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Construction and Standardization of a Reliable Test to Measure Short Aerial Ball Shooting Accuracy in Football

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Abstract This research was conducted in order to build a scientific and reliable test for measuring the accuracy of shooting a short aerial ball in football; the aim of the study was to develop a scientific and reliable test for the construction and standardization of directly shooting a short aerial ball test in football. Design, methodology, approach: The research adopted a descriptive survey approach and the test was implemented with a random sample (96) of players representing some of clubs in the Anbar Governorate. The methodological steps involved testing scientific validity and the results showed high validity (content: 0.86; discriminant: 0.85), reliability (0.95; 0.96 objectivity), confirming it to be suitable for measurement properties. Normative levels were also established to classify player performance. Results showed that 70% of the sample negatively clustered at the average and acceptable levels, which is elaborated on as a need for more focused skill training in the discussion. The findings of this study, readily translated to practice for coaches in guiding training toward the identification of talent, and of scientific merit for researchers aiming to replicate and expand past studies in this area, suggest that this systematic approach can serve as a reliable and scientific evaluation tool.

Keywords Construction and Standardization, Test, Shooting, Players, Football

1. Introduction

A focus on science and data-driven analysis to improve physical performance and technical skills characterizes the current environment of football [1], [2]. In this framework, tests which are both valid and reliable are vital to the objective examination of physical and technical capacities of an athlete [3]. In order to ensure that performance evaluation is relevant and provides actionable data for coaches and players, these tests need to evolve and be standardized to better reflect in-game circumstances and demands [4]. A plethora of tests are actually available to quantify basic football skills but, as mentioned above there still is a shortage of tests that investigate highly specific skills. An example of this is shooting accuracy from short aerial balls, which is an important but under-researched skill unique from shooting from ground or long distances [5]. Being able to hit a ball cleanly out of the air, from as short a distance as possible, is crucial when capitalizing on dynamic scoring scenarios, whether it be a deflection to the feet or a cross that provides an opportunity to score, which will ultimately determine the football match. Even with this significance, there is not currently a standardized, reliable, and valid test for this specific skill.

1.1. Literature Review

Among all football actions, shooting can be considered the most important signal of shooting outcome because it is the final step of offensive action [6]. As a result, researchers have put in a great deal of work into examining the biomechanical variables that determine shot velocity and precision. Within these variables are intricate elements such as inter-segmental coupling, upper body movement, and ankle stiffness at the moment of ball contact [7], [8]. Utilizing this deep knowledge of mechanics, these injury prevention programs have been developed based on best evidence (i.e. core stability programs) [6] that have demonstrated improvements in neuromuscular function as well as kicking accuracy [8].

Along with biomechanical analyses, a plethora of field tests have been designed to objectively evaluate shooting performance. Only a small number of these current tests measure shooting variability, and even fewer give consideration to vertical shooting [9, 10], but the existing tests are still largely focused on either shot power or ground-oriented shooting precision at a proximal or predetermined distance [10]. In the example of the Loughborough Soccer Shooting Test (LSST), it provides a reliable measurement but the focus is on accuracy over a medium-to-long distance following receipt and control of a pass [11]. Other empirically-validated tests segment goals in a similar scoring fashion, or separate speed with radar, yet primarily focus on ground-ball at a goal [12] or fail to isolate aerial shooting abilities [12].

And here is where the gap in the literature is apparent. Shooting skill for short aerial balls (e.g., volleys and half-volleys due to crosses, deflections, or rebounds) is biomechanically different from ground-based shooting [13]. It requires great timing, complicated eye-foot coordination, and the cognitive-motor skill to redirect a ball that approaches from a continuously changing angle.

While there are dynamic situations that contribute to the high percentage of goals for professional levels [14] and match analysis data confirm that this is a large percentage of goals being scored within the penalty area [14], the scientific literature suffers from a lack of a standardized and sufficient measurement instrument capturing the specificity of this airborne skill [15].

Thereby, this study sought to fill this gap by developing and standardizing a theoretical-based test, grounded in basic science principles. Through developing this skill, the aim is that it will offer coaches and sports scientists a resource that cannot come fast enough, a valid tool to efficiently measure, assess and train on the fundamental aerial ball short shooting accuracy skill.

1.2. Problem Statement

Whether any player evaluation becomes successful or not would depend on the availability of the right kind of measures and tools which are objective in nature. Shooting is a fundamental skill in football, but a neglected one is validated and designed into short aerial ball shooting. Current tests are unable to appropriately replicate this dynamic, touching action in one motion environment, usually concentrating on ground, center or long distance power. The absence of an inherently accurate measure of this skill within these testing mechanisms, makes it difficult for coaches to truly measure and track a player's progress in this crucial area. This study attempts to provide a solution to this problem by developing and standardizing a test that allows reliable and valid assessment of short aerial ball shooting accuracy, an essential tool for assessment and development of players in an objective manner.

1.3. Research Objectives

This study aims to achieve the following things:

- Develop and validate a test for football players that can be used to assess and measure short aerial ball accuracy.
- To Perform Norms and Requisites in anime: The Accuracy of Short Aerial Ball Shoots Test

1.4. Significance of the Study

Our findings will have major consequences for the domains of coaching and sports science. However, at the same time the study will: Improve Player Evaluation: Provide coaches and scouts with an accurate and objective measure of an important skill that is not adequately measured by the current methods. Enhance Training Methods: Provide coaches with insight to develop precise training plans that can enhance players shooting on aerial balls. Help Establish a Significant Gap in the Literature: This study would provide a valid and reliable testing component that would aid the development of research on the biomechanics and pedagogy of this unique skill in sports science literature.

2. Materials and Methods

2.1. Study Design

The research employed a descriptive approach using a survey method, which is well-suited for constructing and standardizing a test to measure short aerial ball shooting accuracy. This methodology is effective for studying phenomena in their natural environments to describe them without manipulating variables [15], [16], [17].

2.2. Participants

The research population was selected to include football players from clubs in Anbar Governorate for the 2023-2024 season. This population comprises the following clubs: Anah Club, Heet Club, Al-Nasr Club, Al-Raid Club, Al-Habbaniya Club, Habbaniya Al-Sumoud Club, and Al-Fallujah Club, with a total number of 167 players. The research sample was randomly selected to ensure its representativeness of the study population and to minimize bias. The sample consisted of 96 players, representing 57.48% of the total research population. Goalkeepers and injured players were excluded from the sample to ensure the study focused on field players capable of performing the targeted skill. For the purpose of the study, the selected sample was divided into sub-groups as follows:

- Pilot Study Sample: Ten (10) players were randomly selected from Al-Habbaniya Club to conduct the pilot study. This experiment aimed to ensure the clarity of test instructions and procedures, determine the time required for execution, and identify any potential difficulties before the actual application.
- Construction Sample: Forty (40) players were randomly selected for this sample. Data from this group will be used in the initial stages of test construction, including determining its validity and reliability.
- Application (Standardization) Sample: Thirty (30) players were randomly selected for this sample. Data from this group will be used in the final stage of test standardization and the development of normative scores and levels for players. Table 1 shows the details of the distribution of the sample members to these groups.

Table 1. Details of the Distribution of the Sample Members Among These Groups

Subgroup	Number of players	Selection method
Pilot Study	10	Random
Test Construction	40	Random
Standardization	30	Random
Total	80	

Table 2 also shows the detailed distribution of the sample members according to clubs and their percentages. Figure 1 illustrates this division graphically.

Table 2. Research Population, Sample, and Percentages

Clubs	Total Sample	Excluded	Exploratory Sample	Construction Sample	Application Sample
Al-Nasr Club	24	4	—	10	10
Al-Raid Club	24	4	—	10	10
Habbaniya Club	24	4	10	10	—
Habbaniya Al-Sumoud Club	24	4	—	10	10
Total	96	16	10	40	30
Percentage	100%	16.66%	10.41%	41.66%	31.25%
Total number of participants	80				

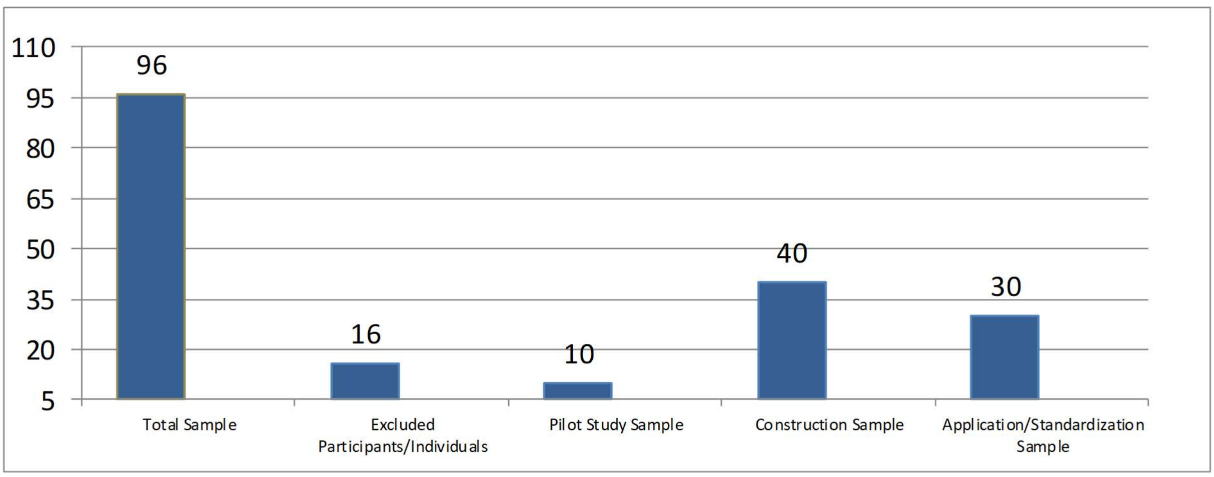

Figure 1. Division of the Research Sample

2.3. Tools and Data Collection Methods

To meet the study's objectives, the following equipment and methods were used to collect data:

- Equipment: A standard football field, 15 regulation footballs, a long measuring tape, durable adhesive tape for marking, and a whistle.
- Sources: A review of theoretical and previous studies on sports testing, psychometrics, and football skills.
- Test and Measurement: The primary method for collecting quantitative performance data on players.
- Observation: Direct observation was used to document qualitative aspects of performance, such as adherence to instructions and common errors.

2.4. Field Research Procedures

The field research procedures, therefore, followed several systematic steps in order to build a valid and reliable test.

2.4.1. Test Design Steps

For the initial draft of the test, the researcher conducted an extensive search of test and measurement literature pertinent to physical education and football. In order to examine the suitability of the test and its validity, it was presented to a panel of experts and specialists (as shown in Table 7 in the Appendix) by means of a questionnaire (see Appendix 1). The aim of this procedure was to collect their opinions and feedback for the proposed test. The test was rewritten and honed to ensure it was scientifically sound and met technical specifications of the game based on the insights and changes suggested by the experts.

2.4.2. Pilot Study

Once the test draft was finalized, the researcher, along with the support team, subsequently pilot-tested the draft on Sunday, May 12, 2024. The above study was applied to a sample of 10 players from Al-Habbaniya Club.

The objectives of the pilot study were:

- Verify Test Suitability: To validate that the test is suitable for the appropriate technical and physical level of the intended research sample.
- Assess Team Efficiency: To determine how efficiently and effectively the assisting team handles the registering of the test and its results.
- Establish Required Duration: To find out how much real time is needed to run the entire test you designed, allowing for better planning of future testing sessions.
- Tool Validity Check: The testing tools and equipment used in execution of the test need to be verified for the validity.

2.5. Test Procedure

We arrived at our designed test, "Short Aerial Ball Shooting Accuracy" which we developed to measure a player's shooting accuracy when performing a volley or half-volley. For the test, a shooting zone (2.5m wide x 2m deep) is placed 8.5m from the goal line.

A passer stays 2m outside the penalty area, the opposite way of the goal line. An airborne ball (high or semi-high) is delivered from the passer into the shooting area. With one touch, the player who is being tested has to shoot the ball to the goal. There will be 10 attempts given to each player (5 passes from the right side of the passer, 5 passes from the left side of the passer alternating).

Scoring: Tape is used to divide the goal into scoring areas.

- 3pts: When a shot goes in the top or bottom corners of the goal.
- 2: points: Given for shots that hit the upper middle or center region.
- 1: Scored for all other zones that are found within the goal including the crossbar and goalposts.
- 0: for shots off-frame of the goal.

Scores from all 10 attempts count towards the final score (maximum 30). Figure 2 shows the test design and proposed scoring areas.

2.6. Scientific Foundations of the Test

The test was validated, and its reliability and objectivity were also found through established statistical methods [18], [19].

- **Validity**

Content Validity: Content validity of the test was established by administering the test to a panel of experts in sports testing and training through a questionnaire. The feedback from these reviewers assured the test items were appropriate and complete [20]. As a result, 100% agreement of the test is reached by the experts.

Discriminant validity: To verify the ability of the test to discriminate between performance levels, an independent samples t-test was performed on scores of the construction sample (N=40) split into upper (n=20) and lower (n=20) groups. The t-value of 10.14 was very much greater than the tabled t-value of 2.05 ($p < 0.05$), demonstrating the high discriminatory power of this test [21], [22]. Self-Validity: This was computed as the square root of the reliability coefficient, which represents a theoretical level of stability of the test [23], [24].

- **Reliability**

To ascertain the reliability of the test, Split-Half method was used, which does not require a retest to measure internal consistency [25]. For the construction sample, the scores were split into odd and even halves, and a Pearson correlation coefficient was calculated. Overall reliabilities were subsequently adjusted with the Spearman-Brown Prophecy Formula [26]. The test yields a 95% reliability coefficient.

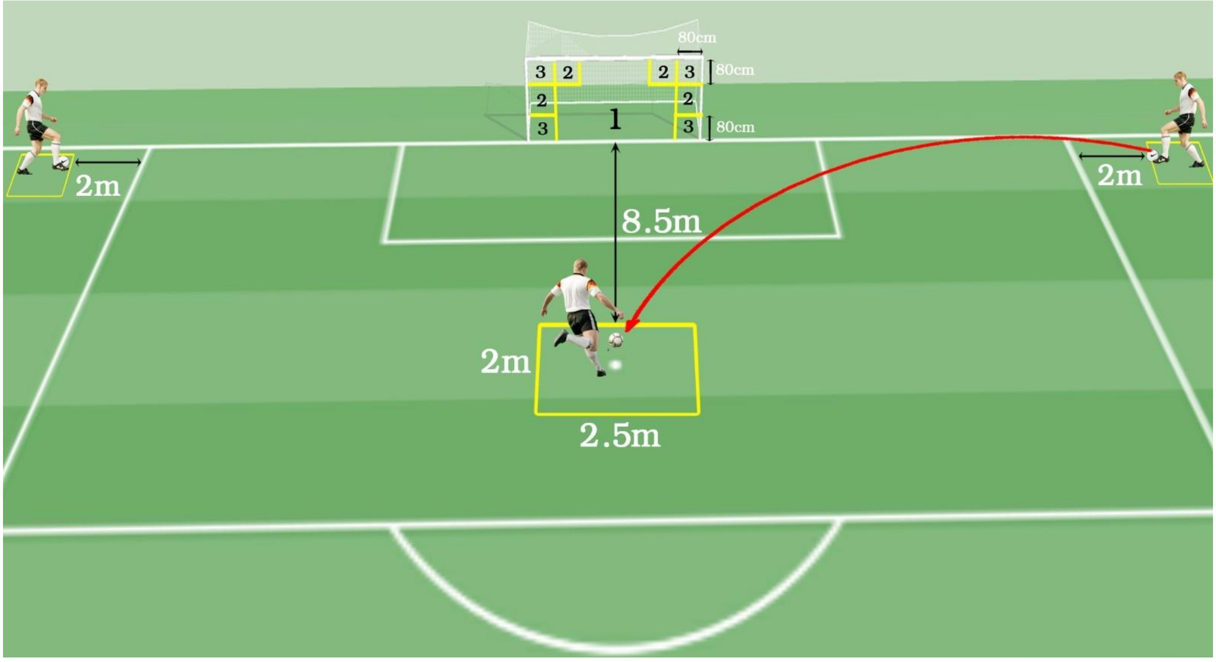

Figure 2. Short Aerial Ball Shooting Accuracy Test

- **Objectivity**

To examine the objectivity across the test, Spearman's Rank Correlation Coefficient between the scores given by two independent evaluators was calculated. A high correlation coefficient of 0.96 verified that there was a high level of agreement amongst the evaluators, meaning that the test is free from personal bias [27].

Table 3. Scientific Properties of the Test

Test Property	Coefficient	Source
Reliability (Overall)	0.95	Spearman-Brown Formula
Self-Validity	0.97	Reliability
Objectivity	0.96	Spearman's Correlation

2.7. Main Experiment

The final short aerial ball shooting accuracy test was performed from 2024-06-02 to 2024-06-04. The research sample was 30 players, and this test was valid and reliable when the required scientific foundations were satisfied (validity, reliability, and objectivity).

The App Test was rolled out to the destination clubs as follows.

- Sunday, June 2, 2024: Al-Raid Club.
- Monday, June 3, 2024: Al-Nasr Club.
- Tuesday, June 4, 2024: Habbaniya Al-Sumoud Club.

The experiment was carried out with help from the support team who had been previously trained to ensure uniform application protocols and documentation of data.

2.8. Statistical Methods

The following statistical methods were used for data analysis: Mean and standard deviation [28], Independent samples t-test [29], The Pearson and Spearman rank correlation coefficients [30],[31],[32], and Skewness coefficient. Z-score and T-score transformations [33].

3. Results

3.1. Initial Statistical Analysis

The raw data from the short aerial ball shooting accuracy test sit with a distribution that is sufficiently close to normal on initial analysis. The skewness coefficient of −0.74, which is within the acceptable range of ±1, indicates that the scores are relatively symmetrical on the left and right sides of the self-discrepancy score. This statistical regularity made it possible to convert raw scores into standardized scores, which in turn enables a more objective interpretation and player performance comparison. Table 4 presents the basic statistical measures of the scores of the standardization sample.

Table 4. Statistical Measures of Test Scores for the Standardization Sample.

Test Name	Unit of Measurement	Mean	Standard Deviation	Median	Skewness Coefficient
Near Aerial Ball Shooting Accuracy Test	Score	16.13	3.50	17	-0.74

Table 5. Conversion of Raw Scores to Standard Scores (Z-score and T-score)

Raw Score	Z-score	T-score
23	1.96	69.61
22	1.68	66.76
20	1.10	61.04
19	0.82	58.19
18	0.53	55.33
17	0.25	52.48
16	-0.04	49.62
15	-0.32	46.76
14	-0.61	43.91
13	-0.89	41.05
12	-1.18	38.19
11	-1.47	35.34
9	-2.04	29.63

3.2. Test Standardization and Normative Levels

Following functional checking of the type of score distribution, standard scores (Z-score and T-score) were applied to indicate clear performance levels. Usually rooted in the Gaussian (or bell-shaped) curve, this process is a commonplace statistical tool in sports science for classifying performance into tiers based on numbers of standard deviations above (or below) the mean. Similar to the previous example, the T-score is mean-centered (50) with a standard deviation of 10, meaning it is also simple to read in terms of how well a player did compared to the group average. Table 5 shows the conversion of raw scores to standard scores (Z-score and T-score). Figure 3 also shows the natural distribution curve (Josi) that is the basis of these standard levels.

3.3. Player Distribution across Normative Levels

The analysis indicates that while the ideal normal distribution would anticipate a better spread at the top and bottom of the performance domain, most players have mid-range short aerial shooting skills, suggesting that the aerial shooting skills of players in the analysis are more homogeneous. A surprising number of players fall under the "Average" (40%) and "Acceptable" (30%) levels. On the other hand, there are fewer players in the extremes ("Very Good" and "Very Weak"), showing a saturation of results around the average. Table 6 provides a detailed distribution of the number of players and their percentages within each of the standard levels.

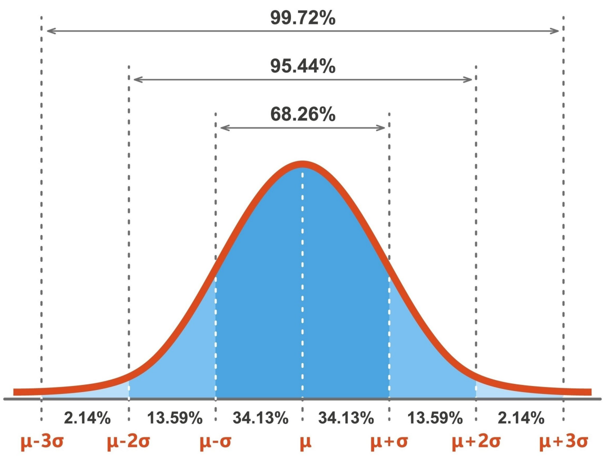

Figure 3. The Gaussian Curve (Normal Distribution) Illustrating the Normative Levels

Table 6. Distribution of Players Across Normative Performance Level

Normative Description	Raw Score Range	T-score Range	Sample Count	Sample Percentage
Very Excellent	24 and above	-	0	0.00%
Very Good	20-23	61.04 - 69.61	4	13.33%
Average	17-19	52.47 - 58.18	12	40.00%
Acceptable	13-16	41.05 - 49.61	9	30.00%
Weak	10-12	35.33 - 38.19	3	10.00%
Very Weak	9 and below	29.62	2	6.66%

4. Discussion

Aims: To develop and establish a test of validity and reliability for measuring short aerial ball shooting in football. Results of the study show that the test designed serves well as a scientifically valid measure of the phenomena in focus. This article will provide a contextual interpretation of the study findings in light of established psychometric principles, analyze the impact of the performance of the sample, and discuss the wider relevance of this research in terms of football science and practice.

4.1. Scientific Foundations of the Test

These findings validate that, unlike many other widely used tests, the actually developed test has a solid scientific basis, which is a critical bedrock for any legitimate and reliable measurement instrument in academia and sports [18].

Content Validity: The expert consensus about the content of the test (is the content relevant, representative, and authentic?). This approach, which is the basis for constructing tests, confirms that the items on the instrument represent the skills under interest the way football demands them [20]. This high consensus level among experts indicates that the general characterization of the test, including its phases and scoring criteria, corresponds with the particular technical demands of short aerial ball shooting [34].

Discriminant Validity: Discriminatory power with a statistically significant difference between mean scores of the upper and lower groups is a primary finding. It suggests the test is sufficiently sensitive to differentiate between different levels of proficiency in this skill among players [23]. It constitutes a very useful attribute for coaches and scouts as it offers a specific assessment tool to detect and classify players' capabilities, which helps players to be provided with specific training strategies and also helps in the talent selection processes [19].

Reliability & Objectivity: The coefficients for reliability and objectivity are high, confirming scientific adequacy for the test. High internal consistency or temporal stability, with a reliability coefficient of 0.95 (i.e. the test consistently measures the same construct, over time [25]. In the same way, the objectivity coefficient of 0.96 confirms the results of the test are independent from the evaluator's personal judgment and that the test's scores are reproducible and oblivious from bias [35]. Having high validity, reliability, and objectivity makes this test a reliable and valid measurement of football skills.

Interpretation of normative levels and sample performance

The distribution of the normative levels showed that most of the sample reached in fact within criteria" (50%). This result among the players, where many of the scores in the sample are clustering around a mean, indicates that this is a homogeneous level of skill in the cohort and less difference between high scorers and low scorers.

This result may be due to the multivariable characteristic of short aerial ball shooting. Such skill is more than just a physical act, but also involves highly developed measures of cognition, in particular, rapid open-loop decision making (when information from the opponent is unreliable) and fine-tuned spatial mechanisms under load [36]. Finishing from a variety of situations is indicative of the modern game and no longer manifests only in strikers, but it is a key element for any player in all positions [37]. The clustering of scores in the typical-range may suggest that a baseline ability exists at all competition levels, however certain aspects − cognitive and technical required for expert level are being left out from targeted training. This highlights the importance of specific training programs to enhance players from average to high in these relevant performance aspects [38], [39].

4.2. Implications and Future Directions

Construction and standardization of this test have important applied implications for coaching and the development of players. Coaches can now employ a proven tool that is specifically designed to:

Track Your Shots: Take your training to the next level by tracking your shots and understanding how well you shoot in a short aerial.

Inform Training Design: Highlight weak points and design specific drills to improve that skill.

Augment Talent Identification: Employ norm-based scores to consistently target talented-on-y intercept players.

Academically, the present research addresses a significant gap in the sports testing literature by establishing an instrument for a skill that previously had no measurement tools available with good validation. Future research should consider:

Extending measurement of the test to additional age groups and competitive levels in order to supplement normative data.

Interrelating test scores with real game performance statistics (e.g., percentage goal conversion from crosses or volleys) to evidence ecological validity.

Conducting pre- and post-intervention tests to assess the efficacy of specific training programs on improving short aerial ball shooting.

5. Conclusions

The following key conclusions have emerged as a result of examining prior research:

- The study successfully constructed and standardized a reliable and scientifically sound test for measuring short aerial ball shooting accuracy in football.
- The test has adequate scientific foundations, reflecting good content and discriminant validity; it is also highly reliable and objective, thus, a valid performance evaluation tool.
- The normative scores and levels established through the test prove its ability to systematically and objectively classify players based on their performance.
- The players sampled are generally average to fair to good at shooting at target places with short aerial balls, although very few show top performance levels.

According to the results, the study suggests that:

- Advice for Coach and Personal Trainer:
  - Utilize the developed test as a standard measure of futsal short aerial ball shooting skill in soccer players.
  - Individual Player Profiles — Strengths and weaknesses identified through the test's normative levels will allow the development of personalized and targeted training plans.
  - Create specific training targeting this skill, especially the cognitive and technical components related to decision-making and timing.
- Recommendations for Researchers:
  - Future research should implement the test across various ages and competitive levels to create a more comprehensive normative database.
  - Perform research linking test scores to real game performance to increase the ecological validity of the test.
  - Experimental studies to evaluate effectiveness of new training interventions, using the test as a pre-test and post-test measure.

Acknowledgements

We sincerely thank everyone who helped in any way and participated in the completion of this research. It only made it to this final type form with the biggest impact of your valuable efforts and continuous support. We are, therefore, proud of the outcome reached through your efforts, as it all was the result of joint work and expertise combination. We hope to collaborate more in the future.

Appendix

Appendix 1: Questionnaire for Expert and Specialist Opinions to Indicate the Validity of the Test

Professor..

Greetings,

The researcher is conducting his research, tagged "Building a reliable test to measure the accuracy of scoring short air balls in football".

Believing in your expertise and prestigious competence in this field, we are pleased to seek your kind opinion to support this research. The test has been designed in its initial form, and we kindly ask you to provide your scientific observations on the vocabulary and details of this initial design. Our goal is that the test is suitable for the nature of the target sample, is suitable for the specificity of this research, and achieves the desired purposes.

We also welcome any observations or amendments that you deem appropriate, necessary, and important, and that were not mentioned by the researcher.

I thank you very much for your precious time and effort.

Sincerely,

Researcher

Signature: ....

Name and surname: ....

Jurisdiction: ....

Date: ....

Test name: Short volleyball scoring accuracy test.

Purpose of the test: This test aims to measure the accuracy of players scoring for short volley/half-volley shooting accuracy in football.

Tools and equipment used: Carrying out the test requires the following tools and equipment:

- Standard football field.
- 10 legal footballs (size and weight suitable for the target age group).
- Resistant duct tape to divide the goal into scoring zones.
- Whistle to give start and end signals.

Performance: The tested player stands inside a specific scoring area, with dimensions (2.5 meters wide × 2 meters deep), located 8.5 meters from the goal line. Another player (passer) stands outside the penalty area, opposite the goal line, and at a distance of 2 meters from the penalty area. The passer sends an air ball (high or semi-high) to the tested player inside the scoring area. The tested player must score the ball towards the divided goal from just one touch (Volley or Half-Volley). A total of 10 balls are sent to each tested player: 5 balls from the right side of the passer and 5 balls from the left side of the passer, alternately. Figure 4 shows the details of the test area and goal divisions.

Test instructions:

To ensure uniformity of testing procedures and accuracy of results, the following instructions must be adhered to:

- The ball must be sent to the tested player in an aerial form (high or semi-high) to enable one-touch scoring.
- The tested player must score towards the goal with just one touch of the ball.
- Five balls are sent from the right side of the passer and five balls from the left side, for a total of ten attempts per player.
- If the passer misdelivers the ball to the tested player as required (such as sending a ground ball or out of the player's reach), the ball is re-attempted.

How to register (points calculation):

Points are scored for each scoring attempt based on the area where the ball rests inside the divided goal, according to the following criteria:

- 3 points: awarded when the ball hits the upper area (upper right or left corner) or bottom area (bottom right or left corner) of the goal.
- 2 points: awarded when the ball hits the upper area near the goalkeeper (upper central area), or the middle area of the goal (which includes the center of the goal).
- 1 Point: Awarded when the ball hits any of the other remaining divisions within the goal boundary.
- 1 Point: Awarded if the ball hits the goal's horizontal crossbar or one of the vertical posts.
- 0 points (zero): awarded if the ball goes completely outside the confines of the goal (above the crossbar or outside the posts).

A player's final score is calculated by adding up the points earned from the ten attempts. The highest score that the laboratory can get is 30 points (3 points × 10 attempts).

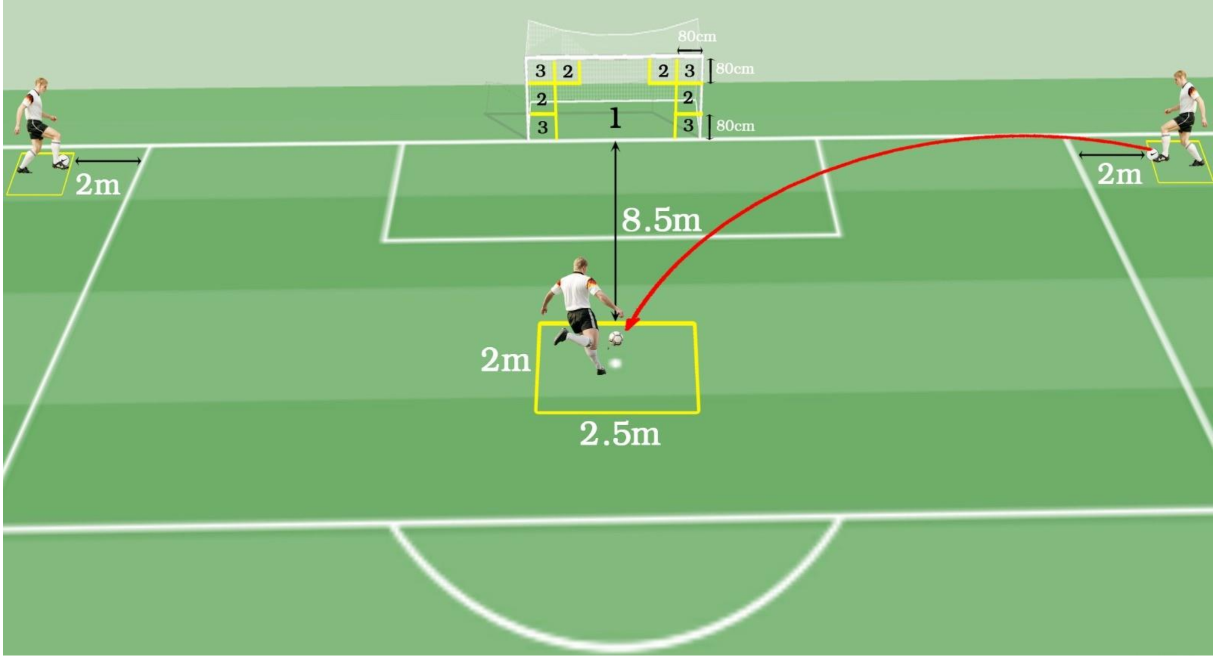

Figure 4. Short Aerial Ball Shooting Accuracy Test

Table 7. Experts and Specialists Consulted for Test Validity

t	Name	Jurisdiction	Workplace
1	Prof. Hussein Habib Musleh	Teaching Methods / Football	Al-Rasheed University College / Department of Physical Education and Sports Sciences
2	Prof. Dr. Abdel Moneim Ahmed Jassim	Testing & Measurement	Tikrit University / Faculty of Physical Education and Sports Sciences
3	Assoc. Prof. Amer Meshaal Faihan	Testing & Measurement	Ministry of Education / General Directorate of Education of Anbar
4	Assoc. Prof. Shaker Mahmoud Abdullah	Testing & Measurement	Anbar University / College of Physical Education and Sports Sciences
5	Assoc. Prof. Khalil Sattar Mohammed	Testing & Measurement	University of Baghdad / College of Physical Education and Sports Sciences
6	Assoc. Prof. Bassem Awad Ali	Testing & Measurement / Football	Anbar University / College of Physical Education and Sports Sciences
7	Assoc. Prof. Fouad Hammad Assal	Sports Training / Soccer	Anbar University / College of Physical Education and Sports Sciences

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