

A Suggested Modification of Stop Order from Referee During Fighting by Using an Additional Light Stimulus in Kungh Fu Sport

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Abstract: The present research aims to suggest a modification of stop order from referee during fighting by using an additional light stimulus. The researcher used the descriptive method by using the (Pre -Post) measurements for a single group. The sample of the research was from Minia Kungh Fu championship and zone athletes registered in federation 2009/2010, men's general. The researcher selected the research sample from 10 athletes. 20 Stop athletes were taken (game suspension) during body contact and 20 stop athletes during blows and kicks. The measurement was made for 5 games, before using the light stimulus and another measurement for the same athletes after using the light stimulus. There were statistically significant differences between the pre measurement (auditory stimulus and hand sign) and the post measurement (auditory stimulus, hand sign and light stimulus) for the experimental sample in stop (game suspension) during contact, kicks and blows in the direction of post measurement. The suggested modification of don't move (stop) order during fighting by using an additional light stimulus in Kungh fu sport led to improvement athletes quick response for stop order. The researcher recommends calling officials in international union and Egyptian union of Kungh fu to use the suggestion (light stimulus) in referee for its great effect in preventing some injuries and fights.

Key words: Light • Kungh fu • San Sho

INTRODUCTION

Kungh fu sport is considered one of self-defense sports even it is the most famous name in the world of cinematic technology. Recently technology competes in various fields and aspects until it research sport world. Importance of sport technology can be known through a broad and quick look on Olympic sport achievements, where we notice the extent of huge advancement of skillful and motor performance level for different sports champions in amazing way. This is due to the huge technology advancement that can resolve several problems and obstacles [1].

The problem of the research appeared when the researcher in men's general san shou republic championship, Egyptian Kungh fu federation charged the researcher (who works as part time referee in federation) to work as a referee in this championship. The researcher and the assistant referees found themselves facing a problem, since playing was on the first place "champion". During fighting, the researcher gave stop order by calling and hand sign. Immediately one of the player stopped and lowered his arm from his face, where

the other didn't respond and made a kick which affected the second player as he fell unconscious and didn't complete fighting. After the second call, the player stopped.

Here is the problem, the referee gave his sign of unconscious winning according to the game law, since it is a kick after order resulting in an injury and the play can't be completed. The kicker, the coach and the administrative came and seared that they all didn't hear stop order because of game sensitivity and public shouting. The referee researcher talked to himself that he himself hardly hears his voice. Hence, the researcher's idea came that there must be another stimulus other than the sound to announce stopping fighting. So, the idea of using light in the whole court appeared to express stopping. Even if both players are away from the referee and don't see him, the sign of lightening which appear in the whole court, will give stopping order.

Through studying auditing - visual path, the following facts are shown:

- Natural effect for vision is light and natural effect for hearing is the sound.

- Hearing results from vibration mechanical movements in out ear drum, then middle ear bones, inter ear vibration, liquid to hearing nerve.
- Light is faster because retine response is electronic and visual path is low in cells numbers.
- Sound speed in air is about 3800M/sec, light speed in empty is 299792958 M/sec. although light speed in air is less/low than empty but it is still greater than speed by million times [2].

The present research aims to suggest a modification of stop order from referee during fighting by using an additional light stimulus. The researcher acknowledged scientific studies and researches that deal with designing electronic apparatus in different sports. Khalil [3] used the experimental method on a sample of ground tennis athletes at Tanta club. The most important results were the appropriateness of electronic apparatus designed to analyse technical performance of ground tennis athletes. Also, the apparatus helps in reducing time and saving effort for athletes and coaches in analyzing tennis athletes' performance.

Aly [4] aimed at designing an electronic apparatus by using laser ray to record failure attempts during take off in jumping events (broad - triple - high). The researcher used the experimental method on a sample on 20 bread - triple and high jumping athletes from Gharbia governorate clubs. The most important results were the Appropriateness of the electronic apparatus designed to record failure attempts in events under research and the possibility of introducing and modification on the apparatus according to any modification in international law of athletics for amateurs. The apparatus was evaluated by a committee consisting of specialized experts who approved apparatus appropriateness for refereeing.

Adbel Fatah [5] aimed at designing an electronic glove which is suitable for training high levels in boxing sport to record the number of valid blows as well as calculate time period spending in directing blows numbers. The researcher didn't use a study sample since the research nature doesn't required a sample. The most important results were the appropriateness of the designed electronic glove in terms of its accruing and ability to work and gained 91%.

Tegner [6] aimed at designing an apparatus to measure voluntary reaction time in Karate. The researcher used the experimental method. The apparatus was selected on a sample of 4 athletes. The most important results were the result of reaction time is little for 3 attempts of 4 attempts by which the athletes performs. The

researcher showed that the apparatus needs further tests for training.

Shams EL-Dean [7] used the experimental method. The study sample was represented in Egypt Karate league specialized in Kumittee of 24 male and female athletes. The most important results were that the electronic referee apparatus helped in taking decision accurately and imperially. It helped in making immediate results during games without objections from athletes.

El-Sayed *et al.* [8] used the experimental method by using (The pre - post) design for two groups, one is the control group. Sample was from notional project juniors for preparing juniors of national council for sport at Minia governorate of 20 juniors. The most important results were that the suggested starting block led to an improvement in junior's record level. The suggested block led to stimulus arrive with equal rates without any time differences relative to all athletes.

MATERIALS AND METHODS

The researcher used the descriptive method for its appropriateness for this study nature by using the (Pre -Post) measurements for a single group. Community of the research is represented in Minia zone championship for Kung Fu and zone athletes registered in federation 2009/2010, of men's general. The researcher selected the research sample from 10 athletes. 20 stop order (play suspension) were taken from their games and another 20 stop without contact during blowing and kicking, as much as 4 stops for each athlete. The measurement was made in 5 full matches, before using the light stimulus (lighting) and another 5 matches for the same athletes after using the light stimulus.

Tools of Data Collection:

- Receiving unit of the used apparatus (Appendix 1).
- Sending unit of the used apparatus (Appendix 1),
- Four red sport lights work with electricity 1000 watt (Appendix 1),

Method of Application: A pilot experiment: After preparing the unit, the researcher experimented it several times and connecting it with specialized lighting, the researcher experimented the suggested apparatus in a single match other than the basic experiment mates as a pilot study, to make sure of the extent of appropriateness, experimenting the apparatus and the ability of using and application later.

The basic experiment: During the zone championship (activated) of men's general the researcher measured the time from the moment of referee order to stop the match (suspension) for the tenth athletes of the research sample until the actual stop for these athletes by the stop watch without using the new sign (the light stimulus).

With the same method after three hours later, the researcher made the same measurement on the same athletes in the same matches (i.e. the matches were played another time) but the new sign was used (the light stimulus) during stop order (game suspension). All stops excess than four were removed for each athlete inside the match, during the pre - post measurements. The researcher accepted measuring stop time since the moment of referee sign to stop until:

- The two athletes leave each other and separate during body contact.
- No kick or blow appears from both athletes during kicking or blowing.

Hypotheses of the Research:

- There are statistically significant differences between the pre-measurement (auditory stimulus - and hand sign) and the post measurement (auditory stimulus, hand sign and light stimulus) for the experimental sample in stop (games suspension) during contact in the direction of post measurement.
- There are statistically significant differences between the pre-measurement (auditory stimulus - and hand sign) and the post measurement (auditory stimulus, hand sign and light stimulus) for experimental sample in stop (game suspension) during kick, or below in the direction of post measurement.

Terms Used in Research

Light: A series of electromagnetic waves in a specific frequency space since each color has its special frequent a specific energy density for that color [9].



Sound: A series of mechanical rarefactions moving in physical million until they reach ear drum causing its movement, consequently to hearing sense [9].

Wushu Kungh Fu: one of self-defense sports by using hands and legs where it is divided into two basic sections, San Shou and methods where each of them has its special championship according to international familiar bases and rules [10].

San Shou: It is an actual fighting between two persons equal in age and weight; it is of two rounds in which athletes compete with different methods such as kicks, blows and wrestling under special laws [10].

Stop Order (Game Suspension): All stops that referee ordered to give a specific decision or judgment other than round and or all the game (A Procedural Definition).

Appendix 1:

- Receiving unit of used apparatus: this unit consists of small box of 150g weight, 10 cm height, 2cm width, inside it there are a set of resistances for sign reception and translate it to electricity for spotlights from this unit coming four wires, two for spotlights and two for electricity pass inside this unit, from this unit coming a sensory to receive the sign.
- Wireless sending unit": consisting of a small wireless transmission apparatus (remote control) of 8cm height, 2cm width and about 20g weight and has a set of keys to open and close the electric circle and this unit works with a battery of 12volt.
- Spotlight: four spotlights with 1000watt for each of red color. Red color was used according to what is followed in public life style such as traffic lights, since red color is of high density, so the response to it is higher in reception cells of retina. The response to red color is faster because its sense is associated with fear leading to quick response.



Table 1: Statistical differences between the pre measurement (auditory stimulus and hand sign) and the post measurement (auditory stimulus, hand sign and light stimulus)

Stop (game suspension) in body contact	Measurement unit	Pre test		Post test		M.dif	St. Div.dif	T test	Significance level	Direction
		Mean	St. div	Mean	St. div					
	Second	2.365	0.416	1.946	0.453	419	0.348	5.386	Significant	Post test

Table 2: Statistical differences between the pre measurement auditory stimulus and hand sign) and the post measurement (auditory stimulus, hand sign and light stimulus)

Stop (game suspension) in kick and blow	Measurement unit	Pre test		Post test		M.dif	St. Div.dif	T test	Significance level	Direction
		Mean	St. div	Mean	St. div					
	Second	0.815	0.257	0.503	0.101	0.312	0.273	5.11	Significant	Post test

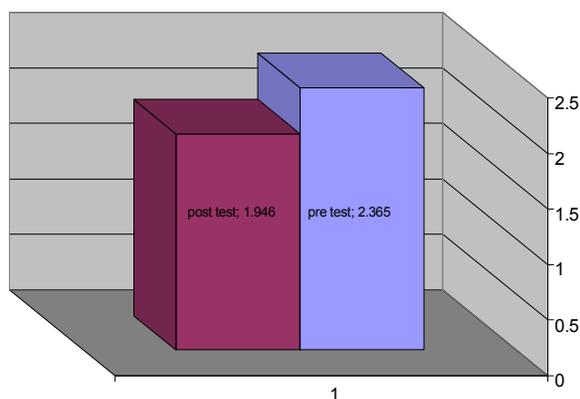


Fig. 1: Statistical differences between the pre measurement (auditory stimulus and hand sign) and the post measurement (auditory stimulus, hand sign and light stimulus)

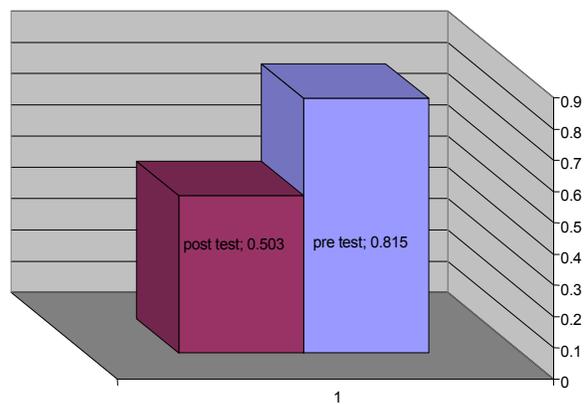


Fig. 2: Statistical differences between the pre measurement auditory stimulus and hand sign) and the post measurement (auditory stimulus, hand sign and light stimulus)

RESULTS AND DISCUSSION

It is show from Table 1 that there are statistically significant differences between the pre measurement (auditory stimulus and hand sign) and the post measurement (auditory stimulus, hand sign and light stimulus) for the experimental sample in stop (games suspension) during contact in the direction of post measurement. It is shown from Table 2 that there are statistically significant differences between the pre measurement auditory stimulus and hand sign) and the post measurement (auditory stimulus, hand sign and light stimulus) for the experimental sample in stop (games suspension) during kicking in the direction of post measurement.

- Through the research hypotheses and to achieve the research goal and according to the found data that were treated statistically, the researcher found the following:

- It is shown from Table 1 that there are statistically significant between the pre measurement (auditory stimulus and hand sign) and the post measurement (auditory stimulus, hand sign and light stimulus) for the experimental sample in stop (games suspension) during contact in the direction of post measurement.
- It is shown from Table 2 that there are statistically significant differences between the pre measurement auditory stimulus and hand sign) and the post measurement (auditory stimulus, hand sign and light stimulus) for the experimental sample in stop (games suspension) during kicking in the direction of post measurement.

The researcher attributes this result that the new suggestion to modify the sign of stop order (game suspension) instead of auditory sign and hand movement to auditory sign, hand movement and light sign affects positively the time spent by athletes during referee order

to stop and actual stop from playing. Light reaction speed is faster than auditory reaction speed. This result is consistent with El Sayed *et al.* [8].

CONCLUSION

In the light of the research results, the researcher concluded the following:

- There are statistical significant between the pre measurement (auditory stimulus and hand sign) and the post measurement (auditory stimulus, hand sign and light stimulus) for the experimental sample in stop (games suspension) during contact in the direction of post measurement.
- There are statistical significant differences between the pre measurement auditory stimulus and hand sign) and the post measurement (auditory stimulus, hand sign and light stimulus) for the experimental sample in stop (games suspension) during kicking in the direction of post measurement.
- The suggested modification of referee stop order during fighting by using an additional light stimulus in Kungh fu sport led to improve athletes' response for stop order.
- The suggested modification of referee stop order during fighting by using an additional light stimulus led to reduce athletes and coaches stimulation and injuries.
- This modification is considered among steps to reach full automatic judgment.

Recommendations:

In the light of the research results, the researcher recommended the following:

- Calling officials in international federation and Egyptian federation for Kungh fu to use the suggestion (light stimulus) for its great affect in reducing some injuries and fight.
- The necessity of providing federation cultivation courses for judges in law to deal with the suggested apparatus.
- The necessity of providing coaches an idea of the new modification so that they can work under the new modification and there is no excuse of non-previous knowledge.

- Calling researchers and those whom concern to find a method to fix wireless transmission unit in referee hand to allow free movement and hand opening or closing during referee.
- Finding spotlights with greater energy to provide more direct and obvious sign.

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