

# Battery designs the testing physical of skills for selecting talented taekwondo: (Egyptian national project)

Mohammed Mustafa Bakr

*Department of theory and applications Compacts and individual sports, Faculty of Physical Education at Port Said University, Egypt.*

**Abstract.** The aim of this study is to design a battery test physical of skill for the selection of talented young taekwondo Egyptian national project for may have a practical importance of overseeing the selection of young people as well as in the planning of the training process to reach high levels. Applied study on a sample of (750) Individual clubs and youth centers in 14 countries in the Arab Republic of Egypt, and the average age of ( $11.11 \pm 1.06$  years), height ( $143.50 \pm 11,09$  cm) and weight ( $42.53 \pm 10,74$ kg). Tests were conducted in the period from 17/11/2012 to 29/12/2012. Physical tests following (Ability, Hinge flexibility basin, Agility, Kinetics speed in a level trunk, Kinetics speed in the level face, Endure Performance). Scientific transactions testing laboratories account sincerity and consistency of the tests used in the study. Where the value of the coefficient of sincerity  $d$  statistically at the level of the significance of 0.05 is a sign the two sides between the high level and the low level as the value of the coefficient of sincerity between (0.682, 0.932), which indicates that the tests measure what it was made. It was also correlation coefficient  $d$  statistically at the level of an indication (0.01) and (0.05) is a sign of the two parties, where the value of  $P < 0.05$  in all tests as they ranged between (0.964-0.998), pointing to a flat these tests. The researcher used the descriptive survey method. Calculated using the weight of the medical balance and use a tape measure to the nearest (0.5) cm. The statistical analysis SPSS was used to apply formulas statistical by calculating: average, standard deviation, correlation, Factor analysis, Six Sigma Score, percentile scores. The results of the standard levels the battery test of physical skills extracted the selection of talented taekwondo sports in the factors of grace the second factor is the dynamic speed. The study concluded that this study concluded to a battery physical of skill tests for selection of talented young taekwondo sport includes tests are (Agility, Hinge flexibility basin, Ability (Broad jump), Kinetics speed in the level trunk, and Kinetics speed in the level face). In addition, the officials of the Egyptian taekwondo federation, trainers and the introduction of the results of this research and application of the battery on the talented young athletes in taekwondo. It will have the greatest impact on the selection of the best elements until access to higher levels of except in the development of appropriate training programs.

**Keywords.** Battery test, talents, physical, skills, taekwondo.

## Introduction

Taekwondo is one of the sports activities which were deployed at the global level has made tremendous strides in a short period and imposed itself on the international level officially join Olympic sport 2000 cycle of Sydney in Australia, which ignited competition between States for the largest possible number of medals. Therefore, sought the competing states to broaden the base of the practice of this horrid game and focused largely on the selection of talented people in gym taekwondo. Egypt is the States with advanced level Taekwondo at the African level, Arab, international levels and was the culmination of this effort that the player orders Salah Al-Bayoumi, won the bronze medal in the Athens 2004. It was, therefore, attention to the adoption of the state national projects to help the selection of the talented sportsmen in taekwondo. Therefore, there was an urgent need to design a means of measurement Objective Verify the selection of the talented sportsmen in taekwondo (Cho, 1988; Sihak, 1997).

Taekwondo is considered a means of self-defense of the individual can be used to defend and attacks the freedom in addition, flexibility in all directions forward, rearward, the side that the one using parts of the body. Taekwondo is considered one of the Compacts sports; therefore, it applies the principles and foundations of the sports training. The importance of the physical characteristics of the skill of all sports activities in general because taekwondo of sports was not the subject of the study in the selection of the talented athletes, to the knowledge of the researcher. So the researcher conducted this study to access the battery is designed to test center maneuver for the selection of the Taekwondo talented young people. Building tests batteries to measure the physical abilities and basic skills important (Mohamed & Mohamed, 1984).

The Meaning combines it with the test battery is a group of several tests to be applied respectively to the individual, placed this tests to measure a set of

interrelated purposes. The integral legalization as one of the stages of building the test contains criteria for battery units test. The standards are standard degrees and the degree of expressing the degree of each individual on the basis of a number of units of the standard deviation of its category the group average derives the use of statistical methods of certain raw grades, a result learned when test application without addressing the statistically (Joo, 1983).

The importance of the transfer of the grades of crude to a standard degree that crude grades differ in their units in while the standard class is unified in its units. This procedure allows for a degree of the faculty of the individual and the units of the test battery combined, define standard class designated individual for the group-derived standards, the original community considered. The degree in itself does not have any meaning only if we went back to the standard specifies the meaning of this class.

There are several statistical methods used to convert a raw class to the standard degree percentile scores, *t* scores and *z* scores (Mohamed & Mohamed, 1984). This is the study is an attempt to build a test battery of talented people in taekwondo with high scientific value on the right road to select talented people in taekwondo.

There is no doubt that the application of the results of scientific research in the sports field would lead to the development of the level of achievement of the individual to raise the efficiency of training condition (Matveev, 1981; Essam, 1994). That access to high levels of carried several factors including good training, physical attributes, in response to members of organs of internal training as well as to the surrounding environment. So turn specialists in the sports field to identify the specifications for all sporting activity in order to contribute to the process of selection of young people in accordance with the scientific principles. The many studies conducted in the area of physical measurements physical attributes over the importance of the availability of these factors on the performance of the player. As well as important in laying the foundations for the selection of young people in the type of activity of the practitioner. This is consistent with the results of the case studies (Muhammad, 1987; Al-bek & Essam, 1980; Al-bek & Sayid, 1980). If the availability of youth mobility capabilities in addition to the physical configuration of timely, this is considered a starting point for training support to reach the levels high sports (Moritaini, 1987).

Studies indicate that private selection led to much of the information on the selection process and to lay the foundations for the theory, the process of selection of the problems of the sports field that must be appropriate solutions (Abul-Ela & El-Ruby, 1986).

It is already clear that the physical characteristics of the private and skills are one of the requirements to be considered as an important basis when selecting talented people in general and talented in taekwondo young people. In particular, in view of the importance of performance skill in taekwondo in addition to the physical characteristics of the lack of scientific studies related to the selection of talented people in taekwondo young people. The aims of the study are to design a battery test physical of skill for the selection of talented young taekwondo Egyptian national project for may have a practical importance of overseeing the selection of young people as well as in the planning of the training process to reach high levels.

## Methods

The study included a sample of 750 individual clubs and youth centers in 14 countries in the Arab Republic of Egypt, and the average age of  $11.11 \pm 1.06$  years, height  $143.50 \pm 11.09$  cm and weight  $42.53 \pm 10.74$ kg. Tests were conducted in the period from 17/11/2012 to 29/12/2012. Physical tests following (Ability, Hinge flexibility basin, Agility, Kinetics speed in a level trunk, Kinetics speed in a level face, Endure Performance). Scientific transactions testing laboratories account sincerity and consistency of the tests used in the study. Where the value of the coefficient of sincerity *d* statistically at the level of the significance of 0.05 is a sign the two sides between the high level and the low level as the value of the coefficient of sincerity between 0.682 and 0.932, which indicates that the tests measure what it was made. It was also correlation coefficient *d* statistically at the level of an indication 0.01 and 0.05 is a sign of the two parties, where the value of  $P < 0.05$  in all tests as they ranged between 0.964 - 0.998, pointing to a flat these tests. The researcher used the descriptive survey method. Calculated using the weight of the medical balance and use a tape measure to the nearest 0.5 cm.

Was the use of the following tools measurement tape for use in the test the capacity and testing the flexibility of the Basin, aftermarket funnels for use in test shuttle jogging, ease the training and siren will pulse clock off for use in the speed test in the delicacy stem in testing and endurance performance.

The results factor analysis physical tests before Rotated: Use the researcher method of principal components away draw the maximum contrast of Relational Matrix (Mohammad, 1987). As well as acceptable test H. Kaiser to determine factors, which based on the selection of a number of factors and an equal number of values in kind valued at more than the one (Raad, 1987) in the right direction. It has been the taking of factors that in-kind values underlying root greater than one.

The results factor analysis physical tests after Rotated: The objective of the rotated of factors is the access to simple installation matrix factors learned so rotated using the recycling of the cross pointer (Varimax) of Kaiser. The process of recycling of as or factors leads to removing the ambiguity of the first analysis to reach a form more than simply the factor (Mahssen, 1993). It gives an opportunity for the interpretation of the factors in the light of the terms of reference clearly defines the recycling process as the recycling of the interlocutor on the original data so that the saturation of each variable per worker only the highest possible. This recycling makes each factor is the existence of a number of variables and the saturation of the High, which facilitates the development of clear, labels him (Samira, 1980). An agreement was reached to draw number (2) relevant factors, the values of in-kind contributions of more than one as shown in table 3.

The conditions for the admission of factors: Follow the researcher of the next steps in the acceptance of factors: accept the working group, which imbue the three tests a function at least according to the test Gilford (Hamdi, 1982). The interpretation of the working group in the light of the major saturation of exams ( $\pm 0.05$ ) with the use of their satiation medium ( $\pm 0.3$ ). In addition, follow the instructions referred to by Thurston representing the descriptive economy factor analysis and highlight the unique aspects with a focus on aspects, which have to mean (Safwat, 1980).

Standard grades battery units extracted: after the battery units extracted the researcher to find crude grades battery units, in order to reach the standards must be converted into crude grades normative grades as a means of determining the relative situation grades crude, could explain these grades and the conversion of the results. Therefore, the researcher to convert raw scores to standard degrees offset Six Sigma Score

**Statistical analyses**

The statistical analysis SPSS was used to apply formulas statistical by calculating: average, standard deviation,

correlation, Factor analysis, Six Sigma Score, percentile scores.

**Results**

Table 1 indicates to the matrix of correlation coefficients for physical tests candidates for analysis of the (6) tests. There are (15) correlation coefficient of them (7) a positive correlation coefficient increased by 46.67%, the number (8) negative correlation coefficient of 53.3%. There are (13) statistically significant positive correlation at the significant level coefficient 0.01 increased by 86.67% /, there are (2) a positive correlation coefficient indication statistically significant at the level 0.05 increased by 13.33%. There is also a number (2) negative correlation is not statistically significant factor of 13.33%.

Table 2 shows that to reach a number of (2) form factors (6) physical tests interpreted (54.86%) of the variation. As can be seen from the table that the first factor explained by (36.60%) of the cumulative percentage of the variance, the second factor was interpreted as representing (54.86%) of the cumulative percentage. It also is clear that factors have learned in descending order according to their importance, as it was the first factor of the total variation contrast ratio (36.60%), second factor (18.26%). As noted, that constant variation remained unexplained values before and after the recycling process in Component matrix of physical tests.

Table 3 shows the factors extracted explain what accounted for (54.85%) of variation. As noted that the first factor explained the rate of (29.48%) of the cumulative percentage, second factor (54.86%) of the cumulative percentage. In addition, the saturation factors may have changed when compared to the saturation factor values Rotated.

Table 4 shows Battery Extracted tests with pure units for selecting talented taekwondo sport. Which represent the highest saturation show on factoring while the saturation on other non-fundamental factors the near zero.

**Table 1.** Correlation matrix tests under the factor analysis.

Variable	Ability (Broad jump) (cm)	Hinge flexibility basin (cm)	Agility (sec.)	Kinetics speed in level trunk (n)	Kinetics speed in level face (n)	Endure Performance (n)
Ability (Broad jump) (cm)		-.274**	-.357**	.168**	.228**	.220**
Hinge flexibility basin (cm)	-.274**		.232**	-.003	-.279**	-.279**
Agility (sec.)	-.357**	.232**		-.045	-.304**	-.191**
Kinetics speed in level trunk (n)	.168**	-.003	-.045		.366**	.187**
Kinetics speed in level face (n)	.228**	-.279**	-.304**	.366**		.356**
Endure Performance (n)	.220**	-.279**	-.191**	.187**	.356**	

\*\* Correlation is significant at the 0.01 level (2-tailed); \* Correlation is significant at the 0.05 level (2-tailed).

**Table 2.** Component matrix of physical tests before rotated.

Physical tests		Component		Extraction
		Factor 1	Factor 2	
Ability	Broad jump (cm)	.626	-.260	.460
Flexibility	Hinge flexibility basin (cm)	-.577	.413	.504
Agility (sec.)		-.600	.386	.509
Kinetics speed	Kinetics speed in level trunk (n)	.433	.772	.784
	Kinetics speed in level face (n)	.726	.316	.627
	Endure Performance (n)	.630	.109	.408
Initial Eigenvalues (Total)		2.196	1.095	
% of Variance		%36.60	%18.26	%54.86
Cumulative %		%36.60	%54.86	

**Table 3.** Component matrix of physical tests after rotated.

Physical tests		Component		Extraction
		Factor 1	Factor 2	
Ability	Broad jump (cm)	-.652	.187	.460
Flexibility	Hinge flexibility basin (cm)	.709	-.036	.504
Agility (sec.)		.710	-.072	.509
Kinetics speed	Kinetics speed in level trunk (n)	.142	.874	.784
	Kinetics speed in level face(n)	-.371	.699	.627
	Endure Performance(n)	-.425	.477	.408
Initial Eigenvalues (Total)		1.769	1.522	
% of Variance		%29.48	%25.37	%54.85
Cumulative %		%29.48	%54.86	

**Table 4.** Component matrix of the extracted renamed of saturation tests.

Sequence factors	Factor name	Physical tests	Component Factor 1
The first	Ability	Agility (sec.)	.710
		Hinge flexibility basin (cm)	.709
		Broad jump (cm)	-.652
The second	Kinetics speed	Kinetics speed in level face(n)	.874
		Kinetics speed in level trunk (n)	.699

**Table 5.** Component transformation matrix between batteries extracted factors.

Component	Factor 1	Factor 2
Factor 1	-.782	.623
Factor 2	.623	.782

**Table 6.** Standard levels of physical tests battery extracted.

Percentage % or standard levels	First factor (Agility)			Second factor (Kinetics speed)	
	Agility (sec.)	Hinge flexibility basin (cm)	Ability (Broad jump) (cm)	Kinetics speed in the level trunk (n)	Kinetics speed in the level face (n)
0	13.61	49.34	102.83	6.20	6.04
10	13.21	43.15	113.45	7.37	6.92
20	12.81	36.96	124.07	8.54	7.80
30	12.40	30.76	134.69	9.71	8.69
40	12.00	24.57	166.55	10.88	9.57
50	11.60	18.38	155.93	12.05	10.45
60	11.20	12.19	145.31	13.22	11.33
70	10.80	6.00	177.17	14.39	12.21
80	10.39	-0.20	187.79	15.56	13.10
90	9.99	-6.39	198.41	16.73	13.98
100	9.59	-12.58	209.03	17.90	14.86

Table 6 standard levels physical tests battery Extracted for selecting talented Taekwondo sport by First-factor agility and Second factor Kinetics speed.

## Discussion

The interpretation of the factors and its title: the study adopted on the method of determining the variables that are imbued with the values of the significance of each factor in the light of the saturation of large and medium-sized enterprises.

The interpretation of the first factor: Table 3 shows that the number of physical tests soaked to first Factor (5) by tests (83.33%) of the total number of physical tests under the analysis of (3) Major saturation and (2) the saturation of medium and notes from the table that the highest degree of saturation of the 0.710 and test the Agility, while less than the value of the saturation of the Factor 0.371 test the speed at the stem level. This is a Factor of the two poles of the configuration in view of the fact that special tests detailed flexibility and agility basin in the positive direction, while the special tests broad Jump, speed in the stem level, and endurance performance in the negative trend. As the best physical tests relating to fit, flexibility, and ability. Therefore, the researcher felt the designation of the first factor as (agility). As the best physical tests of the statistical destination are tested (agility) who achieved the biggest saturation of the factor 0.710, so any researcher nominates this test as one of the tests in the selection of talented people in taekwondo.

This is consistent with what the (Un, 1990; David, 1992; Mohammad, 2000) that grace is one of the fundamental elements in the physical preparation of the Taekwondo players. In addition, the importance of rapid change the situations of the body of the player during the Games are considered of the specification of the good performance of the Taekwondo player. The ability of the player to change the conditions of his body during the games that allow him to move to open the loopholes in the rival defense and prepare for the attack in a timely manner, the Player lack this element presented the loss in the matches.

It is the element of flexibility in the current time in one of the most important factors that should be available taekwondo player. As the legal amendments of the new and give a greater number of points when the performance of the player a kick in the area of his rival in the region legally permissible in comparison to the number of points obtained if the same skill in the stem area (International TF 2015). This agrees with the study of (Duk, 1983; Yoo & Yong, 1989; Pieter, 1995; Mohammad, 2000). The importance of the availability of an element of flexibility to the taekwondo player (Hee, 1981; Chong, 1983; Un, 1988; Park, 1989; Yeon, 1993; David, 1992).

The importance of the element of flexibility in taekwondo where the performance of many kicks requires the availability of the extent to which a broad activist up kick to the desired goal. Front kick circular half in the face (Aptly Shaggy) could not lead to reaching the desired goal. Without the availability of the element of flexibility to the player especially in the hip joints and pelvic area as well as vertical kick energy from top to bottom (NARA Shaggy) requires a high degree of Rubber rear thigh muscles. And the performance of most of the most Kicks in Taekwondo needs a high degree of flexibility in the joints of the various body (Yeon, 1993; Ahmed, 2007; Hee, 1981; Skelton & Colynn, 1991; Sihak, 1997; Joong & Kukki 1995).

The importance of the availability of an element of the capacity of the taekwondo players. That taekwondo player throughout the period of the match result kicked quickly and appropriate in the head torso to his competitor. the even player can achieve its goal of access kicks to the rival must reach the floor vibrates quickly a great force so that it could not his competitor to avoid floor vibrates if tried to do that in the view of both (Abul-Ela & El-Rouby, 1986; Izzat, 1987; Skelton & Colynn, 1991). That the term muscular capacity and speed of the explosive force mean one thing the *nom de guerre*, which produces the linkage between muscular strength and speed to remove the pattern of the consensual activist.

In the view of the (Skelton & Colynn, 1991; Seung, 1996; Mohamad, 2000), that the nature of the skill performance in taekwondo and what is required from the speed the performance kicked toward rival suddenly requires a muscular lead in a relatively short period. He adds (John, 1991; Seung, 1996; Robert, 1999) that the success of the Taekwondo players in achieving the points depends to large extent on their ability to direct kicks toward competitors high strongly quickly.

The researcher sees the importance of the availability of an element of the force of the speed of the Taekwondo players to the basic requirement to calculate the points during the match's Georgia according to (Chong, 1983; Yoon & Yong, 1989; Robert, 1999; International TF, 2015). Is the arrival of the strike in a healthy and strong and influential areas allowed in the body and that the lack of adequate players this element leads to lack of calculating the loss of points during the Games.

The interpretation of the second factor Table 3 shows that the physical tests are saturated to second factor (3) percent tests (50%) of the total number of physical tests under the analysis of (2) major saturation (1) the saturation of average. Notes that the highest degree saturation of the (0.874) and test the speed in the face. while less than the value of the saturation of the factor (0.477) and private performance to bear this is working group configuration polar in view of the fact that the tests kinesthetic speed in the level of facial stem and

performance in the positive direction. As the best physical tests related to the speed of mobility, test the speed in the stem level and face.

Since the best physical tests of the statistical destination are speed test in the face which has achieved the biggest saturation of the working group (0.874) so any researcher nominates this test as one of the tests in the selection of the talented Taekwondo sports, also felt the researcher designation of second factor (factor Kinetics speed).<sup>©</sup>

The distinctive feature of the tests of this factor is speed mobility in the level of a facial torso to pay the largest number of strikes in the torso delicacy in the least possible time (2,4,22), as well as endurance performance during the match.

Needs taekwondo player during each round of three rounds of the match to possess the speed of the mobility used by payment of the largest number of enabled kicks rapidly and valid in the regions of Cape Verde stem (3,17,20). Depends Phenom winning or losing the match on its ability to continue in the payment and bruises to his competitor in the stem area and head in public and legally permissible (Abul-ela & El-Ruby, 1986; Un, 1988; Joong, 1995; Mohamad, 2000). In addition, non-possession of Agility to pay kicks quickly appropriate mobility throughout the period of the match affect the ability to win or defeat in the Match.

The taekwondo player more than one game per day and its inability to bear the performance affect the result in each match. With the decline in its ability to bear the performance and its progression from the role to another. Which means that it corresponds to the competitor might be the strongest of the rival in the Pre-trial roles that whenever Phenom passed one of the preliminary rules must possess the ability to bear the efficient performance. So that it can reach, the final rules and win over his competitor (Abul-ela & El-Ruby, 1986; Izzat, 1987; Skelton & Colynn, 1991; Kurian, 1995; Mohammad, 2000; Ahmad, 2007).

The results showed the Table 4 and 5 guided by the results of the analysis skills after recycling cross pointer factors of this study pursuant to the terms of the standards of the battery units for the study. In the light of the foregoing shows that the battery units have been extracted and have the power to pure units. It represents the highest saturation of watching the factored in the while. The aeration on other factors not essential, approaching zero. Thus, the researcher concluded that test battery with units of the talented selection taekwondo Sports.

The results showed the Table 6 standard levels the battery life of physical tests extracted the selection of talented taekwondo sports in the factors of grace the second factor is the velocity.

## Conclusions

The study concluded that this study concluded to a battery physical of skill tests for selection of talented young taekwondo sport includes tests are (Agility, Hinge flexibility basin, Ability (Broad jump), Kinetics speed in the level trunk, and Kinetics speed in the level face). In addition, the officials of the Egyptian taekwondo federation, trainers and the introduction of the results of this research and application of the battery on the talented young athletes in taekwondo. It will have the greatest impact on the selection of the best elements until access to higher levels of except in the development of appropriate training programs.

## References

- Abul-Ella A, El-Ruby A. Selection of talented people in the sports field. The world of books, 1986.
- Ahmed SZ. The rules of scientific and artistic motor taekwondo, Note by non-published, 2007.
- Cho J, Cho A. A study on the effect taekwondo training on the physical performance in preschool children. Longitudinal studies, journal wtf, taekwondo, Seoul, Korea, 1988.
- Chong L. Super, dynamic kicks, the library of congress, USA, 1983.
- David M. official wtf taekwondo, publishing, limited, London, 1992.
- Duk S, Robert C. Black belt Korean karate, prentice hall, Tokyo, printing, 1983.
- El-bek A, Essam H. Identify some morphological specifications for long distances and short as a basis for selecting swimmers in the Arab Republic of Egypt, the scientific conference of studies and research of sports education in Alexandria, 1980.
- El-bek A, Sayid A. Morphological measurements as a basis for selecting the young people in short-course swimming, Scientific Conference of the research and studies of Sports Education, Faculty of Physical Education in Alexandria Helwan University, May 1980.
- Essam A. Sport's training, theories of the applications, the eighth edition, Dar as Salaam University books, Alexandria, 1994.
- Hamdi A. The status of the battery readiness measurement physical morphological to select the arising of volleyball. Doctorate thesis, Helwan University, Cairo, 1982: 21.
- Hee I. The complete martial artist, west Los angles, USA, 1981.
- International TF. The rules of interpretation of competitions. Interpretation of Nour et. al. 2015.
- Izzat M. The foundations in the sports selection. Library Egyptian Renaissance, 1987.
- John M .the complete course, taekwondo, British library cataloging in publishing limited, London, 1991.
- Joo L. The ancient martial art of Hwa rang do, the library of congress, USA, 1983.

- Joong K, kukki. Taekwondo, textbook, 11, kukki on Seoul, the republic of Korea, 1995.
- Keith d, bryan R. taekwondo for kids, publishing company, new York, USA, 1998
- Kurian MC. Relating scale on the children personality and belt rank in a taekwondo, 1995.
- Mahssen A. Matrix joints contrast link in the factor analysis with the application in the field of higher education. Letter master not published. The College of Administration and Economy. Mosul University. 1993: 30.
- Matveev I. Fundamentals of sports training, progress publishers, Mosco, 1981.©
- Mohamed SH. Factor Analysis physical capacities. Dar as Salaam Arab Thought, 1996.
- Mohamed SH. Ways to build the codification of the tests and standards in physical education (roads Factor). Cairo, Dar as Salaam Arab Thought, 1987: 124.
- Mohammad AD, Mohamed SH. Instrument Cluster in basketball, Dar as Salaam Arab Thought, First edition, 1984.
- Mohammad MB. The impact of the educational program for youth training in taekwondo on some of the physical characteristics of the technical skills learned from World Cup Championship 1997. Letter doctorate not published, Faculty of Physical Education in Port Said, Suez Canal University, 2000.
- Mohammed SA. Study of the relationship between certain physical standards for players kayaking and some mechanical aspects, unpublished Master Thesis, Faculty of Physical Education for Boys in Alexandria, Helwan University, 1987.
- Moritani T. Electrophysiological analysis of the effects of muscle power training, research, Journal of physical education, Japan, 1987.
- Park G. A biomechanical analysis of taekwondo front-kick, University of Minnesota, Degree Ph.D., 1989.
- Pieter F, Pieter W. Speed, and force in selected taekwondo techniques, in the biology of sport, Warsaw, 1995.
- Raad S. Statistical methods, Baghdad, Ministry of Planning, the Central Bureau of Statistics, Research and Training Center of Statistics, 1987: 250.
- Robert M. Mastering, contact the author, brigadier general Martineau, via mail at the following address: E-Mail, Robert k. Martineau at tkspr@magi.com, 1999.
- Safwat F. Factor analysis in the behavioral sciences. Cairo. Dar as Salaam Arab Thought, 1980: 259.
- Samira A. The areas of industry in Iraq. Baghdad. Dar as Salaam good governance for publication, 1980: 35.
- Seung L. Appropriate physical and technical training for taekwondo, a focus on the physical and technical methods of the Korean national university of physical education, Korea, 1996.
- Shake C. Taekwondo secrets of Korean karate, Charles e., tattle company Rutland, very Mont, Tokyo, Japan. 1997.
- Skelton L, Colynn A. aggressive behaviors function of taekwondo ranking, USA, 1991.
- Un YK. Taekwondo Poomse, the world taekwondo federation. Seoul, Korea, 1990.
- Un YK. The world taekwondo federation, Seoul, Korea, 1988.
- Yeon H, Buchach. Taekwondo for children, library of congress, USA, 1993.
- Yoon, Yong C. The relationship between skill level in taekwondo and selected measures of agility and balance in coll students, Michigan state university, 1989.