Compared the Power Curve and Time as a Function to the Accuracy of the Performance of Straight Punch Right and Most Important Variables Kinematic in Martial Arts Players for High Levels Using the Three-Dimensional

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Abstract
This paper hence the study and discuss the characteristics curve (force - time) to get to know (maximum and less powerful registered on the curve, the maximum and minimum length of time for such a force, average power) using competitor Default to measure objectively blow simulate the atmosphere of competitions and tournaments as well as to identify some of the variables Kinematic (angle starting, the starting speed, etc) that affect this skill. And using a sample composed of 12 to Four weights are players and is divided into (Boxing 4players , Mwai Tai 4players ,Kung Fu 4players) where you will stand the player in front of platform strength and sheds on this platform Data Show number two for a rival offer already been filmed through a camera three-dimensional as the players put on their eyes polarized glasses to watch the player offered by two data Shaw on a force platform, which sees the player to see the three-dimensional simulated virtual reality during the match. Study concluded Confirmation on the terms mechanical accompanying the accuracy of performance, where she plays a prominent role in the proper implementation of punch straight. Well as the development of physical attributes special and appropriate for the application of the proper functioning of the punch straight and according to the conditions Biomechanics and make the situation right of the legs, trunk and arms to achieve the speed of the effectiveness and accuracy of performance punch straight. And the adoption of these laws Biomechanics for different age groups for the development of the sport of martial arts, especially the younger age groups.

Keywords: Power curve and time, Martial arts, Competitor default, Three-dimensional.

1. Introduction

The field of sports its one of the important areas in peoples' lives, so it was continued interest movement sports to achieve the highest levels of achievement sports whether it's using sports science theory and practice or scientific methods and modern technologies, this was not the trend towards sporting excellence confined to developed countries only, but bypassed to other countries, as a result of scientific efforts diligent scientists and technicians in all areas to address weaknesses and to identify the facts and investment (that were influences internal or external) and use it to develop achievement, and reach accurate measurements designed devices.

Which is characterized by low to mistakes to obtain accurate results, and it was to the direction of scientists to sports field an effective contribution, especially in the martial arts games as characterized current achievements by comparing them with past achievements high levels. Where the focus of the study on the amount of force exerted and the time by the player during a certain period of time to get to know the true values of force exerted during the motor performance to reach higher achievement and link variables kinematic task with a direct impact on the power curve and time(TJ.Walilko,DC.Viano2005) that is because of the strike force of a direct impact on getting points or settle the game knockout.

So study the effectiveness of the strike straight in terms of variables Kinematic and study curve of power and time for this skill or use methods, tools and technical equipment of different enables students to identify the details of precision machine gives us indicators (strengths and weaknesses in the technical performance of the skill), which was unable to researchers previously to reach accurate results .The objective of the lack of laboratory equipment and tools so special. So reflected the importance of research in the study of the relationship some Kinematic(Barham and Jerry1978) variables power curve and time to blow straight to the players martial arts (boxing, kung fu, Mwai Tai) and comparison between three Kinematic using competitor Default

It is through the experience of the researcher and field follow-up of many sources of scientific and personal meetings with coaches and players noticed a weakness in the accuracy and speed and strength of the strike straight time each during exercise or competition perform this skill in front of him so researcher found necessary to study this issue to determine the practical constraints, especially to study Multi power through force measurement platform can contribute in the development of many solutions to the problems suffered by players martial arts as well (Cordes, 1991) ", for providing us with numeric values as an indicator of the strength and the time of impact. In addition to the study of the most important variables basic Kinematic and relationship characteristics curves (force - time), and that researcher believes it plays a major role in achieving the player for higher achievement in martial arts games.

2. Methodology

2.1 Subject

Using a sample composed of 12 to Four weights are players and is divided into (Boxing 4 players, Mwai Tai 4 players, Kung Fu 4players) where you will stand the player in front of platform strength and sheds on this platform Data Show number two for a rival offer already been filmed through a camera three-dimensional as the players put on their eyes polarized glasses to watch the player offered by two data Shaw on a force platform.

2.2 Three-dimensional imaging or Holographic

Three-dimensional imaging is a way to portray recorded a three-dimensional description of the objects (Javidi and Okano, 2002). In this way, mimic the work of the eyes. The two eyes be two images from slightly different angles to the body because of the visual difference distance between the eyes, Eyes will sends images to the brain as it integrates the two images shows us three-dimensional thing EX, we can estimate the depth of the person or the tree in the picture, as well as estimating the near and long term.

The use of one eye, we cannot determine the depth or after the visual things. As the researcher used for this purpose two camera imaging the three-dimensional (Zhang and Faugeras 1992) through the installation procedure, wrought-iron distance between cameras is (5.6) cm, the same distance between the eyes, and as shown in the figure 1-2 , and the process filming Babylon Club Sports on 20 / 1/2013 of the player martial arts and was a period of imaging time is 30 seconds, as usual, but in every shot depicting two images, one from the right is relatively and the other from the left relatively to the player. The researcher photography is based performance total of punches and some of the movements of the pieces, defense and attack where you installed the signs of phosphorous protective head default competitor to identify the points that will be recorded by the arbitrators during the performance of the sample for the experience and give degrees of accuracy for each attempt

Figure1. Shows two cameras with lenses Camera trio used in the research to portray competitor default

Figure 2. Picture competitor default

Technique was used three-dimensional design of the default form style (Polarized Images) by portraying player (camera three-dimensional) (Nayar,1992; Shree, 1991, Oren and Nayar, 1995; Rahmann, 1999; Saito, 1999) the researcher designing opposed cinematic sealed with mini Data show first to the right of the bar and the second to the left of the bar as proving Shaw it has developed a filter Polarized front of each projectors it has been determine how the filter first address to data show right on the X axis and filter the second front data show left on the Y-axis to be a polarization different between the two devices (data show) as it allows the filter first X passage of radiation resulting from data show right on its axis, and filter the second Y allows the passage of radiation resulting from data show left on and display of articles centered on a single screen, as we will see that the image became hesitant in Figures 3-4.

Figure 3. Explains how to design a virtual competitor using three-dimensional technology

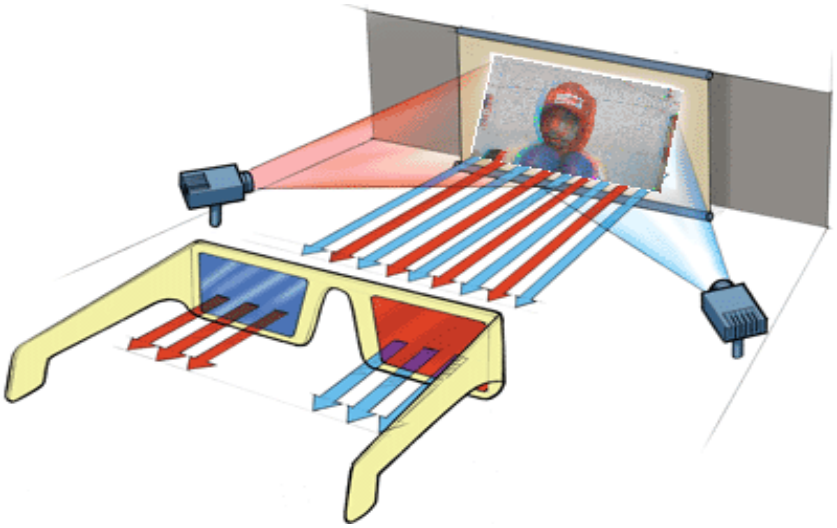

Figure 4. Shows how to display the default rival on the force platform

3. Results and Discussion

In the following, we summarize the results, observations and interview data, significant differences between the variables biomechanics in three games as shown in Table 1.

Table (1)
Summary of the significant differences between the variables Biomechanics the multiple analysis of variance for each game

Mwai Tai				**Boxing**				**kick boxing**
Total performance time	Time punch	Shoulder angle	Trunk inclination angle from the vertical plane	Total power	Rate power	An area under the curve	Maximum power	Speed punch
0.100	0.011	10.69	2.368	1167.73	181.146	1167.73	733.74	7.07

This shows that the boxing players they have a high level of accuracy when the rate of force and the total force is weak, unlike players Mwai Tai where the force levels have very high, but the percentage of accuracy in punching against rival default was very weak, This is clear from the arithmetic mean and standard deviation of accuracy in the three games in Table 2.

Table (2)
Shows the arithmetic mean and standard deviation of accuracy in the three games

Game	The arithmetic mean	Standard Deviation
Boxing	3.969	.308
kick boxing	3.125	.308
Mwai Tai	2.906	.308

Showed differences in variable time the overall performance of the players kick boxing and Mwai Tai own path physically taller than the players boxing, which generates rate higher power because whenever the path of punch-consuming power was generated higher as the (amount of movement of the body possessed by when a certain speed is directly proportional to the force exerted and inversely with the time and this is a clear indication of the importance of speed in getting the body to the largest momentum (the amount of movement(the momentum of the body = body mass x velocity) (CHARLES SIMONIAN1981).

In a variable time punching the relationship was significant in favor of the boxing game, as was the time of punch has high compared to a game of kick boxing and Mwai Tai, making the rate of force has weak as it is attributed researcher reason that the angle of the shoulder of the players in boxing have a range greater than the rest of the Games(Jones 2002), as the larger the angle of the shoulder reduced the outcome of force.

Show search results in a variable angle of inclination trunk there are statistically significant moral and in favor of boxing game and explains the researcher this result to that time the overall performance short because the players boxing using the style of defense and away from the opponent and try punching quickly, so that whenever the inclination angle Large trunk was time performance total short-leading to the kinesthetic Short track is also causing less power production through a variable maximum strength as she was boxing game is less Maximum power compared with a game kick boxing and Mwai Tai.

This explains Helms in the outcome variable maximum strength as the results showed there are statistically significant and moral and in favor of a game Mwai Tai attribute the researcher reason that the angle of inclination trunk was smaller compared with boxing and kick boxing as well as in measuring the angle of the shoulder, according to the Pythagorean theorem "affected the outcome of force by the corner The more small corner was a huge amount of collected this increase remains to become a list angle (90o) then begin value downward collected and that an angle (180o), the value of the outcome of the force be smaller values(Solovey1983 , Fitzmaurice1982).

Although Mwai Tai game time variable overall performance compared with the longest boxing kick boxing, but did not achieve a top speed of game kick boxing which shows that their kick boxing attacks have accelerated top of players Mwai Tai and boxing. The statistical significance of the correlation relationship between the power curve and the time and accuracy of punch straight and most important variables Biomechanics for the players in the martial arts punch straight right using the default competitor in table 3-4.

Table 3.
Shows the relationship proportional correlation between variables search

Total power		Rate power		Total performance time	
Rate power	0.347	An area under the curve	0.347	Speed punch	0.512
An area under the curve	0.999	Maximum power	0.478	Precision	0.410
Maximum power	0.606	Speed punch	0.374		

Table 4.
Shows the relationship inverse correlation between the variables search

Rate power		Total performance time		Time punch		Knee angle	
Time punch	-0.681	Trunk inclination angle from the vertical plane	-0.300	Speed punch	-0.308	Speed punch	-0.318
Shoulder angle	-0.635						

It's also appeared in the table (3-4) that there is a relationship high spirits among the total force and variables rate power and An area under the curve and explains the researcher of this relationship that the rate of force came from the output of the total force on a number of this force , and that the relationship between the total power and An area under the curve came from a total force multiplied by the time of connection punch , and the results showed that the relationship correlation between the total power and variables of maximum force and the game as the researcher believes that the variable maximum power is the biggest force in the shortest amount of time , it means power fast which gives the appropriate capacity through data the job done and distance and in which it operates muscle.

In a variable rate of force appeared relationship spirits with a variable An area under the curve and this shows that whenever getting space An area under the curve has increased the value of the force recorded increases depending on the level of pay of force to the player when the performance punch straight, which in turn affects the level of performance achieved , and this is a clear signal (to the importance of the force exerted during the payment in the integration of streamlined performance and achieve the desired speed of the punch and gained the momentum needed to achieve the best performance kinesthetic).

The relationship between the variable rate power and angle of the shoulder moral as explains the researcher that the games martial arts requires a performance in which the integration of power characteristic speed of the arms as it cannot be achieved paths mobility centers of gravity parts of the body without the integration of defenses muscles of the body parts working , which is the final outcome of the rate of force , while popping the relationship between the variable rate power and variable speed punch spirits because there is a direct correlation between the rate of power punch straight length, that the preparatory period for the punch help creating power of the through wicking trunk and thus get a larger rate , which in turn achieves high - speed performance punch . any reason

is an investment preparatory section of the punch motor to increase the transport rate for large power and speed you high. It appears from the table (3-4) correlation between the variable time overall performance and the angle of inclination trunk because the greater the Milan torso forward, the faster the punch which leads to an increase in the time of the overall performance of her, has been observed analysis of flour that the movement of the arm of Foreign Affairs is a wider range movement of the arm of the Interior.

emerged correlation between variable time punch and variables angle of the shoulder and the game and the speed of punch and researcher believes that the application of the movement of punching require high speed of the shoulder joint , because the shoulder belt is one of the important parts of that work that the direction of motion path is true as much as possible as well as the shoulders pose with the rest of the trunk block key , which is the largest blocks parts of the body affecting the transfer of momentum to the arms and cannot be achieved without making the power and speed and agility parasites to achieve success in the application of this skill, and this is what makes the relationship seem a burden between the time of punch and these two variables

May be used test and measurement equipment for the purpose of forecasting, and is intended to result in the expected future in the light of the results of the test and measurement, and for some uses appropriate statistical methods such as regression can even pick individuals who can predict their success according to a particular test. So used the media of statistical researcher simple linear regression and multi- purpose access to the prediction of the rate of contribution for variables Biomechanics and variable precision, the following table shows the percentage of contribution between the variables. The researcher used the way downward (stepwise) and working on it every time you add independent variable (predictive) to the regression coefficient , it performs a test removal to get rid of the independent variable least interest , and so re- evaluate the regression coefficient constantly to be able to remove the independent variables surplus .

Table (5) that the highest percentage of contribution in accuracy was variables rate power and variable speed punch as it stood in a row (45%) (40 %) and the researcher believes that the rate of force a significant impact in achieving the integration of all variables Biomechanics other seemed to martial arts as the strength is the real reason of a change in the speed of the body and in accordance with the laws of motion of the three Newton through Note circles computational accuracy between games emerged that boxing game is the highest accuracy of the game kick boxing and Mwai Tai while the circles computational boxing game in a variable rate power and variable speed punch the youngest of the game kick boxing and Mwai Tai, as well as the calculation of circles appeared in a variable precision weights was the weight (60) more accurate than the rest of the weights while the rate of punching power and speed for this small weight compared with the rest of the weights (Solovey, 1983). Since the rate of force are the real causes of speed , according to Newton 's laws . The martial arts games from the Games open , not closed , the martial arts games where discount is in constant movement , so researcher finds greater speed and power punching accuracy are weak. Both the Zainal, (1994); Amish (1990) and Staon (1991) that he must focus on accuracy in performance and then on the strength if that accuracy takes precedence in it as important.

Table (5)
Shows the percentage contribution to the variable accuracy of the variables search

Model	R	R Square	Adjusted R Square	Affiance	Sig F
Rate power	0.838	0.70	0.55	45%	0.032
Speed punch	0.798	0.636	0.60	40	0.007

4. Conclusion

Confirmation on the terms mechanical accompanying the accuracy of performance, where she plays a prominent role in the proper implementation of punch straight. Well as the development of physical attributes special and appropriate for the application of the proper functioning of the punch straight and according to the conditions Biomechanics and make the situation right of the legs, trunk and arms to achieve the speed of the effectiveness and accuracy of performance punch straight. And the adoption of these laws Biomechanics for different age groups for the development of the sport of martial arts, especially the younger age groups. Adoption of precision testing and take advantage of the test sample prepared a future researcher to measure the accuracy and developed.

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