

3-To identify the differences in the values of some biomechanical variables and the accuracy of the scoring from the fixed kicks in the dimensional tests between the experimental and the control groups.

1-4-Research hypotheses:

1- Corrective exercises will positively influence the teaching and development of the values of some biomechanical variables and the accuracy of scoring from the fixed kicks of the experimental group.

2- There were significant differences in the values of some biomechanical variables and the accuracy of the scoring from the fixed kicks between the pre and post test of the two groups of the research sample (experimental and control).

1-5-Research Areas:

1-5-1 The human field: Players of the specialized school in Dhi Qar for the sports season (2017-2018) in football at the age of (16) years.

1-5-2- Time domain: From 20/2/2017 to 25/7/2018.

1-5-3-Spatial domain: The Specialized School Stadium in Dhi Qar Governorate.

2- The research methodology and its field procedures:

2-1-Research Methodology:

The researchers used the real experimental design with pre and post testing for the control and experimental research groups, where (George Moully) sees that this experimental design is one of the experimental designs, and this design depends mainly on the random random selection of the experimental group taking into account the following procedures when choosing Control group.

2-2 Research community and its sample:

The research community identified the players of the specialized school in Dhi Qar Governorate, who were (30) players aged (16) years. As for the research sample, it included (22) players. The sample that was chosen in the intentional way represented a percentage of (73.33%), from the original community. It was divided into two experimental and control groups, by (11) players for each group. The experimental variable represented by corrective exercises was entered into the experimental group. As for the control group, it was based on the usual method by the coach.

Table (1)
The mean, standard deviation and coefficient of variation in the study variables
Height, mass, leg length, chronological age

The sequence	Variables	measruing unit	Arithmetic mean (x(	Standard deviation (p(+	Coefficient of variation
1	Length	Cm	153 .19	6.77	%4.86

2	**Bloc**	**Kg**	**46 .5**	**3**.820	**% 7** .07
3	**Leg length**	**Cm**	**78.6**	**2.762**	**6.51%**
4	**Chronological age**	**Month**	**163.20**	**5.035**	**%5.69**

All values of the coefficient of variation were less than 30%, which indicates the consistency of the sample in all values of the difference coefficient are less than (30)%, and it is mentioned that whenever the coefficient of variation is closer to (1)%, the homogeneity is high and if it exceeds (30)%, it means that there is a dispersion, and thus the research sample at the age of (16) years is consistence in these variable.

2-3- The means, tools, and devices used in the research:

2-3-1-Information Collection Methods:

Arab and foreign sources - tests and measurement - questionnaire form - information network (Internet) - personal interviews - observation and experimentation.

2-3-2 Auxiliary tools and devices:

(1) Japanese-made Casio Xlem video camera, 2 hp laptop, Foot scan, 25m tape measure, football field, number of footballs (10) Hand Whistle, number (2), characteristic of (10) of different sizes, wall number (1), phosphorous adhesive tape to illustrate the points of the joints of the body, number (1), video and pictures to illustrate the correct performance of the direct free-kick, drawing scale length (1) (M), CDs (8), electronic medical scale (2), colored tape to divide the target (2), in Burk (its purpose is to control the approach of approaching).

2-4- Modified Test Specifications:

Test name: Scoring accuracy test skill from fixed kick to adjusted goal.

The purpose of the test: To measure the accuracy of scoring from a fixed kick to a goal.

The tools used: a soccer goal, a number of soccer balls (10), a goal-splitting tape, a tape, bork to determine the goal distance.

Method of performance: one of the balls is placed on the scoring point and the player advances from a distance of (10) yards to hit the ball strongly and the ball is fixed on the ground and with the preferred feet to the following parts. The right side of the goal, the left part of the goal, the middle of the goal. The recording / test score for each of the left and right part is (40) degrees, while the middle part (20) degrees .Each player is given (4) attempts for each part, and the best attempt is calculated for the purpose of analyzing it. The highest score obtained by the player is (100).

2-5- Piloting experience:

The researchers conducted the exploratory experiment on (1/26/2018) on Thursday on a sample consisting of (5) players representing the specialized school in football at the ages of (16) years in Nasiriyah from outside the research sample and on the field the specialized school in order to overcome the difficulties that may The researchers' orientation during the application of the main experiment.

- Identify the appropriate angle for photography and the field of movement of the performing player.
- Identify the appropriate distance and height for the camera.
- Knowing the negatives and errors that may face the researcher and the assistant team) [*]. (
- Knowing the period of the tests.
- Sufficient auxiliary staff.
- The work and efficiency of the devices and tools used.

2-6- Pre-test:

The pre-test of the research sample (experimental and control) was conducted on Monday 5/2/2018 in the court of the specialized school in Nasiriyah district in order to be able to obtain the biomechanical variables and the degree of technical performance of the scoring accuracy skill, and the researchers have proven the conditions related to the test in terms of time and place And the tools used and method of implementation and in order to work on their availability in the post test.

The application of the corrective exercises used took (12) weeks by (2) two educational units per week to reach the total educational units for corrective exercises (24) educational units, and the researchers relied on the numbers of vocabulary exercises used in biomechanics, kinetic learning and sports training football, as well as relying on some Sources that relate to that, and the corrective exercises used from Monday 10/2/2018 until Thursday 20/4/2018 were applied to the experimental group, either the control group and the special vocabulary exercises followed by the trainer were applied.

The corrective exercises used were given immediately after warming up and in the first part of the main part of the educational unit because the corrective exercises prepared by the researchers depend on a high mental focus and

neuromuscular compatibility in particular, so any fatigue in this aspect will have a negative impact in developing the neuromuscular compatibility so it was At the beginning of the educational unit.

The trainer supervised directly the application of the proposed corrective exercises, while the rest of the contents of the educational unit is of the trainer's mission for the experimental and control groups, and the researcher did not interfere in this aspect.

The coach took into account when applying corrective exercises followed in learning the motor skills as well as the gradient from easy to difficult for the players in learning the skill of accurate scoring from steadfast football.

Characteristics of the mechanical and kinetic criterion, which is the player of the national youth team (Hussein Khaled Hadi), length (1.50 cm) and Umrah (16) years, and his mass (45) kg and the length of the man (77) cm from within the specialized football school in the district of Nasiriyah Dhi Qar Governorate.

2-7- Post-test:

The post-test of the experimental and controlled research sample was conducted on Saturday 28/4/2018 at the Specialized School Stadium in Al-Nasiriyah District. The researchers were keen that the conditions should be similar to the pre-test and its procedures after the completion of the period of the corrective exercises used and biomechanical variables were extracted as well as extraction The degree of accuracy of the direct free kick skill in football and the video shooting given to residents to assess technical performance.

2-8-Statistical means: The data was processed by the SPSS statistical package and included:

1. Arithmetic mean.
2. Standard deviation.
3. Coefficient of variation.
4. Percentage.
5. Pearson Law.
6. Law (t) of symmetrical samples.
7. Law (t) for independent samples.

3- Presenting, analyzing and discussing the results:

3-1- Presentation, analysis and discussion of the results of pre and post tests of the biomechanical variables of the control group and their discussion:

Table (2)

Shows the values of the arithmetic mean and the standard deviations of the pre and post tests of the biomechanical variables of the control group.

T	Biomechanical variables	measruing unit	Pre-test		Post-test		The test
			S	±p	S	±p	
1	Approach angle	M	67.88	4.05	69 . 75	5.092	74
2	The angle of inclination of the body the moment the ball is kicked	M	15th	2.16	16	2. 55	11
3	The relative angle of the knee the moment he kicks the ball	M	146.22	9.30	14 9 8 6	4 6 6	154
4	The angled velocity of the kicked leg	M. S	331.87	41.87	3 34 .5 2	40.33	396.68
5	The height of the center of body mass the moment the ball is kicked	METER	0.720	0.019	0.7 3	0.02 5	0.780
6	Football contact time	S	0.013	0.003	0.0 13	0.0 3	0.019
7	Speed of the starting ball	M / S	14.43	1.08	16 .014	1 . 6 0	19.772
8	The starting angle of the ball	M	36.21	3.35	28 7	5 .45	30
9	The distance between the foot and the center of the ball	CM	9.3	0.3	11	1 . 35	15th

10	Maximum strength of the foot anchor	Net	745 . 36	36.79	645.36	39.79	972.72
11	Force arrival time	Tha	0. 18	0.01 6	0.18	0.015	0.1514
12	Pressure foot	Net / cm^2	93.15	6.090	95.04	7.70	197.23

We note from Table (2) that the values of the arithmetic mean for the biomechanical variables of the skill of scoring accuracy from stability to the control group did not improve with only a few percentages when comparing the arithmetic mean with tribal tests, and researchers believe that these little rates of improvement result from the application of daily exercises used to them The members of this group are coached, and the researchers attribute the reason for the lack of moral difference to the control group to the fact that the players of the control group continued in the daily exercises did not have an impact on the development of biomechanical variables for performing the skill of scoring accuracy from the fixed football, and that the exercises that they applied did not take into account Achieving the correct mechanical position for the movement of body parts, as well as in terms of applying the correct and appropriate angles for performance and the resultant failure to achieve the required speed for the kicked man, as well as not applying the required and appropriate force for the purpose of correct performance, and researchers believe that education according to a consistent kinetic pattern in general does not lead to the result of change It is required to perform and does not give reactions to the nervous system with the aim of engaging as many units as possible A movement for active participation in performance, as both Abu Al-Ella and Ahmed Nasr El-Din Al-Sayed indicated that "the relationship of the nervous system to the muscle is not limited to mere motor nerves that command it to contract through the motor units but rather it receives information about the nature of the muscle contraction in terms of the ability and speed of the motor performance angles on different the body) "]2 [

3-2- Presentation, analysis and discussion of the results of the pre and post tests of the biomechanical variables of the experimental group and their discussion:

Table (3)

Shows the values of the arithmetic mean and the standard deviations of the pre and post tests of the biomechanical variables of the experimental group.

T	Biomechanical variables	measuring unit	Pre-test		Post-test		The test
			S	±p	s	±p	
1	Approach angle	M	68.11	4.85	7 2 .00	4.96	74
2	The angle of inclination of the body the moment the ball is kicked	M	14.88	1.83	11.77	1.30	11
3	The relative angle of the knee the moment he kicks the ball	M	146.88	9.35	15 2 . 6	9.50	154
4	The angled velocity of the kicked leg	M.S	331.86	40.25	369.21	41.53	396.68
5	The height of the center of body mass the moment the ball is kicked	Meter	0.710	0.018	0.76	0.029	0.780
6	The time of the foot touch the ball	S	0.012	0.002	0.010	0.001	0.019
7	Speed of the starting ball	M / S	14.56	1.73	16.56	0.52	19.772
8	The starting angle of the ball	Degree	32.6	5.14	28.20	4.8	30
9	The distance between the foot and the center of the ball	Cm	10.2	1.06	14.1	1.60	15th
10	Pivot foot strength	Net	602.02	38.87	847.61	50.69	972.72
11	Force arrival time	S	0.172	0.01	0.15	0.01	0.1514
12	Pressure foot	Net / cm^2	94.70	7.405	187.23	12.89	197.23

We note from Table (3) that the values of the arithmetic mean of the biomechanical variables of the skill of scoring accuracy from the soccer ball stability of the experimental group have significantly improved in the post-tests, and the researchers believe that this development is due to the application of corrective exercises that applied to the members of this group, except that this Evolution cannot be predicted except by applying a test (t) to an independent sample in order to find the significance of the differences between pre and post tests. The function was significant in the differences for the experimental group due to the effectiveness of corrective exercises.

3-3-display, analyze and discuss the results of the tests Posterior Posterior for the experimental and control groups and the values of the test:

Table(4)

Shows the arithmetic mean, standard deviations and test values for the control and experimental groups in the post-test

T	Variables	Control group		Experimental group		The test
		-s	±p	-s	±p	
1	Approach angle	75 . 9 6	1.092	71.00	1.118	74
2	The angle of inclination of the body the moment the ball is kicked	6 1	5 2.5	85 .11	1 5 0.3 2	11
3	The relative angle of the knee the moment he kicks the ball	86 . 49 1	66 . 4	6. 2 15	8 87 .2	5 15
4	The angular velocity of the kicked foot	2 5. 34 3	12.33	369.2	53. 50	96.69 4
5	The height of the center of body mass the moment the ball is kicked	3 7 .0	5 0.02	7 0.7	5 0.0	85 0.7
6	Football contact time	0.013	0.003	0.02	0.002	0.019
7	Speed of the starting ball	014. 16	60 .1	56. 17	5 0.5	75 7. 20
8	The starting angle of the ball	28.7	6 . 5	3 .25	10 .2	30
9	The distance between the center of the foot and the center of the ball	11	35 .1	13	5 1.6	15th
10	Maximum strength for footing	45.36 7	46.79	0.6 50 8	70 . 88	1 7 75 9
11	Force arrival time	8 0.1	16 0.0	4 0.1	4 0.0	615 0.1
12	The maximum pressure of the bearing foot	04. 6 9	70. 2	3 . 8 18	90 . 10	23 .95 1
13	Technical performance	30 . 5	3 0.6	45 .6	95 .0	8
14	Accuracy of scoring	40	43. 6	7 5	43. 8	4 6

Table (4) shows the results of the values of the remote post-tests for the control and experimental groups of the biomechanical variables, i.e. after completing the application of the corrective exercises based on mechanical foundations for the experimental group in addition to the traditional curriculum for the control group, it is clear from all of the above that there are differences in the values of these biomechanical variables In favor of the experimental group, the researchers attribute the reasons for these significant differences in favor of the experimental group in all the biomechanical variables due to the effectiveness of corrective exercises by means of assistance as well as the logical and objective progression in giving corrective exercises and that the values of the arithmetic mean in all the values of the biomechanical variables for the skill of scoring accuracy from the stability of football The experimental group has evolved significantly in the post-dimensional tests, and this development has led to approaching the members of the experimental group from the ideal performance (criterion) when compared, while the control group, the values of the arithmetic mean of the biomechanical variables for the skill of scoring accuracy from the stability of football have not been improved. Except in a few proportions when comparing only Tribal arithmetic mediated with post-tests and these few percentages of improvement are due to the application of daily exercises that are accustomed to the members of this group, which were removed from the ideal performance (criterion) when compared to it.

4- Conclusions and recommendations:

4-1- Conclusions:

Based on the results of the research and statistical analysis of the data, the following conclusions were reached:

1-The experimental group achieved a significant development in the values of all biomechanical variables by comparing the pre- and post-tests of the scoring accuracy skill of football stability, and this is a result of their use of corrective exercises and the differences results showed by the differences between the averages.
2-It appeared that there was an evolution in the variable of technical performance and accuracy of the experimental group due to the use of corrective exercises.
3-The control group did not achieve a significant development in the values of the biomechanical variables by comparison between the pre and post tests for the skill of scoring accuracy from football stability, despite the presence of slight differences in the values of the arithmetic circles.
4-The control group did not achieve an evolution in the precision variable due to the traditional method followed by the trainer and their failure to submit to the exercises related to the auxiliary methods based on biomechanical variables.

4-2-Recommendations:

Based on the discussion of the results and what could be deduced from the statistical analysis of the data, the researcher makes the following recommendations:
1-The necessity of using corrective exercises in teaching the skill of accurate scoring from stability in football according to biomechanical variables, because of its importance and ability to give learners the best dynamic perception of technical performance based on mechanical requirements and foundations compared to the traditional method.
2-The necessity of adopting the mechanical foundations in learning to achieve the technical performance component of the specialized school in the district of

Nasiriyah, through appropriate handling of the body's position by controlling the body parts to obtain better technical performance.
3-Emphasizing the values of mechanical variables required by the skill of scoring accuracy from football stability through the use of corrective exercises to control these biomechanical variables.
4-The necessity of adopting the logical and objective hierarchy in learning the skill of scoring accuracy from steadfastness in football by splitting this skill into its four stages or sections starting with the accelerating stage and ending with the process of kicking the ball that leads to achieving the best outcomes of the learning process through its compatibility with mechanical requirements and foundations.

A template for corrective exercises used in research
Educational session: the first and second samples: the specialized school players
Number of players: 10 in Dhi Qar
Unit time: 90 min. Educational goal: Teaching the skill of accurate scoring

Section	Time	the details	Iterations	Notes
the main	**(60)m.**			
Educational section	**(10)m.**	**1. Explain the skill of accurate scoring from football stability and how it performs to players and present a model to the player who performs the scoring process) model) (Iraqi national team player(**		
Applied section **(50)m.**	5m. 12m	**- 1Jump to the top with the legs raised together to the belt level.** **2 -Marks or collars are placed on the ground and next to the ball and a distance of 15 cm from the ball and prove the foot of the pivot on the mark, then takes three steps back, then approaches the same pace of steps and the player is aiming.** **3 -The player is aiming from the**	**The largest possible number of iterations**	

(25)m. Fixed kicks	8m.	**front of the goal after taking three steps back and proves the foot on the mark on the ground and the player is aiming at the goal with the wall.**		  The coach's feedback during exercises to skill the accuracy of scoring from football stability

Note: It takes only 25 minutes from the Applied section to learn the skill of accurate scoring from sticking to soccer.

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]1 [*Academic time : It is the actual time invested in learning to reduce the loss of time during learning.

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]2 [( )Abou El Ela Abdel Fattah Ahmed Nasr El Din Al Sayed : **physiological fitness** , 1 , Egypt ,Dara thought Arab , 1993 , p.41 .