

The impact of brain imagining on the accuracy of free throw skill in basketball

¹ Asst. Prof. Dr. YASAR SABAH JASIM

Abstract

This study contains five chapters. Chapter one tackles the introduction of the study, the importance of the study; which emphasizes the brain imagining, relaxation and mind training. They influence positively and have an important role in developing basketball skills in general and the free throw skill in specific way. Thus trainers have to add it in their training units. The aim of the study tackles knowing the relation between brain imagining and free throw in basketball, and knowing the influence developing brain imagining in the accuracy of shooting in basketball. While the domains of the study contain the human domain, the player of sub-mnion of basketball in Diyala who are 20. The place domain is the playground of the physical college. And the time domain is from 2nd of dec.2004 until the 5th of mar.2005. The study also contains reviewing literature, method, and field procedures of the study, thus the training method are used for the sample chapter four contains displaying and analyzing results. Eventually, chapter five contains the conclusions such as: mind training has positive effect on learning shooting and free throw in basketball, moreover mind training increasing the possibility of success of free throw. Whereas the recommendations are: using and emphasizing mind training for the trainers and players and emphasizing brain imagining and giving some time for it in the training unit and make a strategy to train the players to reinforce skill aspect.

Keywords: *impact, brain, imagining, accuracy, free throw, skill, basketball*

Introduction

The full numbers of all aspects (physical, skill, written and psychological) of integrated sports training leads to the individual reaching the higher levels. The developed countries have competed in finding the most appropriate ways to develop the training process in order to reach the championship sites based on this on scientific foundations and theories in the processes of the integrated numbers of athletes and the operations are prepared Mental (mental) is one of the important factors for training and then winning and achieving high sporting achievements for most international champions, especially as they converge in terms of physical, skill, linear and psychological level. Accordingly, experts, trainers and those interested in sports training have studied many issues and training problems, and made a lot of response related to training and revealed Solving many problems and in various sports and trying to benefit from them as much as possible, and it really needs more experiences, research and studies to find appropriate solutions and mental processes, including mental perception, one of the important topics related to motor performance and preparation before performance, especially in the movements that determine the level of achievement in it. It depends The position of the player in this short period, such as the free throw of the basketball, which has an

¹University of Diyala College of physical education and sport science
yassarsport@yahoo.com

important role in the process of obtaining a score without the presence of a direct opponent that impedes the correction process, and what increases the importance of studies related to the free throw is that every mistake after the fourth mistake leads to free throws (Hashem, 1988). The mental perception is the core of the successful thinking process, and it is a reflection of things and appearances that the individual has previously perceived and begins with the parts and then the faculties, and the physiological basis for perception is those processes that happen to the parts of the sensory organs located in the brain, while the sense organs themselves do not perform a function in the perception process. The mental perception is not limited to previous experiences, but the mind can form new perceptions that did not happen before, because the person also has the ability to create mental perceptions about future situations. And mental perception is more than just seeing, it is an experience in the eyes of the mind and that mental perception is due to touch, hearing and all the senses, but vision remains the main factor in forming a successful mental perception, and the connection between them is the secret of the success of the performance of the skill. Perception is a cognitive function of the organism and it is a fundamental factor in the development of motor skills and performance. It is necessary to link the visual perception with the intellectual aspect resulting from the verbal explanation of the motor skill, and it is important to work to raise the level of mental perception in order to reach sports excellence (Yaroub, 2002). The coach must know what happens in the player's brain when learning the motor skill, and if it is easy, then it is He learns the skill by developing and improving the mental image that is imprinted in his mind by repeating its performance, but if the skill is difficult and complex such as hitting a plane or tennis and shooting basketball, then it is learned through multiple different responses that result in images printed in the brain. The mental perception embedded in the brain will benefit the player in the case to which it applies only, and in order to benefit from this image in his performance of the skill during the competition, there must be multiple mental images of the skill that may reach thousands, which are reconciled to choose the appropriate images for the situation and even if this is done, it is It is difficult to choose quickly among them, which corresponds in speed to the successive situations that change and fast during the competition (Magazine, 1999) The skill of shooting basketball is one of the most important skills in basketball, as well as one of the most used in this game. Team members must master the skill of correction. Continuously in order to win the game, because the basketball match is decided by points, so the shooting skill is one of the basic and vital skills of the player and he must learn and perform it masterly under various circumstances. Here comes the role of the basketball coach to take care of developing the skills of his players and improving their ability to perform this skill to create an effective team From here, a researcher decided to study the skill of shooting (free throw) with basketball among basketball players by training them to learn and master this skill in a way. Each makes it an influential skill in changing match results and keeping pace with the perception occurring in the rest of the other skills in basketball and using mental visualization at the present time to increase the degree of learning and accuracy of players for the skills they practice and thus improve their level of performance has ensured (White and hardy,1998) that, through mental visualization, "we can see visual images and feel movements in the form of images, or we pass in a state of perception of smells and tastes or sounds without experiencing the real thing. (White, 1998) In addition to these two between the perception of mental and dream "We are vigilant and when mental images form a " mental perception that increases the effectiveness and accuracy of this skill and develop them to reach the highest levels and to achieve the best results in the field of basketball.

Research problem: that the loss of easy opportunities for correction when the team is in need, due to lack of injury to the target when performing a free throw in a game of basketball, leading to the loss of the team,

especially at the level of convergence of the two contestants through interviews Which was conducted by a researcher with a number of coaches, players, researchers and those interested in the game, as well as his practice of the game and his observations and his review of many records of the Iraqi Basketball Federation (Diyala branch), he found that a lot of free throws are wasted in matches and that their failure constitutes a large percentage, and that many teams have lost from On the free throw line due to failure to hit the target in the free throw (or the correction process), a researcher believes that one of the reasons for wasting opportunities in correction is the lack of a correct mental perception to prepare and focus, the failure to invest the full time specified in five seconds and the lack of physical fitness in addition to other factors Such as inattention and inaccuracy in correction. Therefore, a researcher decided to study this problem and identify it and find the best methods for free throw training and develop the necessary solutions to serve the game basketball and sports movement, and let this research be the first point of view for coaches to benefit from it in their training;

Research goals: Identify the relationship of mental perception in developing the skill of shooting free throw with basketball; Identify the effect of developing mental perception on the accuracy of shooting (free throw) with basketball.

Research postulations:

- 1) There are fur s statistically significant differences between both indices pre and post the officer of the group of experimental and in the level of accuracy shooting free throws basketball, for the benefit of telemetric.
- 2) There are significant statistically significant differences between the post test for the experimental and control groups and in favor of the experimental group.

Research limits

- Human field players training center sub - Union Basketball / Branch Diyala youth.
- Spatial Domain, University of Diyala - Faculty of Physical Education -The closed hall.
- Temporal area of 02.12.2018 until 05.03.2019.

Methodology

Research methodology: The researcher used the experimental approach to suit the nature of the problem in this study.

*Research sample:*The research sample included all 20 players at the Basketball Sub-Training Center / Diyala for the youth category (Table 1). After the pre-test procedure, the sample was divided into two experimental groups (10 players) and control (10 players).

Table (1) Demonstrates sample homogeneity of height, age, weight, and shot accuracy test

Variables	Experimental		Control		Homogeneity coefficient	C. Tabular	The result
	s	P	s	P			
Length (cm(	170.5	6.43	169.6	6.15	0.32	1.83	Not moral
Weight (kg(	61.9	2.84	61.2	2.70	0.57	1.83	Not moral
Age (years(	15.2	1.03	15.0	0.90	0.45	1.83	Not moral

Degree of freedom = 9, level of significance = 0.5

Table (1) shows that there are no significant differences between the experimental and control groups for youth basketball players in both height, weight and age, which indicates the homogeneity of the two groups in this study.

Table (2) Homogeneity between the experimental and control group in shooting from the free throw for the pre-test.

Variables	Shooting from a free throw		
	s	+P	Coefficient of torsion
Control group n-1	11.400	1.578	2.600
Experimental group n-1 = 9	11.100	1.287	2,900

Table (2) shows the homogeneity of the sample members between the control and experimental groups through the torsion coefficient of the free throw pre-test, where the control group was 2,600 and the experimental group 2,900, and this is an indication that the sample members are homogeneous in this test because the torsion coefficient did not exceed +3 and was not less than -3.

Research Tools: Arab and foreign studies and research, Basketball Stadium, Basketballs, Registration Form,
Research procedures

▪ **Exploratory Experience**

A researcher conducted an exploratory experiment on five players to find out the sequence of actions and make the players understand the purpose of the study and the process of implementing the correction skill from the free throw line for ten direct attempts to the basket ring to score a direct goal.

Recording in the registration form prepared for this purpose the number of goals scored out of a total of ten attempts, after this pre-test is carried out, a researcher requests the players to sit down and start the process of mental visualization and correction from the free throw line with visualizing the following characteristics after their explanation and presentation by the researcher.

- Parking strategy.
- Correction level.
- The perfect launch height for the ball.
- Ball launch angle.
- Symmetry between the upper and lower limbs.
- Rotate the ball Knudsen (1993)

After that, a researcher asked the players, after completing the visualization of the correction movement mentally with the perception of the ball entering the basketball ring, to raise their hands to indicate that the player has finished the mental visualization process, the process is repeated for twenty minutes, the player who cannot perceive the movement (in a positive manner) The mental visualization is required for a second time, and a researcher summoned these five players and asked them to perform the mental visualization process a second time for twenty minutes, then perform ten attempts to throw at the basket ring and from the free throw line, the researcher recorded the results of the posttest to extract the correlation coefficient between the two tests.

Main experience

A researcher conducted the pre-test on 1/12/2018 after the sample consisting of 20 young basketball players was divided randomly into two experimental groups (10 players) and a control (10 players). Each player was asked to stop at the free throw line and execute twenty free throws, taking into account The characteristics of the throw, which a researcher explained and presented as in the exploratory experiment. The researcher recorded the number of successful and failed throws in a special form. The researcher identified 4 training units for the experimental group and by a conceptual training unit per week (1/5, 1/12, 1/20, 1/27) In the

first, second and third training unit, the players were asked to mentally visualize the shooting movement for a period of ten minutes after the team as a whole had finished the regular training unit of the team .The post test was carried out by the experimental control group twenty shots (after a session of mental visualization) and under the same conditions in which the pretest was conducted, and the results were recorded in the form.

Statistical Methods (Wadiah, 1999) this study used the following statistical methods :arithmetic mean and standard deviation and coefficient of torsion and test t

Results

1. Presentation, analysis and discussion of results

– Presentation and analysis of results

Table (3) shows the arithmetic mean and percentage of correction in the pre-test and the percentage in the post test, as it appeared that the correction of the experimental group had improved from (60%) to (70%), meaning that the percentage of improvement was (10%) between the two tests. There was also an increase in the control group of (1.5%), and this is normal for the team as a whole to continue training for about (25) days.

Table (3) the arithmetic mean, percentage, pre-test and post-test, and shooting improvement percentage

Variables	Arithmetic mean pretest X	The percentage of aiming	The arithmetic mean post test X	Percentage to shoot	Correction percentage improvement
Experimental n = 10	13.00	60%	14.9	70%	10%
Control n = 10	12.9	59.5%	13.2	61%	1.5%

Table (4) shows the arithmetic mean and standard deviation with t Tabular and calculated, where there is a significant difference between the pre and posttest in favor of the experimental group, and this indicates an improvement in the level of correction (accuracy) among the experimental group players as a result of the mental perception.

Table (4) the arithmetic mean and standard deviation of correction for the experimental and control group t Tabular.

Variables	The pretest		Post test		T calculated	C. Tabular	The result
	s	+P	s	+P			
Experimental n = 10	13.00	2.03	14.90	2.56	2.40	1.83	Not moral
Control n = 10	12.90	1.98	13.2	2.41	0.40	1.83	Not moral

Degree of freedom = 9, p Significance level = 0.5.

– Discussion of results

Through the presentation of the results of this study, there was an improvement in the percentage of correction among the players of the experimental group by (10%), as well as the presence of a statistically significant difference between the control and experimental group and in favor of the experimental group when compared to a test. t. This is an indication that the mental perception had an effect on the accuracy of correction, which means an improvement in the performance of the players of the experimental group and the correction of basketball.

These results achieved the hypotheses of the study as the mental visualization gives the player a plan or formulation of the kinematic shape before, after and after its implementation in order to divert the player's attention completely to performance at the highest levels.

The researcher believes the physical components of performance are one form of skill and the other form of performance that he should think of in perceptual or mental perception as another aspect of the skill of shooting basketball.

This result also indicates that the physical and skill performance alone is not sufficient to develop the ability to focus attention, mental perception, and the free throw characteristic that needs to be practiced in the ability to relax, focus and harmonize between the body parts and a correct mental perception to properly perform the skill, so the focus must be on visualization in training a skill Shooting with basketball.

It is evident from Table (1) that the experimental group has achieved a tangible improvement in the level of skill performance at the end of the application of the educational program accompanied by the training program on developing mental perception, and this confirms the effectiveness of the program used in teaching the free throw skill for youth.

It is also evident from the table that the difference between the pre and post measures of the experimental group in the ability to visualize was statistically significant.

These results confirm that the exercises used in the proposed program of visualization led to the development of the capacity of the experimental group.

It is also evident from the table that accompanying the mental visualization program to the training program contributed to the development of the relaxation ability of the experimental group, where relaxation is an important factor in reducing stress and avoiding psychological disorders resulting from competition pressures or skill training.

It means accuracy and focus in performance, it also makes movement responses easier, reduces muscle tension, and makes movement more economical. This is consistent with what Muhammad Hassan Allawi said, that relaxation training is an important means of controlling and modifying the physical and psychological state of the player.

The superiority of the experimental group over the control group in the level of skill performance in the skill of free throw is due to the application of the proposed mental visualization program, including the elimination of muscle relaxation and mental relaxation, and the development of the ability to clarity and control of mental perception, all of which have a positive impact on motor learning.

Where the program is one of the factors that enhance learning by linking visual perception with motor and skill performance, which improves the cognitive process and supports experience and affects behavior with re-reinforcement with repetition of perception. Its dynamic performance, and this is consistent with what was indicated by (Muhammad, 2001) , Hamad al-Arabi Shamoun and Majida Ismail, that mental training before skillful performance contributes to the ease and flow of performance and is considered as a transition from surrounding conditions not related to direct performance and from abstract thinking to coexistence of performance through the senses and different feelings.

These results also agree with what was confirmed by both Muhammad al-Arabi Shamoun and Abd al-Nabi al-Jamal of the contributions of mental perception in relaxing the skill and mobility experiences acquired by the player in training for use in time during matches. A researcher adds that young people retrieve the skills they studied in practical test situations and reduce their tension It gives its performance the character of ease and accuracy and supports confidence in itself and that the proposed mental visualization program helps to

focus on the skill as a whole and improves the mental perception of the skill, which is one of the important dimensions of excellence in skill performance to increase the use of the auditory, visual and sensory senses, which reflects positively on the skill performance.

The application of self-control exercises that is open to muscle relaxation helps in the dimensions of unwanted hardships such as thoughts and emotions. Relaxation exercises contribute to the removal of tension and nervous disorders from areas where tension is concentrated, and relaxation exercises should represent an important place in youth training in basketball as it is considered Of great importance in match results.

Conclusions

1. Mental training has a positive effect on learning the skill of free throwing shooting with basketball.
2. That mental training increases the likelihood of successful free throw basketball shots.
3. Mind training makes basketball more accurate by pre-shooting performance strategy.
4. Mental visualization enhances confidence that has a positive impact because it eliminates stress, anxiety and fear of failure by isolating the player from his external environment and interacting with the inner environment.

Recommendations

1. The use and emphasis of mental visualization by coaches and players.
2. Take time in the mental visualization training module to strategize the skill that athletes train in to reinforce the skill side.
3. Finding appropriate, easy and good methods of training for training in mental perception and trying to improve and develop it among players.
4. Conducting similar research with the addition of another experimental group that combines physical and mental training and comparing them with the results of the mental training group only.

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Appendix No (1) Sample for training modules from the mental visualization program

the week	Unit	Target	Content	Repetition	Time	
					sec	Total time
the third	The fourth	Perform muscle and mental relaxation exercises	1. (Restlessness) Close the eyes and be free from any sources of light or tension	6	10	A minute
			Comfort	1	5 Sec	5 Sec
			2. (Recession) - contraction of the muscles of pulse, stability, and then relaxation	6	10 Sec	1 minute
			Comfort	1	5 Sec	5 Sec
			3. (Recumbency) bending the metatarsal to the leg and steady, then returning to relax	6	10 Sec	1 minute
			Comfort	1	5 Sec	5 Sec
			4. (Restlessness) Pushing the ground with two hands, standing firm, and then relaxing	6	10 Sec	1 minute
			Comfort	1	5 Sec	5 Sec
			(Lie down) the arms up, grip the hands firmly until the player feels a sense of tension			
			Muscles, firmness and then relaxation	6	10 Sec	1 minute
			Comfort	1	5 Sec	5 Sec
			6. (Resting) tightening the facial muscles, with the eyes closed, steady, and then relaxed	6	10 Sec	1 minute
			Comfort	1	5 Sec	5 Sec
			7. (Recession) contraction of the muscles of the body as a whole, stability, and relaxation	6	10 Sec	1 minute
			Comfort	1	5 Sec	5 Sec
			8. Long sitting / contracting both body muscles, steady and then relax	6	10 Sec	1 minute
		The development of the capacity for external mental perception	Comfort	1	5 Sec	5 Sec
		1. The player watches a recorded video of one of the players in the world in the free throw skill, then the video is closed and the player closes	2	3 minutes	6 minutes	

		his eyes and makes a mental visualization of the same attempt that the global player made inside a mind.			
		Comfort		15 Sec	30 sec
		2. Replay the video again to ensure the accuracy of the internal mental perception, and the eyes are closed again, and the player visualizes the same movement and the player's performance of the skill.	2	3 minutes	6 minutes
		Comfort			
		3. The player watches the free throw performance of one of the outstanding players in the performance of the skill and then closes his eyes and retrieves the skill performed by the distinguished player again.	2	3 minutes	6 minutes
Total			30 minutes		