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Effectiveness of Mental Strategies using Perception time on Sports confidence and Performance for Sprinters.

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Abstract

This research aims at establishing a program of mental strategies by using the perception time for 100-meter sprinters. The research is supposed to recognize the effectiveness of these strategies on:

- 1 The growth and developing the basic mental skills, which are: relaxation, mental imagery, grid concentration, and perception time.*
- 2 The mental strategies, which are: thinking of the skill of duty, the positive self-talk, retail performance, and emotional control.*
- 3 Sports confidence, the special physical abilities, and Performance for sprinters in the 100 Meter Race .*

The researchers have used the experimental method in the experimental design for one group through the pre-post measurements. The sample, 5 sprinters under the age of 20 years Old, has been intentionally chosen from the Club of 6th of October City. The average age reached (18.20, \pm 0.84) and the average training age (8.80, \pm 1.30). The credibility and consistency co-efficients for all tests and mental, psychological, and physical measurements on the 6-sprinter initial sample have been situated from the same main sample society. Afterwards, the program of mental strategies has been applied through 'time perception' on the research chief sample on the scale of 3 units per week and for 12 weeks with duration of 30 minutes per unit.

Meanwhile, the accompanying skilled physical program is 60 minutes within the training unit from 18th June 2012 till 8th September 2012. The research results have proved differences with statistic indications between the pre-post measurements of the basic and specialized mental skills, the mental strategies, the dimensions of the sports confidence, the physical abilities, and Performance for sprinters in the 100 Meter Race. The results were in favor of the post measurements due to the effectiveness of the mental strategies program through perception time accompanying the flexibility and agility training for developing the elements of speed and confidence for sprinters. The researchers recommend using the proposed program for sprinters and different levels of age.

Introduction

The integration between mind and body is the way to discover our real abilities. To realize that aim, the athlete should possess the desire in spending time in training the mind as well as training the body. The developments of both the movement skills and the physical abilities are in parallel progress with the athlete's mental skills development (1:20).

The scientific fact signifies that paying attention to the physical preparation at the expenses of not paying due attention to the mental and psychological one leads to the instability of the athlete's performance and his failure in exerting his best in the sports events (2:13). Meanwhile, others achieve the best records due to using and manipulating their mental skills and abilities actively and in an integrated way in the sports events (3:80).

The scientists and experts' views in the sports psychology field have never been unified about identifying and classifying the mental abilities and skills related to the different and distinguished sports activities for each sole athlete. Even the skills required or contributing to realize the achievement have not been clearly stated in the sports field.

The necessary mental skills for Olympian athletes can be specified within the frame of stating goals, the relaxing training, controlling excitability, the mind visualization, and the self-talking (4:69).

On the other hand, Mohamed El Araby and Magda Ismail (2001) have highlighted that the mental training in the sports field includes: the basic mental skills, the specialized mental skills for certain sports activity and the mental strategies (3:22).

The stage of the basic mental skills is considered one of the important preliminary dimensions in the mental training

program. Consequently, the stage of the specific mental skills is the next step in the program of mental training. This stage depends on how to apply usefully these mental skills to raise the athlete's performance in the specific activity to realize the best performance whether during the training or in the events (5:367).

The mental strategies are the final stage in the program of the mental training. This stage acts as an important dimension of knowledge to realize high levels of sports achievement through thinking isolation and overcoming these obstacles. The training on these strategies gives the feeling of security which results in reducing the fear from failure and preventing mistakes to occur. There are a lot of these mental strategies which are used to prepare the athlete for events such as: the positive self-talk, thinking in the skills of duty, retail performance, the performance mood words, positive thinking, establishing goals, emotional control, excitements, and the automation (6:21,22).

Athletics events in general, and sprint events in particular, are considered among the competitive sports which have unique nature in using special training related to thinking strategies. To raise the digital record in different events of athletics in this context, the researchers have so far depended on developing some mental and psychological abilities and skills such as: relaxation, mind imagery, and grid concentration. However, there are another specific mental skills required to be added to the previous ones such as 'time perception' training where time plays the role of the record to break through hard training to reach the achievement levels.

Out of the integrated approach between the mind and the body, this research targets integrating the mental strategies for sprinters through 'time perception' together with the physical requirements to develop the speed element which International Athletics Federation has pointed out for the second level coaches through developing grace and flexibility elements in addition to not disregarding the training of strength and plyometric (7:57-59)

Accordingly the research problem has arisen in a try to put mental strategies tailored for 100-meter sprinters. This event is the most exciting one that includes training on the basic mental skills, then the specialized mental skills using 'time perception', and finally training on some of the mental strategies. All these skills are co-related with developing and training on the sprinters' physical abilities and recognizing the effectiveness in increasing the sports confidence and the digital level.

Research Aims:

This research aims to develop a program for mental strategies using Perception time for sprinters in the race 100 meters and to identify the effectiveness of the growth and development of:

- 1 - Basic mental skills and specialized (Ability to relax - Mental visualization - Grid concentration - Time Perception).
- 2 - Mental strategies.
- 3 - Sport Confidence.
- 4 - Physical abilities for sprinters in the race 100 meters.
- 5 - Performance for sprinters in the race 100 meters.

Research methodology:-

Experimental method in an experimental design using one set of measurement (pre / post)

.Research sample:-

The sample was selected intentionally of five sprinters for the race (100) meters under the age of 20 years old in 6th of October City Club registered in the Egyptian Federation of Amateur Athletics training for the season 2012/2013. The researchers' finding has homogeneity of the sample search in some of the variables that may affect the search results.

Table (1)

The Mean, Standard Deviation and Skewness for Research sample In the Variable" Length – Weight – Age – Training Age"

Variables	The unit of measurement	Mean	Median	Standard deviation	Skewness
length	C M	175.40	176.00	2.70	- 1.34
Weight	KG	67.40	67.00	1.14	0.405
Age	Year	18.20	18.00	0.84	- 0.512
Training Age	Year	8.80	9.00	1.30	- 0.541

Shown in Table (1) indicates that Find sample homogeneity in variables" Length – Weight – Age – Training Age" Where limited Skewness between (± 3)

Research tools:-

- Ability to relax scale
- Mental imagery scale in sport
- Grid concentration Test

- Realization time Test
- Mental strategies scale in sport
- Sport Confidence scale

Pre measurement:-

- Performance (Friday 1/6/2012)

- Physical variables (from Sunday 3/6/2012 to Tuesday 5/6/2012)

- Mental variables (from Sunday 10/6/2012 to Tuesday 12/6/2012)

Application program:-

The proposed program of the mental strategies using 'time perception' has been applied and the physical program for developing the speed of 100-meter sprinters as well. This has been in place for 12 weeks on the scale of 3 training units per week.

The duration of the training unit is 90 minutes divided into 30 minutes training for the mental skills and strategies; 60 minutes for the physical and skillful abilities. This research has taken place starting Monday 18th June 2012 Till Saturday 8th September 2012 in the Club of 6 October City.

Post measurement:-

- Performance (Sunday 9/9/2012)

- Physical variables (from Monday 10/9/2012 to Wednesday 12/9/2012)

- Mental variables (from Saturday 15/9/2012 to Monday 17/9/2012)

Statistical processing plan:-

The used statistical program SPSS version 21 for data processing is as follows: Mean - Median - Standard Deviation – Skewness - Correlation "Pearson"- Cronbach Alpha Coefficients - Z test “Nonparametric Test”. Researchers have embraced the significance level (0.05) to accept the results.

Result discussion:-

(1) Present and discuss the results of basic mental skills and specialized:

Table (2)
significant differences between pre and post indices for members of the research sample in basic mental skills and specialized.

Variables	Difference		Mean Rank	Sum of Ranks	Z	Asymp. Sig
	Direction	N				
Ability to Relax	-	0	0.00	0.00	2.03*	0.042
	+	5	3.00	15.00		
	=	0				
Visual Visualization	-	0	0.00	0.00	2.02*	0.043
	+	5	3.00	15.00		
	=	0				
Auditory Visualization	-	0	0.00	0.00	2.02*	0.043
	+	5	3.00	15.00		
	=	0				
Kinesthesia Visualization	-	0	0.00	0.00	2.03*	0.042
	+	5	3.00	15.00		
	=	0				
Emotional Visualization	-	0	0.00	0.00	2.06*	0.039
	+	5	3.00	15.00		
	=	0				
Control Visualization	-	0	0.00	0.00	2.07*	0.038
	+	5	3.00	15.00		
	=	0				
Concentration Attention	-	0	0.00	0.00	2.06*	0.039
	+	5	3.00	15.00		
	=	0				
Realization time 15 Second	-	5	3.00	15.00	2.02*	0.043
	+	0	0.00	0.00		
	=	0				
Realization time 25 Second	-	5	3.00	15.00	2.03*	0.042
	+	0	0.00	0.00		
	=	0				
Realization time 45 Second	-	5	3.00	15.00	2.03*	0.042
	+	0	0.00	0.00		
	=	0				

Shows the significant level and Z (0.05) =1.96

As Shown in Table (2) there were statistically significant differences between pre and post indices for members of the

research sample in basic mental skills and especially at the level (0.05) in favor of the post measurement.

(2) Present and discuss the results of mental strategies under discussion

Table (3)

significant differences between pre and post indices for members of the research sample in mental strategies.

Variables	Difference		Mean Rank	Sum of Ranks	Z	Asymp. Sig
	Direction	N				
Thinking the skill of duty	-	0	0.00	0.00	2.03*	0.042
	+	5	3.00	15.00		
	=	0				
Positive self-talk	-	0	0.00	0.00	2.04*	0.041
	+	5	3.00	15.00		
	=	0				
Retail Performance	-	0	0.00	0.00	2.02*	0.043
	+	5	3.00	15.00		
	=	0				
Emotional control	-	0	0.00	0.00	2.04*	0.041
	+	5	3.00	15.00		
	=	0				

Shows the significant level and Z (0.05) =1.96

As Shown in table (3) there were statistically significant differences between pre and post indices for members of the research sample in mental strategies under discussion at the

level of significance (0.05) in favor of the post measurement.

(3) Present and discuss the results of Sport Confidence:

Table (4)

significant differences between pre and post indices for members of the research sample in Sport Confidence.

Variables	Difference		Mean Rank	Sum of Ranks	Z	Asymp. Sig
	Direction	N				
Perceived Sport Competence	-	0	0.00	0.00	2.03*	0.042
	+	5	3.00	15.00		
	=	0				
Perceived Control	-	0	0.00	0.00	2.06*	0.039
	+	5	3.00	15.00		
	=	0				
Dispositional Optimism	-	0	0.00	0.00	2.06*	0.039
	+	5	3.00	15.00		
	=	0				

Shows the significant level and Z (0.05) =1.96

As Shown in the table (4) there were statistically significant differences between pre post indices for members of the research sample in Sport confidence under sports at the level (0.05) in favor of the post measurement.

(4) Present and discuss the results of physical abilities 100m sprint:

Table (5)

significant differences between pre and post indices for members of the research sample in physical abilities 100m sprint.

Variables	Difference		Mean Rank	Sum of Ranks	Z	Asymp. Sig
	Direction	N				
30 meters flying start	-	5	3.00	15.00	2.03*	0.042
	+	0	0.00	0.00		
	=	0				
Reaction Time (Nelson test)	-	5	3.00	15.00	2.04*	0.041
	+	0	0.00	0.00		
	=	0				
Static Long Jump	-	0	0.00	0.00	2.03*	0.042
	+	5	3.00	15.00		
	=	0				
Legs muscle strength	-	0	0.00	0.00	2.06*	0.039

Variables	Difference		Mean Rank	Sum of Ranks	Z	Asymp. Sig
	Direction	N				
	+	5	3.00	15.00		
	=	0				
	-	0	0.00	0.00		
Back muscle strength	+	5	3.00	15.00	2.12*	0.034
	=	0				
	-	0	0.00	0.00		
Flexibility (trunk Forward bend from standing)	+	5	3.00	15.00	2.07*	0.038
	=	0				
	-	0	0.00	0.00		
Barrow Zig-zag Run	+	0	0.00	0.00	2.03*	0.042
	=	0				
	-	5	3.00	15.00		

Shows the significant level and Z (0.05) =1.96

As Shown in the table (5) and there were statistically significant differences between pre and post indices for members of the research sample in physical abilities tests under discussion at the level of significance (0.05) in favor of the post measurement.

(5) Present and discuss the results of Performance for sprinters in the 100 Meter Race:

Table (6)
significant differences between pre and post indices for members of the research sample in the Performance for sprinters in the 100- meter Race.

Variable	Difference		Mean Rank	Sum of Ranks	Z	Asymp. Sig
	Direction	N				
Time 100-meter sprint	-	5	3.00	15.00	2.03*	0.042
	+	0	0.00	0.00		
	=	0				

Shows the significant level and Z (0.05) =1.96

As Shown in the table (6) and there were statistically significant differences between pre and post indices for members of the research sample in the Performance for sprinters in the 100- meter Race.at the level of significance(0.05) in favor of the post measurement.

Conclusions:

- 1- The basic mental training is one of the necessary steps before starting the training of the mental strategies.
- 2- Using mental strategies through perception time leads to the increase and development of the basic and specialized mental skills for 100-meter sprinters (relaxation, mental imagery, concentration grid, time perception
- 3- Using mental strategies through perception time leads to the increase and development of the dimensions of the mental strategies: thinking about the skill of duty, positive self-talk, retail performance, and emotional control.
- 4- Using mental strategies through perception time leads to the increase and development of the dimensions of sport confidence for 100-meter sprinters: perceived sport competence, perceived control, depositional optimism

- 5- Depending on the physical training of agility and flexibility that accompany the training of the mental strategies through perception time leads to increasing and developing the special physical abilities and the digital level for 100-meter sprinters.
- 6- There are interwoven relations among the mental strategies where the training impacts some strategies in specific while others are not impacted because of being not trained on.
- 7- The training of perception time accompany the mind visualization has an effective impact on developing time perception related to the stages of the 100-meter sprint event and the competition as a whole.

Recommendations:-

- 1- Paying due attention to the training of the basic and specialized mental skills in the stages of 100-meter sprint event.
- 2- Using the proposed program in speed events (200 meters, 400 meters, 100-meter hurdles and 110-meter hurdles).
- 3- Doing more researches on the mental strategies in all events of the athletics.

- 4- Paying due attention to the training of the perception time where the time variable acts as one of the important variables in realizing the achievement for the event of the 100-meter sprint.

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