

SOME ASPECTS OF ATTENTION AND THEIR RELATIONSHIP TO THE ACCURACY OF FREE THROW PERFORMANCE IN BASKETBALL

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ABSTRACT

The importance of research and study lies in identifying the correlational relationship between aspects of attention and accuracy in performing free throw shooting in basketball among players from the research sample. The research problem is highlighted by the significant role played by attention aspects in the game of basketball, as well as the shooting skill, representing the fundamental offensive skill through which a team scores points and, consequently, secures victory in the match. The research problem lies in understanding the correlational relationship between aspects of attention and the accuracy in free throw shooting among players from the research sample. The research objectives aimed to assess the performance level of individuals in the research sample in terms of the accuracy in free throw shooting in basketball and to determine the correlational relationship between some aspects of attention and the accuracy in free throw shooting among players from the research sample. The researcher utilized the descriptive approach using correlational relationships. Tests and measurements were employed to evaluate the players' performance within the research sample. Scientific bases were obtained for these tests to ensure their credibility in reaching and presenting the results obtained in the fourth chapter for discussion. One of the significant conclusions drawn by the researcher was the presence of a significant correlation between the studied aspects of attention and the accuracy in free throw shooting among players from the research sample.

Keywords: Attention aspects, Free throw shooting.

Chapter One

Introduction and Research Significance:

The attention to psychological factors is exceedingly crucial and considered one of the important elements for winning matches. This undoubtedly contributes to achieving high accomplishments. This positively impacts winning games in various sports, particularly in basketball. It's essential to recognize that mental processes are highly significant and deserve attention and study. Attention, among those mental processes, is one of the most important psychological topics related to skillful performance, both offensively and to achieve success. Attention serves as the basis for various mental processes because a basketball player, without attention, cannot learn, remember, or think about anything, especially in different match circumstances and the particular nature of the game. Attention is the primary factor contributing to the learning process. There must be attention first, followed by perception. Attention helps in understanding and inferring things quickly.

In sports, attention encompasses several aspects, and achieving high levels in athletic performance or accomplishment significantly depends on the growth and enhancement of these aspects. Each activity requires these aspects to varying degrees. Athletes need to learn motor

skills, master them, and this is only achieved through comprehensive preparation encompassing physical, mental, skill-related, and strategic aspects.

In basketball, the utmost importance of attention becomes evident due to the game's nature characterized by speed, numerous changing situations, and the multiplicity of defensive and offensive situations along with their fundamental skills. Among these skills, shooting accuracy is crucial and serves as the culmination of the attack. Teams score the highest number of points through this skill to win matches, rendering all skills and strategies useless if not ultimately successful in shooting. Therefore, basketball players must possess a good level of attention in its various aspects to affect shooting accuracy positively, a feature observed among individual players in team sports in general and specifically in basketball. Thus, players need precise attention and good focus when performing free throws, which are considered a method of executing penalties when an error occurs by the opposing team.

Research Problem:

Shooting accuracy is one of the most essential basic offensive skills in basketball, determining the outcome of games. Hence, coaches and researchers are mainly concerned with this skill, influenced by several factors that enhance it. Among these factors is attention, which constitutes a vital element in basketball's basic skills and other sports. Basketball players need continuous attention and accurate observation of players' movements, as the game's focus is the player holding the ball. Lack of attention, inefficiency in tracking and observing players, leads to the loss of exerted effort and plan failure. After reviewing several scientific sources and being a college team coach, the researcher felt the necessity to delve into this study, attempting to understand the relationship between aspects of attention and the accuracy of free throw shooting among players from the research sample.

Research Objectives:

1. Assess the performance level of individuals in the research sample concerning the accuracy of free throw shooting in basketball.
2. Determine the correlational relationship between some aspects of attention and free throw shooting skill among players from the research sample.

Research Hypothesis:

The researcher assumes:

- There is a statistically significant correlational relationship between some aspects of attention and the accuracy of free throw shooting among players from the research sample.

Research Fields:

1. Human Field: Players from the College of Physical Education and Sports Science basketball team for the academic year 2022-2023.
2. Temporal Field: From 3rd December 2022 to 13th January 2023.
3. Spatial Field: The enclosed sports hall in the College of Physical Education and Sports Science, Al-Qadisiyah University.

Chapter Two: Research Methodology and Procedures:

Research Methodology:

The researcher employed the descriptive method using a correlational relationship approach due to its suitability for the nature of the study.

Research Sample:

The researcher selected the research community, comprising players from the College of Physical Education and Sports Science team at Al-Qadisiyah University for the academic year 2022-2023, totaling 20 players. The research sample included the same players who participated in the Al-Qadisiyah University Colleges Championship for the academic year 2022-2023.

Tools, Devices, and Instruments Used in the Research:

Tools and Instruments Used in the Research:

The researcher utilized the following methods to gather information, address the research problem, and achieve the set objectives:

Arabic and foreign references and sources.

Tests and measurements.

Observation and experimentation.

Personal interviews.

Devices Used in the Research:

Device for attention stabilization.

Electronic timing watch (Casio).

10 basketballs.

Ropes.

Colored tapes.

Whistle.

Determining Study Variables:

The researcher reviewed numerous scientific sources, studies, theses, conducted multiple personal interviews with experts and specialists in the field of basketball and sports psychology, tests, and measurements. Subsequently, based on the findings from these experienced interviews, the researcher identified the study variables, as follows:

Free throw shooting accuracy

Attention concentration

Attention distribution

Attention conversion

Attention intensity

Identifying Study Variable Tests:

Identifying Tests Used in the Study:

The researcher reviewed scientific sources and studies related to basketball shooting and attention. The researcher found that the best test for measuring the free throw shooting variable is the "Faul Shot Test," and there is a dedicated scale for measuring attention aspects, namely the "Borden-Inphimov Test."

Tests Description:

Faul Shot Test (Refer to Figure 1).

Purpose of the test: Measuring the accuracy of free throw shooting.

Tools used: Basketball court, basketball hoop, basketball.

Test procedure: Each tester performs 10 free throws from behind the free throw line. They have the liberty to execute the free throws using any shooting technique. The throws are divided into two sets, each comprising 5 shots. Once the first set is complete, the subsequent tester starts, continuing until each completes their second set, totaling 10 throws.

Test conditions:

Testers can execute some throws before the test as a trial.

Each tester is entitled to perform only 10 throws.

Shots must be made from behind the free throw line.

Scoring:

One successful basket counts as one point, regardless of how it enters the basket.

If the ball doesn't enter the basket, it counts as zero.

The maximum score is 10 points, meaning only one successful free throw equals one point.

Note: This test is applicable to both genders.

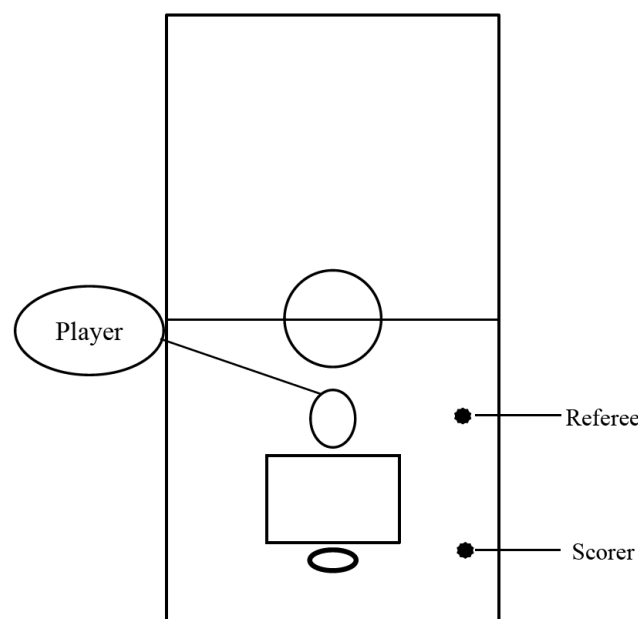


Figure 1.

Borden-Inmov Test

This test is a form containing (31) rows of Russian numbers, with each row consisting of (40) numbers, totaling (1240) numbers in the entire test. The numbers in each row are arranged in regulated sets, each comprising 3-5 differently distributed and ordered numbers to prevent memorization by the test-taker (refer to Appendix 1). For the purpose of calculating various attention aspects, it is essential to know the following:

The number of letters viewed by the player during the test (general size) = a

The number of sequences that should be crossed out on the test sheet = b

The total number of errors (excluding the incorrectly crossed-out sequences + number of sequences = B primed not crossed out)

The number of correct sequences that were crossed out = r

The accuracy and execution coefficient of the test = e

b – B

e = –

b

A. Attention Intensity (Test executed in one minute)

Performance Method:

The player is asked to flip the page and cross out the sequence (CB) rapidly, accurately, and without errors. Upon the signal (halt), they refrain from continuing, place a transparent strip at the stopping point, and then calculate the intensity of attention: $U = ax e$.

Attention Intensity = $ax e$. u is calculated using the previous method.

B. Attention Concentration

Performance Method:

It follows the same performance system as attention intensity. However, here, when the player crosses out, they receive a five-second light signal, totaling (12) light signals. In the current research, the player was asked to cross out the sequence (BC).

Calculation method for attention concentration:

Where UI is the attention intensity in one minute without using a light signal, and U2 is the attention intensity in one minute using the light signal. This means that the test is initially conducted without a light signal, then with the light signals, and the difference in performance is calculated.

C. Performance Distribution:

The performance specific to the attention intensity test, in addition to:

- Upon receiving the start signal and starting the stopwatch, the player begins the test and crosses out from the sequences (Cx, x3) simultaneously, using the same previous method, by placing a diagonal line from top left to right.
- Upon hearing the word "halt," the player places a vertical line at the last crossed-out point.
- Test duration is two minutes.
- Calculation method for attention distribution:

$$C = \frac{(U3 - U4) 100}{(U3 + U4)}$$

Where performance productivity is concerned with sequence (XB)

Performance productivity concerning sequence (CX)

Performance productivity = $U = a \times e$

As in Attention Intensity

D. Attention Transformation

- Two-minute selection time

- Performance method
- Upon signal, the player starts crossing out sequence (CX) for a duration of 30 seconds. Upon the signal "change," the player moves to cross out sequence (EC) for another 30 seconds. Upon hearing "change" again, the player returns to crossing out (CX) for another 30 seconds. Then, for the third time upon "change," the player crosses out (BC), and after that, the two minutes for calculating attention transformation end.

$$U = \frac{M + H + O}{3}$$

Where M equals the difference between the work productivity for the first 30 seconds (U1) and the second (U2):

$$M = U1 - U2$$

H equals the difference between the work productivity for the second (U2) and the third (U3):

$$H = U2 - U3$$

O equals the difference between the work productivity for the third (U3) and the fourth (U4):

$$O = U3 - U4$$

It is better for the researcher to mention the statistical methods used in the research. The work productivity is calculated in a 30-second period for each letter sequence (CX) and (BC) in a segment of segments using the equation. $U = axc$ as in Attention Intensity ()

Scientific Bases for the Tests Used in the Study:

Test Validity:

The researcher sought content validity to extract the validity of the test. The researcher presented the selected tests in the study to a group of specialized experts. The majority of experts agreed that these tests achieved the intended purpose, and thus, the researcher obtained the validity of the tests.

Test Reliability:

Reliability means that the test gives the same results when reapplied to the same individuals under the same conditions. Therefore, the researcher applied and reapplied the test after a specific period. The test was applied to a sample of six players outside the study's sample. Then, the test was repeated on the same sample after seven days. The researcher extracted the simple correlation coefficient (Pearson) between the test results, and the correlation values are shown in Table (1):

Test Objectivity:

Objectivity refers to the stability of the results compared to the subjective judgment of the examiner. If more than one examiner gives a grade for the same test, the results of the grading should be consistent.

For the tests used in the study to enjoy objectivity, the researcher presented these tests to a group of experts in testing, measurement, athletic training, and basketball. These experts agreed that these tests reflect the desired skill and mental aspects intended to be measured in this study. Conducting these tests independently of self-assessment serves the research and the study's interests.

Additionally, the researcher sought the assistance of two judges during the experimental tests. The judges recorded the test results, and the simple correlation coefficient (Pearson) between

the test results of the sample individuals on whom the tests were performed and recorded by the judges was calculated. The results indicated that these coefficients for all the tests were high, ranging between (89 - 95%), which suggests that the tests exhibit high objectivity, as illustrated in Table (1).

Table 1. Shows the values of the reliability and objectivity coefficients.

N.	Test	Reliability	Objectivity
1.	Accuracy of shooting	0.88	0.94
2.	Concentration of attention	0.89	0.90
3.	Distribution of attention	0.84	0.92
4.	Attention conversion	0.81	0.95
5.	Attention intensity	0.92	0.89

Exploratory Experimentation:

In order to obtain good results, the researcher conducted an exploratory experiment on a sample from the research community before conducting the main experiment. Consequently, the researcher conducted two exploratory experiments as follows:

First Exploratory Experiment:

The researcher conducted an initial exploratory experiment to conduct the test (free throw performance in basketball). This experiment involved (6) players from the same research community at 10 AM on Sunday, 11/12/2022, in the enclosed sports hall at the College of Physical Education and Sports Science at the University of Al-Qadisiyah. The purpose of this trial was to identify the errors and drawbacks that the researcher and the assisting team might encounter during the performance. It aimed to train the assisting team on how to conduct the mentioned test and also to understand the researcher's needs during the main experiment.

Second Exploratory Experiment:

Likewise, the researcher conducted a second exploratory experiment to perform the test related to aspects of attention. This experiment took place on the same individuals as the exploratory experiment on Monday, 12/12/2022, in the enclosed sports hall at the College of Physical Education and Sports Science at the University of Al-Qadisiyah. The test concerning aspects of attention used in the study was performed. The purpose of this exploratory experiment was the same as the previous one.

Main Experiment:

The researcher conducted the main field experiment during the period from (20/12/2022) to (25/12/2022). Within this period, skill and mental tests were carried out on the individual players in the research sample as follows:

1. Skill tests (accuracy of free throw shooting in basketball) were conducted for the individuals in the research sample on Tuesday, 20/12/2022, at 10 AM in the enclosed sports hall at the College.

2. Mental tests (measuring aspects of attention) for individuals in the research sample took place on Sunday, 25/12/2022, at 10 AM in the same enclosed sports hall at the College. Statistical analysis was then performed on the obtained results.

Statistical Methods:

The researcher utilized the statistical package (SPSS) to extract the following statistical methods:

- Mean
- Standard deviation
- Percentage
- Pearson's correlation coefficient

Chapter Three: Presentation, Analysis, and Discussion of Results:

Presentation of Results:

Presentation and analysis of the study's variable test results for the research sample individuals:

Table 2. Illustrates the mean and standard deviation of the study's variable results for the research sample individuals.

N.	Study Variables	Mean	Standard Deviation
1.	Free Throw Accuracy	6.222	1.48
2.	Attention Concentration	13.57	1.968
3.	Attention Distribution	8.56	1.48
4.	Attention Transformation	6.72	1.65
5.	Attention Intensity	7.55	1.43

The table (2) shows the mean of the Free Throw Accuracy test in basketball (under study) for the players from the research sample, which amounted to (6.222) with a standard deviation of (1.48). Additionally, it indicates the mean of the Attention Concentration test, which was (13.57) with a standard deviation of (1.968). Similarly, it presents the mean of the Attention Distribution test, which was (8.56) with a standard deviation of (1.48). It also illustrates the mean of the Attention Transformation test, which was (6.72) with a standard deviation of (1.65). Moreover, it displays the mean of the Attention Intensity test, which was (7.55) with a standard deviation of (1.43).

Display and analysis of the simple correlation results between the Free Throw Accuracy test and the Attention Aspects test for the players from the research sample.

Table (3) shows the values of the simple correlation coefficient between the Free Throw Accuracy test and the Attention Aspects test for the players from the research sample.

N.	Statistical Features Variables	Correlation Coefficient (R)	Significance Level	Sig.
1.	Accuracy			
2.	Attention Concentration	0.57339	0.008215	Significant
3.	Attention Distribution	0.53594	0.014863	Significant
4.	Attention Transformation	0.65073	0.00189	Significant
5.	Attention Intensity	0.78124	0.000	Significant

DISCUSSION OF RESULTS

From what has been presented in Table (3,2), it is evident that there is a significant relationship between the accuracy of free throw shooting in basketball for the individuals in the research sample and the test of attention aspects (under study) during the execution of the free throw performance. The researcher attributes this relationship to the fact that performing the free throw shooting test from the free throw line at a distance of (580 cm) requires the player to have a high level of attention concentration at that moment. This is in order to focus on the hoop and know the angle the player will aim the ball towards. Additionally, the researcher believes that a basketball player executing a free throw needs a very important element, which is attention distribution. This is because the player directing the free throw distributes their attention towards the goal at times and towards teammates and opponents on both sides of the free throw line and in the areas of ball possession on both sides. Therefore, this indicates the existence of a significant correlational relationship between these variables.

Regarding the aspects of attention transformation and attention intensity, the correlation results also showed a significant relationship. The researcher sees that these significant correlational relationships are logical and scientific. Precision in free throw shooting skill requires the player executing the free throw to shift their attention occasionally between their position and the sides of the goal to monitor the movements of competing players and their readiness to seize the ball after it rebounds off the backboard in case the ball does not enter the hoop. Moreover, the player needs to pay attention to their teammate during their follow-through to receive the ball after it rebounds from the hoop. Concerning the aspect of attention intensity, the significant correlational relationship between the variables also emerged. The researcher believes that it is essential for a basketball player to possess a high level of attention intensity to estimate the distance between their position behind the free throw line and the hoop. It is crucial for the player to have a high level of simultaneous attention intensity with attention concentration. This will help the player focus their attention while performing the shooting skill, allowing them to be highly prepared at that moment. This possibility reveals the player's potential in attempting to isolate all external influences and concentrate their attention at one point, which is precision in shooting. This aspect was affirmed in this context by Osama Kamel Ratab (1995), emphasizing the necessity for coaches to ensure their players are in a good state to guarantee the availability of the highest level of attention intensity in them.

Therefore, a player's performance in accurately shooting towards the goal does not solely depend on the technical aspect but also requires mental and psychological skills, especially attention concentration. This was confirmed by Zuhair Al-Khashab and others (1988), stating that one of the fundamental factors determining shooting accuracy is the player's ability to concentrate while shooting.

This illustrates Osama Kamel Ratab's view (1995), indicating that concentration is one of the fundamental general skills for athletes, as it forms the basis for the success of learning, training, or competing in its various forms.

Chapter Four: Conclusions and Recommendations

CONCLUSIONS

Based on the presentation and discussion of the research results, the researcher concludes the following:

1. The players in the research sample possess a good level of attention aspects.
2. There exists a significant correlational relationship between the attention aspects (under study) and the accuracy of free throw shooting in basketball for players in the research sample.

RECOMMENDATIONS

Based on the results obtained, the following recommendations have been formulated:

1. Emphasize the development and enhancement of attention aspects during training units for players.
2. It is essential for coaches to identify the characteristics and aspects of attention to distinguish between players.
3. Emphasize conducting periodic tests related to attention aspects at varying intervals to understand the level of development achieved by the players.
4. Necessitate conducting further research and studies on mental and psychological variables related to other sports.

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Appendix (1) Illustrates the names of the trainers who were interviewed

N.	Name	Affiliation
1.	Prof. Qasim Mohammed Abbas	University of Qadisiyah / College of Physical Education and Sports Sciences
2.	Prof. Riyadh Jumaa Hassan	University of Qadisiyah / College of Physical Education and Sports Sciences
3.	Assoc. Prof. Thamer Hussain Khatat	University of Qadisiyah / College of Physical Education and Sports Sciences