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The effect of exercises using an articulated training stand in developing the accuracy of lunge target hitting for Epee fencing junior players

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Abstract

The development in the sports field does not stop at a certain point, as the researchers found the problem through the sport of fencing and its very limited development, especially the physical and motor capabilities, which limits the achievement of achievement in it, as we see the appearance of the player at a very high level in a tournament that he cannot maintain in subsequent tournaments mostly, which puts the trainer in constant work to develop training programs and evaluate them throughout the periods and stages of training, The aim of the research was to prepare an auxiliary mean to which the proposed exercises are applied that contribute to the development of the accuracy of lunge target hit for Epee fencing junior players, The researchers hypothesized that there were statistically significant differences between the pre-and post-tests in the accuracy of lunge target hit, The experimental approach was used in a one-group manner with pre- and post-tests, and the research sample was chosen intentionally, which was represented by 7 reserve team players, then the researchers tested the accuracy of lunge target hit by using the circles on the target test for the entire body. The researchers prepared a sample of the proposed exercises using sources and references in the fields of training and fencing Sports, after completing the training period, which is (8) weeks and an average of (3) units per week, Post-tests were conducted and the SPSS statistical package was used to process the data to verify the research hypothesis and achieve the goal. In light of the results of the statistical treatments obtained by the researchers, they reached several conclusions, the most important of which is the auxiliary mean and the

exercises applied to it have a positive impact on the development of the goal set for it, they came up with a set of recommendations commensurate with the goal of the research in the necessity of using the auxiliary mean and exercises of target hit accuracy for Epee fencing junior players.

Introduction:

The sports field has witnessed great progress in various fields, the progress was reflected in the development of physical and motor abilities and the improvement of the skill and planning level of players at all levels, we often see athletes in competitions performing almost error-free movements and sports skills, with amazing and elaborate motor paths and super motor speeds that the beholder is unable to follow, because sometimes we can't determine how the movement took place, This raises several questions about how this athlete performed these movements and skills with such speed and accuracy, which resulted in this perfect movement sequence.

Such athletes are characterized by a very high level of skill performance, which is shown by the complete control of the nervous system overall muscle groups involved in physical performance and the adequacy of mental processes by sending accurate and fast signals to these muscle groups and with thoughtful timing resulting in rapid and accurate motor responses that helped to show this wonderful picture of movements and skills.

Perhaps the best example of this image is the sport of fencing, as the method of its performance requires speed and accuracy of the attack towards the opponent suddenly and unexpectedly and muscular ability to launch at once with maximum effort in a short period, As well as other physical and motor skills, due to the small distance between the players and the difficulty of motor skills in fencing, it was imperative for the player to constantly develop physical and motor qualities and improve the skill level, and building special offensive and defensive strategies represented by fast and accurate motor responses, being a decisive factor in this sport, Thus, speed and accuracy are two of the abilities that are often needed by most sports, and fencing is one of them because its motor performance is characterized by speed and accuracy. Despite the numerous studies that have dealt with the use of training devices and methods and their effects, However, many aspects still need to be studied and researched to develop them to serve both players and coaches. The importance of research comes in the use of articulated training stand and various

exercises aimed at developing the accuracy of target hitting, as the development of this ability helps in upgrading the skill level in fencing sport. Several studies have dealt with the subject of research, including the study of (Alaa Muhammad Dhaher, 2010), which aimed to reveal the significance of the differences between the pre and post-tests of the control group (which is subject to the training curriculum only), and the experimental group (which is subject to the training curriculum using the proposed device) in the level of technical performance and accuracy of lunge movement in foil for junior disabled players, as well as to reveal the significance of the differences in the post-Test between the control and experimental groups in the level of technical performance and accuracy of lunge movement in foil for the members of the research sample the researcher used the experimental method to achieve the objectives of the study, and the research sample also included eight players from the Iraqi junior national team in fencing on chairs. As for the study of (Essam Taleb, 2010), the study aimed to prepare proposed exercises in the development of some motor abilities and the accuracy of lunge in foil for juniors, as well as to identify the impact of exercises in the development of some motor abilities and the accuracy of lunge in foil for juniors and to identify the differences in the effect of the proposed exercises to develop some motor abilities and the accuracy of lunge in foil for juniors between the experimental and control groups, the researcher used the experimental method to achieve the objectives of the study, and the research sample consisted of (12) players from al-Shula Youth Forum for juniors. As for the study of (Sarku Muhammad, 2014), which aims to identify the effect of the use of rubber bands in the electrical activity of some muscles working in the accuracy of lunging movement in foil for the research sample, the researcher used the experimental method to achieve the objectives of the study, the research sample included (8) players from the Sulaymaniyah foil fencing team. We see (Abdul Hadi Hamid Mahdi & Ali Hussein Ali, 2016) study, which aims to establish a statistical relationship between the accuracy of hitting the target of the upper section of the body to the lower section in epee for juniors, and the researchers used the experimental method to achieve the objectives of the study, where the research sample included (7) epee reserve juniors fencing players. As we see in a study (Bassam Abbas Mohammed& Abdulhadi Hamid Mahdi 2012), which aims to identify the relationship of lunge accuracy with the speed of motor response, balance, and some defensive and offensive skills for foil players, the experiment was applied to the foil players of Baghdad clubs, and the results showed a correlation between most of the research variables such as accuracy and lunge movement

performance and some offensive and defensive skills and the speed of motor response and balance of foil fencing players. the study of (Abdulhadi Hamid& Ali Kamal &Bashar Mohammed Mahdi, A. H., Hussein, A. K., & Znad, B. M. (2021)) concluded that the fluctuation in the level of players is due to the poor level of training and referees and the lack of training courses, which is a technical matter, as for the study of (Abdulkarim Fadel, Manar Haitham 2022), where the researchers concluded that there is a significant correlation between the level of cognitive achievement and some basic skills in the sport of fencing. The sport of fencing is one of the individual games that need high skill performance in order to overcome the opponent and achieve victory, therefore, skill performance needs the best possible methods and the latest available means to develop it, and that the use of assistive training devices and aids is not an underestimation of the importance of the trainer, but rather supports him in crossing and overcoming all the obstacles that he encounters during the training process، as well as the use of modern training devices and means, it has a big role in developing the aspects that the player's performance needs to practice effectiveness at the highest possible level to achieve the desired goals, as well as reducing time and effort, thereby facilitating the coach's task during the training process. where the main duties of sports training are aimed at reaching the highest possible athletic level by developing physical, motor, skill, strategic, functional and psychological requirements, physical and motor requirements are one of the most important of these requirements that contribute to achieving high Sports levels, and the fact that the two researchers are experienced in fencing sports, we found that there are obstacles, namely the limited development of physical and motor capabilities, not reaching advanced stages, the constant fluctuation of the level and the lack of interest of coaches in training programs, as the player is at a very high level in one tournament, but in another tournament he may come out during the group stages, The role of the trainer in the development of training programs and their continuous evaluation and attention to the integration of training work and its balance should not stop throughout the periods and stages of training.

Hence, the problem of research has been identified in the following question: is the coach at this age working to give exercises for target hitting accuracy to allow mastering it as a very necessary requirement for training and competitions? To find out, the researchers considered manufacturing an articulated training stand that includes the entire body, since the legal target in Epee is the entire body, and exercises are applied using it during the training units, conducting this research helps

us to reach accurate answers that lead to follow the best to invest the time allocated for training and reach highest levels. The importance of research comes in the use of articulated training stand and various exercises aimed at developing lunge target hitting accuracy, as the development of this ability helps in developing the skill level in fencing sport.

Method and tools:

The researchers used the experimental approach to suit the nature of the problem and to achieve the research objectives using the method of a single experimental group with two Tests pre- and post. The research community has been identified. Where junior Epee players were selected and their ages ranged from (16 to 18) from the first team and the reserve with a total of (16) players, and the research sample consisted of (8) players selected intentionally from the reserve team, (1) player was excluded for the pilot study, so the main research sample became (7) players and constituted a percentage of (43.75%) from the original research community, see table (1).

Table (1) shows the arithmetic mean, median, standard deviation, and torsion coefficient

Variables	Height	Mass
arithmetic mean	176.571	70.429
Standard error	1.556	2.662
median	177.000	66.000
Std.	4.117	7.044
torsion coefficient	-0.193	0.587

Field research procedures:

The researchers designed a proposed aid, as they are specialists in the field of training for the sport of fencing, noting that the aid is an articulated training stand that helps the coach in training accuracy. The stand has a legal fencing sword attached to it, and the entire stand is in an on-guard position as in match conditions. It is used as an aid in training or to teach other skills for fencing players, as well as the development of neuromuscular coordination by linking the work of the eye and

arm at the same time and the repetitions of hitting the target and lunging, as well as fleche skill. It is also possible to control Its height to make it suitable for the different heights of the players, as well as the use of a rectangular stand represents the body of the player that is covered with a white cloth Pinned on it an articulated leg an armed arm, and a legal mask.

The aid consists of the following parts: -

1- The upper part:

A: The rectangular stand, according to the fencing player's measurements.

B - Armed arm.

c: legal mask.

2- The lower part:

A- The base (stand): on which the articulated leg is fixed.

B- A handle that helps raise the person's level.

Test used in the study:

The appropriate test was selected based on scientific sources and references and on the research requirements, in light of this, the test was as follows:

Name of the test: target hitting accuracy in the lunging skill of fencing (modification) (Abdulkarim Fadhel Abbas, 2000, pp. 33-34)

aim of the test: lunge target hitting accuracy.

Necessary tools: articulated training stand representing the legal target of epee weapon.

Description of the performance: the tester stands in the on-guard position in front of the training stand after the equipment is fully connected and marks are placed on the ground to determine the position of the feet in the on-guard position so that the tester can touch the stand with the point of the weapon with a lunging motion. the first arbitrator gives the required number to hit in a specific place. the second arbitrator determines the speed of the execution attempt by the tester. when the player is delayed in execution, the attempt is considered a failure, and the player is given (10) attempts.

Scoring: Only successful attempts are scored that are determined by the conformity of the instruction (it is by the arbitrator who asks to lunge at a certain number) with the place where the touch was obtained.

After completing all the preparations, the researchers conducted the pre-tests on Wednesday, corresponding to (12-1-2022) at ten o'clock in the morning at the National Center for Gifted Care-Fencing Hall, where the conditions related to the test, such as the place, time, and method of implementation, as well as the assistive staff and the devices used in the test were installed to achieve the same conditions as possible during the post-tests, A form was prepared to record the results of the hitting accuracy test in the fencing lunging movement (modified), and after the completion of the post-test on the research sample on Saturday (14-3-2022), taking into account the same conditions. The results were statistically processed on the research sample as shown in Table (2). Exercises were prepared using locally manufactured tools designed by the researchers to reach the set goal according to scientific bases, taking into account the rule of gradation in difficulty by increasing the number of movements and body parts involved in the exercise, and the number of exercises (38) proposed exercises to develop hitting accuracy were applied during (8) weeks by (3) units per week for a total of (24) and with a time ranging from (30-20) minutes from the main section in the special preparation period starting from (15-1-2022 until (12-3-2022) note that the rest periods between repetitions ranged from (15) seconds to (55)seconds and the rest periods between the groups ranged from(30) seconds to (90) Seconds. The change in the intensity of the exercises was made by increasing the difficulty of performing the exercises by adding more movements of the arms or legs and by increasing the number of repetitions of the exercises with a constant performance time as well as reducing the rest periods once between repetitions and again between groups. After the proposed exercises were applied, the researchers, with the help of the assistant team, conducted the post-test on the research sample on Saturday (14-3-2022) taking into account the same conditions.

Table (2) shows the arithmetic mean, standard deviation, and standard error between the pre-and post-test

Test	Arithmetic mean	Std.	Standard error
Pre	5.000	0.817	0.309
Post	7.14329	1.345	0.508

Results:

After the researchers performed the pre-and post-tests on the research sample, the results were statistically processed to reach the research goals and to verify the assumptions formulated in it.

Table (3) shows the difference of the arithmetic mean, the standard deviation of the differences, the calculated (T) value, the level of significance, and the statistical decision between the pre-and post-test

Test	arithmetic mean Differences	Deviation Differences	(T) value	Sig.	Statistical decision
accuracy	2.1429	1.345	4.215	0.006	significant

Table (2) (3) shows the arithmetic mean of the research sample in the pre-test (5.000) and the standard deviation (0.817), and in the post-test the arithmetic mean became (7.14329) and the standard deviation (1.345), and the average difference of arithmetic mean between the pre and post-tests was (2.1429) and the standard deviation of the difference (1.345), and the value of (T-test) (4.215). When comparing the value of the significance level (sig) of (0.006) with the significance level (0.05), which is smaller than it under the degree of Freedom (7), which indicates a significant difference between the pre-and post-tests of the research sample.

Discussion:

The results of Table (3) in the tests of the hitting accuracy of the lunging between the pre-and post-tests of the research sample showed significant differences in favor of the post-test. The researchers attribute this is due to the fact that exercises with the articulated training stand used by the researchers in the training program had a positive impact on the development of stabbing accuracy in the research sample. The researchers believe that an important reason that led to the development of the level of lunge-hitting accuracy is the process of repetition in exercises with the help of the training stand. It is noteworthy that the element of accuracy is one of the requirements for fencing, represented by the accuracy of scoring points, knowing

that the sport of fencing needs to provide the ability of accuracy to its practitioners, as a fencer who does not master accuracy cannot excel in his performance. Ali Hussein Ali (2016) states that the more an athlete has the necessary accuracy as a motor characteristic, the more superior he becomes in obtaining points from his competitor, especially players who have special physical specifications in the limbs of the body specifically, as there is a mutual relationship between accuracy and parts of the body on the one hand, And accuracy and senses on the other hand. By identifying the movement paths and their sections and analyzing them accurately, the more efficient the senses are, the higher the impact on the ability to accurately perform motor performance. The development of accuracy stems from the use of specific training to the type of event, or race, as well as determining the place of its training at the beginning of the training unit or in the main section; (Hammad, Mufti Ibrahim. 2001) because it is associated with the amount of preparation of the central nervous system; the fact that accuracy requires high concentration; and it puts a large burden on the nervous system" the researchers believe that the use of exercises with the aid achieved a positive effect because the exercises were applied scientifically studied and the role of the trainer in the way of implementation led to the development of the accuracy of lunging skill through the acquisition of new experiences for him, which led to relative changes in performance. The researchers agree with (Majeed, A. F., & Mahdi, A. H. (2022) as well as (Shalaka, A. J., & Mahdi, A. H. (2022) and emphasize that the effective use of tools contributes to enhancing learning experiences. They also stress that the selection and design of exercises should be compatible with the available tools. Furthermore, diversifying the use of tools can maximize learning experiences and create a comfortable learning environment. The researchers attribute this development to the effect of specially designed exercises performed in an organized and systematic manner, with appropriate training intensity and adequate rest periods.

Conclusion:

After presenting, analyzing, and discussing the research results, the researchers concluded the following:

Exercises using an articulated training stand have a positive effect on developing lunge target-hitting accuracy in epee weapon. The researchers recommend the following: to prioritize the use of exercises involving the training stand in training programs to improve lunge target-hitting accuracy in epee weapon in all clubs.

Additionally, they suggest conducting further studies and research using exercises with the suggested training stand with other age groups to enhance offensive skills, particularly in epee weapon.

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