

The Effect of Using Attack and Indirect Counter-Attack as a Performance Effectiveness Indicator of the Kumite Players

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Introduction and Problem of the Research

The Karate is one of the sports where many scientist and specialists endeavour to develop its technical and tactical level by means of the latest technology in analysis and training in the field of the game. This would lead researchers to jump into scientific research for the development and progress of the game's level and always improve the players' performance in order to achieve the best possible results in the international and global events.

As the Kumite has an ever-changing performance during the match, in terms of attack, counter-attack and defence processes, according to the match' various situations, compelling the player to resort to different technical styles whether to attack, directly and indirectly, and to use individual and complex skills of the body's members at the different spots of the court. Based on his academic and applied experience and pursuing several local and international tournaments of the local and international Egyptian players, the researcher noticed that the Egyptian players count on the direct attack, which requires an effort for both attack or counter-attack processes. This made the players resort to considerable performance and physical skills without receiving any technical benefits or points compared to the amount of physical, skills and tactical efforts exerted by the players. Hence, they win the matches, as they depend only on direct attack. Upon watching the world's champions, and analyzing their performance, the researcher pointed out that they depend in 75% of their technical and tactical performance on attack and

individual and complex indirect counter-attack, which helps a lot in scoring points and winning the match with less physical, skills and tactical effort than the Egyptian players who depend on huge physical, skills and tactical effort to achieve the technical points and win the matches.

Whereas developing the use of attack and individual and complex indirect counter-attack is one of the basic requirements for skills and tactical performance in view of the great effect thereof on the players' effective performance; which can be reached through analysis and practice of tactical skills performance for attack and direct and indirect counter- attack based on scientific principles in their training programs.

Objectives of the Research

The research aims at:

Identifying the effect of using attack and indirect counter-attack as a performance indicator of the Kumite player through:

1. Identifying the most used attack and individual and complex counter-attack skills by analyzing the matches;
2. Designing organized training programs using attack and individual and complex indirect counter-attack;
3. Identifying the effect of using attack and indirect counter-attack on the effectiveness of the Kumite players' skills performance;
4. Identifying the improvement rate noticed on the level of attack and indirect counter-attack skills and some elements of the Kumite players' physical fitness.

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Assumptions of the research

1. There are statistically indicative differences between the average scores of both pre- and post-measurement of the empirical group in terms of the level of the physical fitness' elements [under consideration) and the individual and complex attack and indirect counter-attack skills [under consideration) and the effectiveness of skills performance favouring the post-measurement.

2. There are statistically indicative differences between the pre- and post-measurement of the adjusting group in terms of the level of the physical fitness' elements [under consideration) and the individual and complex attack and indirect counter-attack skills [under consideration) and the effectiveness of skills performance favouring the post-measurement.

3. There are statistically indicative differences between the averages of both pre- and post-measurements of the empirical group and the adjusting group in terms of the physical fitness' elements (under consideration) and the individual and complex attack and indirect counter-attack skills [under consideration) and the effectiveness of skills performance favouring the empirical group.

4. There are differences in the improvement rate between the empirical and adjusting groups in terms of the physical fitness' elements [under consideration) and the individual and complex attack and indirect counter-attack skills (under consideration) and the effectiveness of skills performance favouring the empirical group.

Procedures of the Research

Methodology of the Research

The researcher used the empirical method using the empirical design of two groups: one empirical and the other one adjusting, by means of pre- and post-measurement for each group, being adequate to the nature of the research.

Community of the Research

The community of the research was selected among the first class players [men + ladies) at the Military Production Club, registered at the

Egyptian Karate Federation for 2011-2012 season, and specialized in Kumite.

Sample of the Research

A sample consisting of 20 male and female players were intentionally selected amidst the community of the research; they were split into two equal groups in terms of age, weight and training age, being 10 players in each group.

1. The empirical group

Consisting of 10 players: the researcher applied the specific suggested program [aiming at developing the individual and complex attack and indirect counter-attack).

2. The adjusting group

Consisting of 10 players: the program adopted at the club was applied on them [the traditional program aiming at developing the attack and indirect counter-attack).

Terms of the Research

Attack: All moves and styles used by the player to score points or obtain benefits for his favour to beat his opponent in compliance with the rules of the game. [10:3)

- **Counter-attack:** A reaction to the opponent's attack, be it direct or indirect, using one of the following styles:
- **Sen-no-sen:** Simultaneous attack against the opponent's attack, o **Go-no-sen:** Attack following defence against the opponent's attack, o **Tai-no-sen:** Attack prior to the opponent's attack. (Procedural definition)
- **Indirect counter-attack:** Sherif El Awady and Omar Labib provide the definition of this term being the use by the player of auxiliary skills against the opponent; such skills do not ensure scoring any points, yet they help the basic skills in scoring points [10:5)
- **Complex skills:** A set of skills, using arms, legs or both, by means of attack or direct or indirect counter-attack. [Procedural definition)
- **Technical performance Effectiveness:** Extent of the skills' similarity and symmetry to the most scientific logical and rational tactics

[series) and are linked to the score. [Procedural definition)

| S | Phases of the Program/Parts | First Phase | Second Phase |
|---|-------------------------------|--|--|
| 1 | Objective | Development of the physical fitness, the skills and tactical performance during attack and indirect counter-attack in a balanced way to help players achieve the physical fitness. | High development of technical and tactical skills, to be linked to performance during conditional and free matches to help players achieve a high effectiveness, tactical and physical level and improve their skills and matches performance effectiveness. - Maintain the players' physical fitness ratio. |
| 2 | Duration | 4 weeks | 4 weeks |
| 3 | Practice days per week | 3 units | 3 units |
| 4 | Units per day | 1 unit | 1-2 units |
| 5 | Average unit time of training | From 90 min. | From 90 to 12 min. |

Results Discussion

In the light of table (1) the arithmetic mean and standard deviation of the pre and post measurement, the rate of change is variable effectiveness and performance as well as the physical variable as the rate of change ranged between 50.59% as far as the variable "reaction of complex skills" is concerned. The researcher find that this variable makes the highest change percentage since reaction in complex skills is considered an important element in karate where it is used by players in kumite movements. The element depends on the reaction speed, and the researcher was concerned with developing it in training program because of its importance in karate. This according with studies Mohamed saeid abo elnor 2002, Ibrahim ali alebiary 2003, and said gameel elashker 2010,

As can be seen from table (2) there were statistically significant differences between the dimensional measurement for the experimental group on one side, and that for the control group on the other in some physical and skill

variables, due to the fact that both groups are subject to the training program. The differences were in favor of the experimental group in the variables associated with the karate skills as complex skills reaction, aspiate and the speed in skill performans. This according with Mohamed samir sabahy 2005, Mohamed abd elrahman 2009, and mootaz hlal abo elasaad 2010 .

As for table (6) it shows significant statistic differences between the dimensional measurements for both the experimental and control group in favor of the experimental group in the performance effectiveness. The researcher believes that the differences are in favor of the experimental group, as it used the proposed training program and what it included of exercises developing various skills, the thing that affected the speed of the strikes, and added to the effectiveness of the complex skills. This according with studies Ibrahim ali alebiary 2007, mahmoud rabie elbeshehy 2005, Hamilton roschel 2009, and Mohamed ramzy fetouh 2011.

Table (1)

Table (1) shows the arithmetic mean, standard deviation, Variance Skewness and Kurtosis of the experimental group and the ratio of change between before & after the Implementation

| Variables | Before the implementation | | After the implementation | | Ratio Change % |
|--------------------------------|---------------------------|----------------|--------------------------|----------------|----------------|
| | Mean | Std. Deviation | Mean | Std. Deviation | |
| Gyaku -zuki 10sec | 15.3000 | .48305 | 16.5000 | .84984 | 7.84 |
| Kezami -zuki 10 sec | 15.7000 | .82327 | 17.2000 | 1.31656 | 9.55 |
| Kezami-mwashi 15 sec | 9.5000 | .52705 | 11.3000 | .67495 | 18.95 |
| Ura-nwashi 15 sec | 7.7000 | .48305 | 9.8000 | .91894 | 27.27 |
| Kzami-gyaku 15 sec | 10.8000 | .78881 | 11.9000 | .87560 | 10.19 |
| Gyaku-kzami mwashi 15 sec | 9.3000 | .48305 | 10.9000 | .87560 | 17.20 |
| Gyaku-ura mwashi 15 sec | 8.1000 | .31623 | 10.3000 | .67495 | 27.16 |
| Kzami-ushiro-ura mwashi 15 sec | 7.6000 | .51640 | 9.7000 | .48305 | 27.63 |
| Gyaku - zuki 40sec | 32.3000 | 1.41814 | 34.0000 | 1.41421 | 5.26 |
| Kezami-zuki 45 sec | 33.1000 | 1.66333 | 34.7000 | 1.63639 | 4.83 |
| Kezami-mwashi 45 sec | 26.2000 | 1.31656 | 27.8000 | 1.54919 | 6.11 |
| Ura-nwashi 45 sec | 24.6000 | 1.57762 | 26.5000 | 1.50923 | 7.72 |
| Kzami-gyaku 45 sec | 30.3000 | .82327 | 32.1000 | 1.19722 | 5.94 |
| Gyaku-kzami mwashi 45 sec | 24.3000 | .94868 | 25.7000 | 1.41814 | 5.76 |
| Gyaku-ura mwashi 45 sec | 21.4000 | 1.07497 | 23.1000 | 1.19722 | 7.94 |
| Kzami-ushiro-ura mwashi 45 sec | 20.4000 | .96609 | 22.3000 | .94868 | 9.31 |
| Reaction of complex skills | 1.2060 | .30725 | .8980 | .03967 | 34.30 |
| Reaction of complex skills | 1.3960 | .30823 | .9270 | .03129 | 50.59 |
| Reaction of complex skills | 1.2090 | .04864 | 1.3560 | .34945 | -10.84 |
| Reaction of complex skills | 1.3230 | .05559 | 1.3440 | .32684 | -1.56 |
| Special agility (right) | 12.5150 | .67228 | 11.3930 | .53421 | 9.85 |
| Special agility (lift) | 12.5860 | .64574 | 11.0920 | .58069 | 13.47 |

The light of the table the Mean and the Std. Deviation for the Before and After the implementation and the Ratio Change% for the experimental group

Table (2)
Significant differences between control group and experimental

| Variables | Group | N | Mean Rank | Sum of Ranks | Z | Sig. |
|---------------------------------|--------------|----|-----------|--------------|---------|------|
| Gyaku -zuki 10sec | Control | 10 | 5.65 | 56.50 | '3.720 | .000 |
| | Experimental | 10 | 15.35 | 153.50 | | |
| Kezami -zuki 10 sec | Control | 10 | 7.25 | 72.50 | '2,548 | .011 |
| | Experimental | 10 | 13.75 | 137.50 | | |
| Kzami -mwashhi 15 sec | Control | 10 | 6.80 | 68.00 | *2,945 | .004 |
| | Experimental | 10 | 14.20 | 142.00 | | |
| ura mwashhi 15 sec | Control | 10 | 6.00 | 60.00 | *3,562 | ,000 |
| | experimental | 10 | 15.00 | 150.00 | | |
| Kzami-Gyaku 15sec | control | 10 | 8.70 | 87.00 | 1.463 | .190 |
| | experimental | 10 | 12.30 | 123.00 | | |
| Gyaku-kzami mwashhi 15 sec | control | 10 | 9.00 | 90.00 | 1,212 | .280 |
| | experimental | 10 | 12.00 | 120.00 | | |
| Gyaku- ura mwashhi 15 sec | control | 10 | 7.20 | 72.00 | *2.690 | .011 |
| | experimental | 10 | 13.80 | 138.00 | | |
| Kzami-ushiro-ura mwashhi 15 sec | control | 10 | 9.00 | 90.00 | 1,314 | .280 |
| | experimental | 10 | 12.00 | 120.00 | | |
| Gyaku - zuki 40sec | control | 10 | 7.60 | 76.00 | '2.252 | .029 |
| | experimental | 10 | 13.40 | 134.00 | | |
| Kezami - zuki 45 sec | control | 10 | 8.05 | 80.50 | 1.883 | .063 |
| | experimental | 10 | 12.95 | 129.50 | | |
| Kzami -mwashhi 45 sec | control | 10 | 9.00 | 90.00 | 1,174 | .280 |
| | experimental | 10 | 12.00 | 120.00 | | |
| ura mwashhi 45 sec | control | 10 | 9.45 | 94.50 | 0.830 | .436 |
| | experimental | 10 | 11.55 | 115.50 | | |
| Kzami-Gyaku 45sec | control | 10 | 6.05 | 60.50 | *3,413 | .000 |
| | experimental | 10 | 14.95 | 149.50 | | |
| Gyaku-kzami mwashhi 45 sec | control | 10 | 9.25 | 92.50 | ,976 | ,353 |
| | experimental | 10 | 11.75 | 117.50 | | |
| Gyaku- ura mwashhi 45 sec | control | 10 | 8,90 | 89.00 | 1.259 | .247 |
| | experimental | 10 | 12.10 | 121,00 | | |
| Kzami-ushiro-ura mwashhi 45 sec | control | 10 | 6.90 | 69.00 | '2.818 | .005 |
| | experimental | 10 | 14.10 | 141.00 | | |
| Reaction of complex skills | control | 10 | 11.15 | 111.50 | .499 | .631 |
| | experimental | 10 | 9.85 | 98.50 | | |
| Reaction of complex skills | control | 10 | 13.90 | 139.00 | '2.615 | .009 |
| | experimental | 10 | 7.10 | 71.00 | | |
| Reaction of complex skills | control | 10 | 11.35 | 113,50 | .646 | .529 |
| | experimental | 10 | 9.65 | 96,50 | | |
| Reaction of complex skills | control | 10 | 11.65 | 118,50 | .874 | .393 |
| | experimental | 10 | 9.35 | 93,50 | | |
| Special agility {right} | Control | 10 | 13.65 | 136.50 | '2.382 | ,015 |
| | Experimental | 10 | 7.35 | 73.50 | | |
| Special agility (lift) | Control | 10 | 13.60 | 136.00 | * 2.345 | .019 |
| | Experimental | 10 | 7.40 | 74.00 | | |

Z within 0.05 = 1.96

This table shows that there are statistically significant differences between the experimental group and control group in variables of the research

Table (3)
Significant differences between the before the experimental and after for the control group

| | | N | Mean Rank | Sum of Ranks | Z | Sig. |
|--------------------------------|---|----|-----------|--------------|---------|------|
| Gyaku zuki 10 sec | - | 0 | 0.00 | 0.00 | -1.890a | 0.06 |
| | + | 4 | 2.50 | 10.00 | | |
| | = | 6 | | | | |
| Kzami zuki 10 sec | - | 0 | 0.00 | 0.00 | -2.972a | 0.00 |
| | + | 10 | 5.50 | 55.00 | | |
| | = | 0 | | | | |
| Kzami mwashi 15 sec | - | 0 | 0.00 | 0.00 | -3.051a | 0.00 |
| | + | 10 | 5.50 | 55.00 | | |
| | = | 0 | | | | |
| Ura mwashi 15 sec | - | 0 | 0.00 | 0.00 | -3.162a | 0.00 |
| | + | 10 | 5.50 | 55.00 | | |
| | = | 0 | | | | |
| Kzami gyaku 15 sec | - | 0 | 0.00 | 0.00 | -2.972a | 0.00 |
| | + | 10 | 5.50 | 55.00 | | |
| | = | 0 | | | | |
| Gyaku kzamimwashi 15 sec | - | 0 | 0.00 | 0.00 | -2.919a | 0.00 |
| | + | 10 | 5.50 | 55.00 | | |
| | = | 0 | | | | |
| Gyaku ura mwashi 15 sec | - | 0 | 0.00 | 0.00 | -2.919a | 0.00 |
| | + | 10 | 5.50 | 55.00 | | |
| | = | 0 | | | | |
| Kzami mwashi ura mwashi 15 sec | - | 0 | 0.00 | 0.00 | -2.970a | 0.00 |
| | + | 10 | 5.50 | 55.00 | | |
| | = | 0 | | | | |
| Gyaku zuki 40 sec | - | 0 | 0.00 | 0.00 | -1.732a | 0.08 |
| | + | 3 | 2.00 | 6.00 | | |
| | = | 7 | | | | |
| ■ Kzami zuki 40 sec | - | 0 | 0.00 | 0.00 | -2.000a | 0.05 |
| | + | 4 | 2.50 | 10.00 | | |
| | = | 6 | | | | |
| Kzami mwashi 45 sec | ■ | 0 | 0.00 | 0.00 | -1.732a | 0.08 |
| | + | 3 | 2.00 | 6.00 | | |
| | = | 7 | | | | |
| Ura mwashi 45 sec | | 0 | 0.00 | 0.00 | -2.000a | 0.05 |
| | + | 4 | 2.50 | 10.00 | | |
| | = | 6 | | | | |
| Kzami gyaku 45 sec | - | 1 | 2.00 | 2.00 | -.577a | 0.56 |
| | + | 2 | 2.00 | 4.00 | | |
| | = | 7 | | | | |
| Reaction complex skills | - | 0 | 0.00 | 0.00 | -2.449a | 0.01 |
| | + | 6 | 3.50 | 21.00 | | |
| | = | 4 | | | | |
| Reaction complex skills | | 0 | 0.00 | 0.00 | -3.000a | 0.00 |
| | + | 9 | 5.00 | 45.00 | | |
| | = | 1 | | | | |
| Reaction complex skills | - | 0 | 0.00 | 0.00 | -3.000a | 0.00 |
| | + | 9 | 5.00 | 45.00 | | |
| | = | 1 | | | | |
| Reaction complex skills | - | 10 | 5.50 | 55.00 | -2.810b | 0.00 |
| | + | 0 | 0.00 | 0.00 | | |
| | = | 0 | | | | |
| Special agility (right) | - | 10 | 5.50 | 55.00 | -2.803b | 0.01 |
| | + | 0 | 0.00 | 0.00 | | |
| | = | 0 | | | | |
| Special agility (lift) | - | 6 | 4.00 | 24.00 | -.357a | 0.72 |
| | + | 4 | 7.75 | 31.00 | | |
| | = | 0 | | | | |

Z within 0.05 = 1.96

This table shows that there are statistically significant differences between the before the and after experimental for the control group in variables of the research

Conclusions

In the light of the methodology of the research, the sample, the objectives, the assumptions and the tools used, and based on the procedures implemented and the statistical analysis of data as well as the interpretation of the findings, the researcher could point out the following conclusions:

1. The practice program oriented towards developing the attack and indirect counter-attack showed a positive and indicative statistical effect in improving the skills' performance effectiveness of the Kumite players;
2. The practice program oriented towards developing some physical fitness elements related to attack and indirect counter-attack skills showed a positive and indicative statistical effect in increasing the skills' performance effectiveness of the Kumite players;
3. The empirical group subject to the suggested practice program [attack and indirect counter-attack) was preminent compared to the adjusting group that used the traditional program in terms of the use of attack and direct and indirect counter-attack skills and some elements of the special physical fitness and performance effectiveness;
4. The traditional program oriented towards the development of the attack and direct counter-attack showed a positive indicative statistical effect of attack and direct counter-attack as well as some elements of special physical fitness and the performance effectiveness, yet at less rates than those resulting from the suggested practice program for the empirical group.
5. The suggested practice program showed an actual improvement in the rate of use by the players of the attack and the individual and complex indirect counter-attack in view of the pre- and post-measurement in the interest of the post-measurement;
6. The suggested practice program, by using the attack and indirect counter-attack in the attack and counter-attack skills, showed an improvement in the performance effectiveness between the empirical and the adjusting groups in terms of the post-measurement in the interest of the empirical group;

7. The suggested practice program showed an improvement in the increase of effectiveness of some tactical sets for attack and indirect counter-attack by using the space of the court - moves - tactical sets - skill sets (individual - complex] - match time - tricks - recommendations for attacks - managing the match] favouring the post-measurement for the empirical group.

Recommendations

With due respect to the data, key findings and conclusions of the research, and according the sample of the research and the fields thereof, the following recommendations may be submitted:

1. Focus on the special physical aspect, being the development of the strength element in terms of speed, endurance, reflex and special fitness (moves of the feet, chicanery and tricks);
2. Focus on the skills' aspect (individual - complex) to optimize the skills resultant of the players by using such skills in attack and counter-attack, and make sure the player masters such skills well;
3. Focus on the tactical aspect through (moves - distance during the game - timing of attack - chicanery and tricks - time of the match - direct and indirect attack) in order to optimize the tactical resultant of the players;
4. Permanent and continuous analysis of local and international matches to identify the best methods used in the game, and the most used attack and indirect counter-attack skills, both individual and complex, throughout the game;
5. Focus on the tactical skills' aspect in educating and training the players, especially junior players, and use of different methods to ensure the performance effectiveness of the game tactical skills and, accordingly, win the game;
6. Focus on developing practice programs similar to the development of tactical skills' performance (attack and counter-attack) for other samples (juniors - youth), taking into account the special characteristics of each age bracket.

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