

The effect of Tae-bo exercises program on some coordination abilities and learn some skills of floor gymnastics

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Abstract:

The current study has aimed at designing a program using Taebo exercises, knowing its effects on some coordination abilities and learning some skills of floor gymnastics skills. Research sample included 30 female students from third grade students (teaching department) at faculty of physical education-Minia University for the academic year 2013-2014. It has been divided into two groups one is control and the other is experimental. The researcher has used the experimental method following the pre and post measurements for the control and experimental groups. The program has been applied on the experimental group for 6 weeks with 2 units weekly on the practical lecturer for the female students. The results indicated that there are significant differences between the averages of the pre and post measurements for the experimental and control groups in the harmonic capacity and floor gymnastics skills (under consideration) in favor of the experimental group. It assured that the program using Taebo exercises affected on some harmonic capacity and learning some floor gymnastics skills. The researcher recommended to use a program for Taebo exercises to learn some different gymnastics skills and also on the different sports.

Key words:

Taebo exercises- coordination abilities- Floor gymnastics skills.

Research problem& important:

Gymnastics is one of the sports which has advanced position among different sport activities as it needs great effort in its learning because it includes several and difficult skills. It also has different equipments

and physical aspects for performing it in addition to the control on all body's parties on air and ground (10: 98).

Adly Hussein Bayoumi (1998) refers that floor gymnastics is considered the

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educational entrance for championship gymnastics. It develops the bravery through the correct gradient of the kinetic skills; this provides the student with the sense of the direction of body movement ,and contributes in upgrading of the skillful performance level. It is considered a fertile basis to teach many skills similar to the rest of the other devices (1:13-14).

Also, harmonic capabilities is one of the most important pillars on which the performance in gymnastics depended because of its impact and great role on mastering different skills and learning it quickly. This is due to the private performance of gymnastics and its privacy in working on various organs, which requires the player to find a special fabric of compatibility specifications and the skill as well as the economy in the effort taking into account the technical points of law. Also the harmonic capabilities has a great importance in gymnastics, where it occupies 30% of the proportion of the physical components as it is one of the basics of training and contribute significantly not

only in motor skills only, but in the acquisition of fitness as well (7 : 20).

Taebo training helps to improve the body fitness and the level of skillful performance because it is considered an integrated program for fitness. These exercises are useful through continuous performance in addition to the skillful side. They contribute in the improvement of the psychological state of practitioners and increase their sense of joy and happiness (5: 6).

Billy Blanks" (1999) indicates that Taebo exercises are designed to fit with male, female and adults of all ages, abilities and their physical condition. All can practice Taebo, as each movement or a group of artistic movements can be altered to suit different ages, physical abilities and personal preparations in order to get a good health and fitness (6: 247).

The researcher observed through her teaching of a Gymnastics for female students at the faculty that there is difficulty in learning Gymnastics skills; as they never practice gymnastics

skills before. Also there is difficulty in their age stage because it is advanced stage. What is in line with what indicated by "Mohammed Sobhy Hsanyen and others "(13) Also gymnastics skills need participating more than dynamic group on one time and working of those muscle groups in more than one direction and on one time which needs a certain amount of harmonic capacity so that students can perform learned motor skills well and correctly.

Through the researcher`s readings a lot of previous studies and research, including the study of "Zainab" (2002), "Alyah" (2004), "Howayda & Madiha" (2008) she found that these studies dealt with identifying the effect of the use of Teabo exercises and its impact on the harmonic and physical abilities.

This encourage the researcher to think about developing a program using Taebo exercises that have the same motor track and sequence of the parties of movement in the same sequence skills(under consideration).Through these, the researcher noticed that the students are taking a long time

to learn and access to the point of good compatibility to perform these skills. Proposed Taebo exercises may contribute the achievement of nervous compatibility muscle in the movements, as well as help to achieve the best results in the level of performance, and to know its impact on some harmonic capacity which is considered as a mediator helps to learn some prescribed skills curriculum in gymnastics on the ground movements for the third grade students (Teaching Division) at Faculty of physical Education- Minya University.

Research goal:

The current research aims at designing a program using Teabo exercises to know its effect on:

1- Some coordination abilities (body total coordination - accuracy and coordination of hands with eyes - general fitness of the body balance- hard transition speed) for the third grade students (Teaching Methods Division).

2- learn some ground movements device Skills (handstand - rolling forehead rolling- handstand on and get off on the chest- on the

shoulders rolling back on the shoulders- somersault side (wheel) side somersault with a quarter roll in the direction of running- the front rolling from aviation). For the third grade students (teaching methods Division).

Research terms:-

- **Taebo Exercises:** A new style of exercises, which mixes of boxing, karate and aerobics performing with jump on feet constantly and with music (5:5).

- **Coordination abilities:** The capacities which are related with the compatibility component in order to affect on and by it (9:6).

Research procedures:-

- **Research Methodology**

The researcher used the experimental method using the experimental design of two groups; one is experimental and the other is control for its suitability to the nature of the research.

Research society & sample:

It included third grade students (teaching department) at faculty of physical education- Minia University for the academic year 2013-2014. An intentional sample has been

selected with 30 female students from research community after excluding (failed- irregular- ill) students. The sample has been divided into two groups; one is experimental with 15 female students. The researcher has used the experimental variable on the experimental group. The control group consisted of 15 female students who used the traditional teaching method.

The researcher calculated the distribution of sample individual equally (average- mediator- standard deviation- torsion coefficient) in the light of the variable of growth rate(chronological age - length - weight, intellect, harmonic capacity). The torsion coefficients were between $-0,987 : 1,608$ which means that they confined between $(+3,-3)$ indicating that they are located within the curve equinoctial.

The equality distribution between sample's individuals:-

The researcher has calculated the equality distribution between sample's individuals in the light of the following variables: growth rates (age-length- weight), intelligence, tests of harmonic capacities and floor gymnastics skills due to its importance and its impact

on learning. Table (1) shows the result

Table (1)
SMA, Mediator, Standard deviation, Torsion module of research sample in the variables (under consideration) n=50

variables	Measurement unit	SMA	mediator	Standard deviation	Torsion module	
age	Year	20.08	21.00	0.664	0.242	
Length	Cm	160,33	16,00	3,367	1.608	
weight	Kg	54.93	55.50	6,045	-0.437	
Intelligence	degree	54.73	54.50	2.923	0.247	
Coordination abilities tests	Body total harmonization	Degree	2.73	3.00	0.980	-0.358
	Accuracy & compatibility	Degree	5.57	6.00	2.635	-0.547
	Body general agility	Second	8,05	8.12	0.526	-0.297
	Stable balance	second	16.27	16.45	10.73	0.362
	Transition speed	second	7.197	7.195	0.455	-0.032
gymnastics Floor skills	Round-off	Degree	1.23	1.00	0.430	1.328
	Back shoulder	Degree	1.31	1.50	0.257	-0.353
	Cartwheel	degree	1.273	1.275	0.259	0.063
	Handstand-chest	Degree	1.45	1.50	0.304	0.103
	Hecht roll	Degree	1.44	1.50	0.341	0.202
	Handstand roll forward	degree	1.508	1.50	0322	-0.194
Total degree	degree	8.218	8.500	0,977	-0.987	

The equality between the experimental and control groups:

The differences between the experimental and control groups have been accounted in the variables (under consideration). the value of tabled "T" at the level (0.05) equaled 2.048 in the variables (under consideration). The results indicate that there isn't statistically significant differences between the

experimental and control groups, which refers to the equality of the two groups in these variables.

Survey:

The researcher has done the survey on the period from 2-3-2014 to 12-3-2014 on a sample with 20 female students from the same research community and out the basic sample in

order to calculate the scientific transactions and ensure that Tae-bo exercises are appropriate for the members of research sample.

Data collection tools:

The researcher defined poll forms for exports as following:

1- Application to determine the harmonic capacity that measure physical abilities associated with the skills of ground movements (under tests). Attachment (5)

2- Application to assess the skillful performance level of gymnastics skills (under consideration). Attachment (7)

3- Application to determine the dimensions of the proposed educational program (program duration - the number of educational units – Taebo exercises time) and temporal distribution of the educational units parties. Attachment (9)

4- Educational program application and the impact of the using Taebo exercises on some harmonic capacity and learning some floor gymnastics skills. Attachment (10)

Scientific transactions for research tools:-

Validity:

To calculate the sincerity of harmonic capacity tests and intelligence test, the researcher

used the sincerity of the differences between the groups by the terminal comparison. She also used (content sincerity – differences sincerity between the groups by the terminal comparison) to calculate the sincerity of the form. The application has been introduced on (5) Five experts from the faculty members of the faculties of Physical Education in the field of exercises, gymnastics, curriculum and teaching methods(attachment2) in order to assure if it suitable for measuring the skills of floor gymnastics. The level of skills has been evaluated by 3 arbitrators (attachment 2) from the staff of faculty of physical education with experiences not less than (10) years in the field of gymnastics then divided them into three, so that we get the degree average for the individuals of sample to identify the sincerity of form. To calculate the sincerity of the differences between the groups by the terminal comparison terminal, the researcher calculated the significance of differences between upper and lower quartiles. After applying skillful evaluation form on a sample of (20) twenty students

from the same community and outside the research sample, the upper and lower quartiles were calculated and the value of tabled (T) at the level (0.05) equaled 1.86. The value of (T) between the upper and lower quartiles in the harmonic capacity tests was between (4.88 : 7.61), the floor gymnastics skills were between (3.47: 6.91) / (5.83) for the skill as a whole and the intelligence test was (9.82) in favor of the upper quartile. This indicated that the tests and the form able to distinguish between the different groups.

Stability:

The stability of harmonic capacity tests and the evaluation form of skillful performance level for floor gymnastics skill was calculated through applying the tests and re-applying it with (3) days and eight (8) days of the intelligence test as a time-lag on a sample of (20) twenty students from the same research community and outside the basic sample. The correlation coefficient calculation between the first and the second application was calculated. The correlation coefficients values for skill parts was between (0.633

:0.881), the total degree of skill was (0.91), the intelligence test was (0.92) and the harmonic capacity tests was between (0.633,0.997) that were significance correlation coefficients statistically at the level (0.05), which refers to the stability of the data collection tools.

The suggested educational program: (attachment 10)

Through the researcher's readings the scientific sources such as "Aziza and two others" (2007), "Essam" (2003), "Mohamed Sobhi" (2001), and the studies related with the subject of research such as the study of "Zainab" (2003), "Salwa" (2002), "Alya" (2004), "Howayda and Madiha" (2008) and "T-Ball" (2004), the proposed program aims at developing some harmonic capacity and learning some floor gymnastic skills through using Taebo exercises for the students of the third grade Division (teaching division) at Faculty of Physical Education- Minia University carried out by the experimental group. The program has been presented for (5) five specialists in the Gymnastics field (attachment 2) to show

their opinion in the extent of the validity program, and modify what they see fit in terms of (duration of the program, the content of the units, and the design of a proposed educational program). It was agreed on the validity of the educational program by all specialists after they have been taking all the scientific observations.

The aim of the program:

The suggested program aims at developing some of harmonic capacities and learning some floor gymnastics by using Tae-bo exercises.

The duration:

The program included 12 training units with 2 units weekly for 6 weeks. The time of unit was 120 seconds.

The content:

Tea-bo exercises were distributed on the program's units in accordance with the plan of developing some of harmonic capacities and learning some floor gymnastics.

The basics of designing the program:

- Taking into account perfecting and varying Tea-bo exercises and directing them in order to effect on the harmonic capacities and the level of

learning floor gymnastics skills.

- Also the content of the educational unit should be in line with each other and be graded in difficulty.

- Preparing an advanced technical performance exercises in order to upgrade with the level of skills performance (under consideration).

Pre-measurement:

The researcher has done the pre-measurement for the experimental and control groups in the period from Sunday 16-3-2014 to Tuesday 18- 3-2014 in the harmonic capacity and the level of performance for some gymnastics skills through a committee of experts of gymnastics through evaluation form for skillful performance.

The basic experimental:

The basic experimental hold from Sunday 23-3-2014 until Wednesday 30-4-2014 on the experimental and control groups. She used the experimental variable (the suggested program for Taebo exercises) on the experimental group for 6 weeks with 2 units weekly "Sunday and Wednesday". Its time was 120 seconds. Taebo program was

applied on the experimental group in the time of physical education; while the traditional program was applied on the control group in learning gymnastics skills (under consideration).

Post- measurement:

The researcher has done the post measurement in the

harmonic capacities and the skillful performance level for floor gymnastics on the experimental and control groups under the same circumstances of the pre-measurement.

Results:-

Table (2)

Significance of the differences between the average of the pre and post measurements for the control group in the coordination abilities and floor gymnastics skills n= 15

Variables	Measurement unit	Pre-measurement average	Post-measurement average	Differences average	Differences deviation	Calculated T value	Statistical significance	
Coordination abilities tests	Body total harmonization	degree	3.00	4.07	1.07	0,59	6.96	significant
	Accuracy& compatibility	degree	6.07	9.93	3.86	1.80	8.30	significant
	Body general agility	second	8.03	7.75	0.28	0.18	6.07	significant
	Stable balance	second	19.39	22.30	2.90	1.35	8.26	significant
	Transition speed	second	7.32	6.87	0.44	0.19	9.05	significant
gymnastics skills Floor	Round-off	degree	1.27	3.47	2.20	0.41	20.60	significant
	Back shoulder	degree	1.34	4.77	3.42	0.46	28.88	significant
	Cartwheel	degree	1.25	3.05	1.80	0.31	22.43	significant
	Handstand-chest	degree	1.45	4.40	2.95	0.43	26.75	significant
	Hecht roll	degree	1.42	3.00	1.58	0.65	9.42	significant
	Handstand roll forward	degree	1.43	2.68	1.26	0.58	8.46	significant
	Total degree	degree	8.16	21.37	13.22	1.01	50.01	significant

The value of tabled (T) at the level of $(0,05) = 2,145$

Table (2) shows the following:

- There are statistical significance differences between the average of the pre and post measurements for the

control group in the harmonic capacities, floor gymnastics skills in favor of the post measurement.

Table (3)

Significance of the differences between the average of the pre and post measurements for the experimental group in the coordination abilities and floor gymnastics skills n= 15

Variables	Measurement unit	Pre-measurement average	Post-measurement average	Differences average	Differences deviation	Calculated T value	Statistical significance	
Coordination abilities tests	Body total harmonization	degree	٢,٥٣	٤,٦٧	٢,١٤	0.64	١٢,٩١	significant
	Accuracy & compatibility	degree	٥,٠٧	١١,٦٠	٦,٥٣	2.42	١٠,٤٧	significant
	Body general agility	second	٨,٠٦	٧,٢١	٠,٨٥	0.26	١٢,٧٢	significant
	Stable balance	second	١٤,٢٨	٣١,٢٣	١٦,٩٥	7.60	٨,٦٣	significant
	Transition speed	second	٧,٢٠	٦,٥٢	٠,٦٨	0.26	١٠,٢٦	significant
gymnastics skills Floor	Round-off	degree	١,٢٠	٤,٢٠	٣,٠٠	0.38	٣٠,٧٤	significant
	Back shoulder	degree	١,٢٧	٥,٤٣	٤,١٦	0.65	٢٥,٠٠	significant
	Cartwheel	degree	١,٣٠	٣,٥٠	٢,٢٠	0.46	١٨,٣٤	significant
	Handstand-chest	degree	١,٤٦	٥,٢٠	٣,٧٤	0.69	٢٠,٩٨	significant
	Hecht roll	degree	١,٤٦	٣,٦٠	٢,١٤	0.51	١٦,٣٨	significant
	Handstand roll forward	degree	١,٥٩	٣,٥٠	٢,٩١	0.64	١١,٦٣	significant
	Total degree	degree	٨,٢٨	٢٥,٤٣	١٧,١٥	1.58	٤١,٥٩	significant

The value of tabled (T) at the level of (0,05) = 2,048

Table (3) shows the following:

- There are statistical significance differences between the average of the pre and post measurements for the experimental group in the harmonic capacities, floor

gymnastics skills and the total degree; as the value of calculated (T) is higher than the tabled one at the significant level(0,05) in favor of the experimental group.

Table (4)

Significance of the differences between the average of the two post measurements for the experimental group in the harmonic capacities and floor gymnastics skills n= 30

variables	Measurement unit	Experimental group		Control group		Calculated T value	Statistical significance	
Coordination abilities tests	Body total harmonization	degree	٤,٠٧	٠,٧٠	٤,٦٧	٠,٤٩	٢,٧١	significant
	Accuracy & compatibility	degree	٩,٩٣	١,٣٣	١١,٦٠	١,٢٤	٣,٥٤	significant
	Body general agility	Second	٧,٧٥	٠,٤٨	٧,٢١	٠,٥٩	٢,٧٨	significant
	Stable balance	second	٢٢,٣٠	١١,٣٨	٣١,٢٣	٤,٩٠	٢,٧٩	significant
	Transition speed	second	٦,٨٧	٠,٣٧	٦,٥٢	٠,٣٣	٢,٨١	significant
gymnastics skills Floor	Side somersault with quarter roll	degree	٣,٤٧	٠,٥٢	٤,٢٠	٠,٥٦	٣,٧٣	significant
	Round-off	degree	٤,٧٧	٠,٣٢	٥,٤٣	٠,٦٨	٣,٤٤	significant
	Back shoulder	degree	٣,٠٥	٠,٣٥	٣,٥٠	٠,٥٠	٢,٨٢	significant
	Cartwheel	degree	٤,٤٠	٠,٤٧	٥,٢٠	٠,٧٠	٣,٦٦	significant
	Handstand-chest	degree	٣,٠٠	٠,٥٠	٣,٦٠	٠,٤٣	٣,٥٢	significant
	Hecht roll	degree	٢,٦٨	٠,٤١	٣,٥٠	٠,٦٥	٤,٠٨	significant
Handstand roll forward	degree	٢١,٣٧	٠,٨٨	٢٥,٤٣	١,٦٥	٨,٤٢	significant	

The value of tabled (T) at the level of (0,05) = 2,048

Table (4) shows the following:

- There are statistical significance differences between the average of the two post measurements for the experimental and control groups in the harmonic capacities, floor gymnastics

skills and the total degree; as the value of calculated (T) is higher than the tabled one at the significant level(0,05) in favor of the experimental group.

Table (5)
Change percentage in the harmonic capacities and floor gymnastics skills for the experimental and control groups

variables	Measurement unit	Experimental group		Change percentage	Control group		Change percentage	
		Pre-measurement average	Post-measurement average		Pre-measurement average	Post-measurement average		
Coordination abilities tests	Body total harmonization	degree	٣.٠٠	٤.٠٧	%٣٥.٧	٢.٥٣	٤.٦٧	%١٤.٥٨
	Accuracy & compatibility	degree	٦.٠٧	٩.٩٣	%٦٣.٦٠	٥.٠٧	١١.٦٠	%١٢٨.٧٩
	Body general agility	second	٨.٠٣	٧.٧٥	%٣.٤٨	٨.٠٦	٧.٢١	%١١.٧٨
	Stable balance	second	١٩.٣٩	٢٢.٣٠	%١٥.٠٠	١٤.٢٨	٣١.٢٣	%١١٨.٧٠
	Transition speed	second	٧.٣٢	٦.٨٧	%٦.١٥	٧.٢٠	٦.٥٢	%٩.٤٤
Gymnastics skills Floor	Round-off	degree	١.٢٧	٣.٤٧	%١٧٣.٢٣	١.٢٠	٤.٢٠	%٣٥٠.٠٠
	Back shoulder	degree	١.٣٤	٤.٧٧	%٢٥٥.٩٧	١.٢٧	٥.٤٣	%٣٧٧.٥٦
	Cartwheel	degree	١.٢٥	٣.٠٥	%١٤٤.٠٠	١.٣٠	٣.٥٠	%١٦٩.٣٣
	Handstand-chest	degree	١.٤٥	٤.٤٠	%٢٠٣.٤٤	١.٤٦	٥.٢٠	%٣٥٦.١٦
	Hecht roll	degree	١.٤٢	٣.٠٠	%١١١.٢٧	١.٤٦	٣.٦٠	%٤٦٥.٧
	Handstand roll forward	degree	١.٤٣	٢.٦٨	%٨٧.٤١	١.٥٩	٣.٥٠	%١٢٠.١٢
	Total degree	Degree	٨.١٦	٢١.٣٧	%١٦١.٨٨	٨.٢٨	٢٥.٤٣	%٢٠٧.١٢

Table (5) shows the following:

Change percentage in the harmonic capacities and floor gymnastics skills for the experimental group is higher than the control one.

Table (2) shows that there are statistical significance differences between the average of the pre and post measurements for the control group in the coordination abilities, floor gymnastics skills in favor of the post measurement. The researcher think that this improvement of the control group in the variables is due to that it

performed the traditional one followed in learning keeping in mind that this improvement was less than the one of the experimental group. This upgrade in the results of the control group is logic as the followed method was according to scientific basis.

Table (3) shows that there are statistical significance differences between the average of the pre and post measurements for the experimental group in the harmonic capacities and the level of skillful performance

(under consideration). The researcher attributed this result for the suggested program using Taebo exercises which are characterized by different effort rhythm during performance such as various kicks, blows and aerobic trainings with high and low rhythm and high and low musical composition ; which helps in exchanging the performance between aerobic and anaerobic exercises. She attributed this result that Taebo program helped in developing muscular bear, body, arms, legs intensity and cardio-respiratory endurance which are high intensive trainings needed moving legs quickly and strength abdominal muscles. It also develop compatibility element beside the strong performance of arms which develop the quick and light force. Using Taebo exercises with the same moving direction and sequences the parties of movement with the same sequence of the skills (under consideration). All these factors help students to move smoothly in order to be suitable for the requirements of skillful performance; thus developing the harmonic capacities led to improve learning floor gymnastics skills. This result agreed with the results of "Alya" (2004) and "Salwa" (2002) and "Billy" (1999) studies, where Teabo

exercises working to improve fitness level as well as with the results of "Maurisy" (2002), citing that performing Taebo exercises regularly leads to improve the fitness level, as it depends on the performance speed with change direction and work on several levels, either stability or movement.

Table (4) shows that there are statistical significance differences between the average of the two post measurements for the experimental and control groups in the harmonic capacities, floor gymnastics skills in favor of the experimental group. This is because Taebo program gave the opportunity for the continuation of the students in performance and thus improve the level of skillful performance. she also took into account to suppose exercises which developed the elements of body fitness with the same moving direction of the skills to be learned, which improve the skillful performance.

Taebo exercises are characterized by being performed by more than body organs at the same time which contribute in improving the harmonic capacities (under consideration) for the experimental group effectively. The result of this study agrees with what " Ahmed" (2009) referred at that the importance

of harmonic capacities represents in being composite aspects which helps in motor construction and developing the capacities with the same performance. Thus the physical aspects develop leading to developing the training and educational capacities. This research also agree with what "Esam" (2003) refer at that the harmonic capacities are associated closely with developing motor skills, as female students can not perform them perfectly in gymnastics without the harmonic capacities of this activity. The highest level of these capacities is, the best new skills students learn. They also affect on perfecting the previous skills they learned, improving them and raising its level as the skillful level is related with the increase of the harmonic capacities of female students. This result agrees with "salwa" (2002) study as Taebo exercises contribute in improving the level of skillful performance.

Results of table (5) refer that Change percentage of the control group in the harmonic capacity was between (3.48%: 63.60%), while the change percentage of the experimental group in the harmonic capabilities was between (9.44%: 128.79%) . this is due to the positive effect of the suggested program using Teabo exercises on improving

the harmonic capacities . the rate of improving the control group was between (87.41%: 255.97%), while the experimental group improved rate was between (120.12%: 327.56%). This is consistent with what "Howayda" (2002) indicated that Taebo exercises are characterized by different movements with music which improve the elements of harmonic capacities and skillful performance level. The researcher attributed this improvement in the research variables to the effect of the suggested program using Taebo exercises which have the same moving direction for the skills(under consideration). Because the scientific rules have been followed well in planning and implementing this program. "Heba" (2005), "Hoveyda" (2008) and " Zainab "(2003) confirm that the training programs of Taebo have been planned scientifically for different aspects and have the greatest improvement of the players performance and capabilities harmonic.

Recommendation:-

- 1- Conduct a study to compare the effect of Tea-bo exercises program with other programs..
- 2- Take attention to the development of harmonic capacity and link them with Tea-bo training in all the different sports in general and in gymnastics in particular.

3- Conduct scientific research to identify Tea-bo training and their impact on the level of skillful performance.

4- Hold similar programs using all new means of training, thus contributing in the improvement of the educational process..

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