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Evaluation of Some Skill Tests in Football According to Construct Validity and Performance Analysis

Ali Sabah Noori  ✉ Aya Hashim Ashour  ✉² Ali Basu Jabir  ✉³ Abbas Zaki Abdul-Hussein  ✉⁴
University of Basra/ Department of Student Activities¹

Southern Technical University/College of Medical and Health Technologies²

Basra University of Oil and Gas / College of Industrial Management for Oil and Gas⁴

Basra University of Oil and Gas / College of Oil and Gas Engineering³

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Abstract

The study revealed challenges in accurately measuring students' performance due to the limitations of certain tests in achieving the intended objectives. A descriptive approach was adopted to study the suitability of the tests used. The study sample consisted of 84 first-year students from the College of Physical Education and Sports Science at the University of Basra, representing 39% of the targeted population. Tools such as personal interviews, content analysis, and standard tests were employed to gather and analyse the data. The key findings indicated statistically significant differences between surface-level assessments and performance evaluations, particularly in aspects related to accuracy and timing. This underscores the need to develop evaluation methodologies for more accurate and objective measurements. The study's main recommendation is to redesign skill tests to better align with educational and training objectives, taking into account the importance of accuracy and the timing of evaluations.



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1. Introduction and Importance of the Study

Tests are considered one of the core pillars in the field of physical education, serving as effective tools for evaluating individual performance and achieving educational goals. These tests are characterized by their ease of preparation, application, and correction, when compared to other evaluation methods. With rapid developments in various aspects of life, tests have undergone significant advancements to keep pace with modern changes and meet the needs of individuals and communities, contributing to the improvement of physical abilities, performance development, and the discovery of athletic talents (Al-Amir, 2019)

In the field of physical education, tests play a crucial role in achieving a balance between physical, psychological, and social aspects. To ensure the accuracy and effectiveness of these tests, they must exhibit validity, reliability, and objectivity. To achieve this, scientific devices have been incorporated in the design and execution of many physical and skill-based tests, whether through direct or indirect measurement. Research has shown that these devices contribute to improving the accuracy of results and minimizing errors, making them essential tools in the evaluation process (Salman & Issa, 2020)

The method of conducting tests is a key factor in ensuring the accuracy and reliability of results, as the interpretation of results and issuing judgments depend on the quality and precision of the test. Tests are the foundation upon which scientific evaluation is built, as the data extracted reflect the true image of the characteristics being measured, allowing for reliable generalizations and conclusions. However, any error in measurement can lead to inaccurate results, which in turn affect the entire educational process (Mashkooor & Othman, 2025)

In the context of football, skill tests are an important means of measuring technical aspects related to real-game situations. These tests focus on skill output and performance level, helping to determine the relative ranking of students and accurately assess their competencies. Studies have shown that proper planning and positive development can only be achieved through scientific evaluation based on objective tests and precise measurement (Shafik, 2023)

Despite technological advancements in measurement and evaluation tools, there is still a pressing need to reconsider the design of physical and skill tests, particularly in football. These tests significantly impact student evaluation and reflect on the educational process in physical education colleges. Therefore, the current research aims to highlight the importance of developing skill tests in

football and evaluating their effectiveness according to construct validity and performance criteria (Al-Assaf, 2022)

2. Study Relevance and Justification

The importance of this research lies in the use of skill tests, even though there is still a need to reconsider many physical and skill tests in general, and football skill tests in particular. These tests have a significant impact on the evaluation of students and their reflections on the educational process in physical education colleges.

1-3. Research Objectives:

1. To identify and study the significant differences between surface-level assessment and performance achievement in some football skill tests.

1-4 Hypotheses of the Study:

1. There are significant differences between surface-level assessment and performance achievement in some football skill tests.

1-5 Scope of the Research:

1-5-1 Human Scope: First-year students from the College of Physical Education and Sports Science, University of Basra.

1-5-2 Time Scope: The period from November 22, 2023, to March 7, 2024.

1-5-3 Spatial Scope: The field and classrooms at the College of Physical Education and Sports Science, University of Basra.

3. Methodology and Field Procedures:

3-1 Research Method:

The researcher adopted a descriptive survey method, as descriptive studies focus on "describing the current facts and phenomena, as well as interpreting these phenomena sufficiently" (Mohammed & Yass, 2023)

3-2 Research Population and Sample:

The study population consisted of first-year students from the College of Physical Education and Sports Science, University of Basra, for the academic year (2023-2024). The students were selected using a purposive sampling method, as football is part of the core curriculum for first-year students. The total population consisted of (217) students, and a random, non-systematic sample was selected from four academic divisions, comprising (84) students, which represents (39%) of the total population. The sample was selected in this way to ensure a diverse and comprehensive range of results, with a focus on achieving adequate representation of the target population, thereby enhancing

the reliability of the results and providing a deeper understanding of the impact of skill test design and its alignment with the established educational goals.

3–3 Data Collection Tools:

3–3–1 Personal Interviews:

A personal interview was conducted with a group of experts and specialists in the field of physical education sciences and football. The purpose was to determine certain scientific criteria for football tests, after the research objective was explained.

3–3–2 Content Analysis:

Content analysis is one of the distinguished research methods for providing quantitative and objective indicators regarding the intellectual orientations, values, and standards that certain entities aim to instill in a group or society through various communication means. The results showed that content analysis effectively contributes to providing quantitative and objective data that help in improving and developing practices in alignment with the intended educational goals (Odeh et al., 2024)

3–4 Measurements and Tests Used:

A set of commonly used skill tests in football were selected for the students at the College of Physical Education and Sports Science. These tests were tested as models for assessment according to scientific theories and principles suitable for the current study, as follows:

- **Football Rolling Test (10 cones/second).**
- **Rolling Test with the Ball Back and Forth Between (5 cones/second).**
- **Medium Pass Accuracy Test (football/score).**
- **Short Pass Accuracy Test (football/score).**
- **Ball Control Test for 30 seconds.**
- **Ball Control Test for 30 seconds.**

3–5 Specifications of the Test Items:

3–5–1 Football Rolling Test (10 cones/second):

The purpose of this test is to measure the ability to control and roll the ball. Ten cones are set at a height of (150) cm, with a distance of (2) meters between each cone, and the fifth and sixth cones deviate to the right and left from the fourth cone by (4) meters. The time taken to complete the forward and return runs is recorded, and the best time from two attempts is taken. (Duaa, 2024)

3–5–2 Rolling Test with the Ball Back and Forth Between (5 cones/second):

The aim of this test is to measure the ability to control and dribble the ball. The distance between the cones is (9) feet, and the distance between the first cone and the starting line is also (9) feet. The player's average total time is calculated from two attempts. (Hussein et al., 2018)

3-5-3 Medium Pass Accuracy Test (Football/Score):

The aim of this test is to measure the accuracy of medium passes towards three circles drawn on the ground, with diameters of (3-5-7) meters. Points are awarded as follows: (3) points for the largest circle, (2) points for the medium circle, and (1) point for the smallest circle. The test is conducted at a distance of (25) meters, and the best pass from two attempts is recorded. (Al-Fartousi & Al-Saadi, 2023)

3-5-4 Short Pass Accuracy Test (Football/Score):

The purpose of this test is to measure the accuracy of short passes. Two parallel lines are drawn, spaced (10) meters apart, and each line is (3) meters long. The player runs to receive the ball from the starting line and passes the ball towards a target area, continuing through (9) attempts. The grades awarded are (5-4-3-2-1), based on the side requested. (Abdul Wahid, 2022)

3-5-5 Shooting Accuracy Test (30 seconds):

The aim of this test is to measure shooting accuracy within a limited time. Four rectangular targets are drawn on a vertical wall at various distances, with dimensions as follows: the first rectangle (62) feet, the second (1204) feet, the third (186) feet, and the fourth (248) feet. A line is drawn on the ground (20) feet from the wall. When the signal is given, the player strikes the ball towards the wall to hit the smallest rectangle as many times as possible within (30) seconds, with two attempts per player. Points are awarded for each correct hit as follows: (4) points for hitting the first rectangle, (3) points for the second, (2) points for the third, and (1) point for the fourth. The ball can be struck with either foot in any manner. (Ayad, 2013)

3-5-6 Ball Control Test (30 seconds):

The purpose of this test is to measure the ability to control the ball in the air for (30) seconds. The player must maintain control of the ball without it touching the ground. One attempt is allowed, and a penalty is deducted for any instance where the ball touches the ground. (Kamel, 1991)

3-6 Pilot Study:

A pilot study is a small-scale version of the main study, and it should meet the conditions and circumstances similar to those of the main study whenever possible, so that its results can be considered valid. The pilot study was conducted on January 22, 2024, on a sample from the original research population consisting of (15) first-year students, aiming to:

- Confirm the validity of the tests.
- Understand the students' responses to performing the test contents.
- Ensure that the way the tests were formulated is clear and understandable to the students.
- Assess the effectiveness and suitability of the tools and devices used.
- Evaluate how the subject teachers presented exemplary performance to the students.

3–7 Final Application of the Tests:

The final application of the tests was conducted on first–year students. To obtain the desired results, the researcher followed these procedures:

- Grading was done based on the actual exams of the second semester.
- The standard grades for assessment were obtained from the subject teachers' tables.
- Three subject teachers attended the tests for evaluation purposes.
- All evaluators were instructed that the surface–level assessment of movement (skills) should be graded on a scale of (10).
- Students with exceptional skills, who represented clubs, were excluded from the sample.

3–8 Statistical Methods:

The researchers used the Statistical Package for Social Sciences (SPSS)

4. Presentation, Analysis, and Discussion of Results:

4–1 Presentation and Analysis of the Statistical Measures for the Research Sample's Tests:

Table (1) shows the arithmetic means and standard deviations for the research sample's tests.

Skill Tests	Arithmetic Mean	Standard Deviation
Football Rolling Test (10 cones/second)	22.742	2.231
Rolling Test with the Ball Back and Forth Between (5 cones/second)	12.802	1.123
Medium Pass Accuracy Test (football/score)	29.561	7.158
Short Pass Accuracy Test (football/score)	17.953	4.865
Ball Control Test for 30 seconds	63.783	12.163
Ball Control Test for 30 seconds (Repeated)	39.662	9.522

From Table (1), it is evident that the arithmetic means for the rolling tests were (22.732 and 12.804) seconds, with standard deviations of (2.231 and 1.123), respectively. Meanwhile, the arithmetic means for the accuracy tests were (29.551, 17.963, and 63.793) degrees, with standard deviations of (7.148, 4.875, and 12.173), respectively. The arithmetic mean for the ball control test (30 seconds) was (39.672) repetitions, with a standard deviation of (9.532).

4-2 Presentation and Analysis of the Mean Achievement Scores and the Surface-level Evaluation Scores for the Research Sample's Tests:

Table (2) Shows the mean achievement scores and the mean scores for surface-level evaluation by the evaluators.

Skill Tests	Mean Achievement Score (Performance Evaluation)	Mean Evaluators' Score (Surface-level Evaluation)	Calculated t-Value
Football Rolling Test (10 cones/second)	6.8	4.5	1.18
Rolling Test with the Ball Back and Forth Between (5 cones/second)	7.1	3.2	1.942
Medium Pass Accuracy Test (football/score)	5.5	3.4	1.712
Short Pass Accuracy Test (football/score)	6.5	2.5	2.013
Ball Control Test for 30 seconds	7.4	2.7	2.417
Ball Control Test for 30 seconds (Repeated)	5.66	2.9	1.775

The mean standard score for the rolling test between (5) cones was (7.01) seconds, while the mean evaluators' score was (3.02). The mean achievement scores for the accuracy tests were (5.5, 6.5, 7.4) degrees, while the evaluators' surface-level scores for the skill were (4.3, 5.2, 7.2) respectively. The mean achievement score for the ball control test (30 seconds) was (5.66) repetitions, and the evaluators' surface-level score for the skill was (2.09).

It was found that there were no statistically significant differences in the rolling test between (10) cones between the mean achievement scores and the surface-level evaluation scores, as the calculated t-value (1.18) was less than the tabulated t-value of (1.67) at a significance level of (0.05) and with (83) degrees of freedom. However, statistically significant differences were found between the mean achievement scores and the surface-level evaluation scores in all other tests, with the calculated t-values being (1.942, 1.712, 2.013, and 1.775), all of which were greater than the tabulated t-value.

4-2 Discussion of the Results:

Through the presentation and analysis of the results, it was found that there were no significant differences between the mean achievement scores and the surface-level evaluation scores for the skill of rolling between (10) cones. This indicates that the test is valid in measuring the rolling skill. This is due to the number of cones and the appropriate distances between them, along with the distribution of the cones in multiple directions, forcing the tester to utilize the skill to achieve a suitable score in the test. In other words, the test provides an accurate indication of the actual performance level of the

rolling skill. As Harmer (2021) pointed out, "assessment procedures related to maximum performance focus on estimating individual abilities, whether physical or mental, and depend on evaluating an individual's potential during actual performance when they exert their maximum effort using realistic motivational techniques."

However, based on the analysis, it was found that there were significant differences between the mean achievement scores and the surface-level evaluation scores for skills such as rolling the ball back and forth between (5) cones, medium pass accuracy, short pass accuracy, shooting accuracy (30 meters), and ball control (30 meters). This can be attributed to flaws in the way the test is conducted and formulated, which leads to errors in interpretation and understanding, thus allowing for mistakes during application. These tests measure the achievement the tester achieves, rather than the actual movement performance related to the achievement, especially in tests related to accuracy and timing. Therefore, it is observed that the tester tends to obtain the score independently of the skill, even though these tests are intended to assess movement performance under certain conditions. This suggests a flaw in the conditions of test standardization, which requires the coach or instructor to be cautious in ensuring the validity and objectivity of the test results. (Al-Hamadi & Al-Jasim, 2020)

"One of the most important factors affecting validity is identifying the nature of the attribute that the test will measure and determining the behavioral patterns falling under this attribute" (Al-Harbi, 2019). The result of the test is the basis upon which judgments are made; hence, errors should be identified as much as possible to ensure that the decisions reflect reality accurately. It is necessary to reconsider the design of skill tests in team sports in general and football in particular, and to examine the process of analyzing movement performance and studying the components of the test to achieve greater accuracy, striving for better results aimed at improvement and development. To make the test a tool that helps in acquiring knowledge, it is important for specialists to identify subtle errors and work to correct them, based on the established specifications of the test. Therefore, the principle of balance must be taken into account in physical and skill tests, which should combine measurements of both physical and skill attributes to determine the main goal of the test, as well as in composite tests that involve multiple skills. The results of such tests must be evaluated in terms of performance method (the skill) and the outcome (achievement) obtained from the test. Meanwhile, skill evaluation is conducted through direct observation, i.e., surface-level evaluation during the tester's performance, and is repeated based on the number of attempts allowed. The grade is given accordingly. As (Al-Otaibi, 2021) mentions, "visual observation is one of the most commonly used methods in movement

analysis, providing information about the sports technique, which leads to judgments and guidance for developing that technique."

The researcher also mentions that "to overcome this issue in such tests, estimation scales for evaluating the technical aspects of performance can be used, relying on experts and evaluators. These scores are then added to the final grade of the test, serving as an additional measurement tool." (Abdel-Rahman et al., 2022)

5– Conclusions and Recommendations

5–1 Conclusions:

1. There are significant differences between surface–level evaluation and achievement evaluation in tests related to accuracy and time.
2. There is no significant difference between surface–level evaluation and achievement evaluation in the rolling test between (10) cones.
3. There is a lack of differentiation when designing and standardizing skill tests between maximum performance tests (achievement) and distinguished performance tests (skill) in football.

5–2 Recommendations:

1. It is necessary to evaluate some skill tests in football, particularly those related to accuracy and time, based on both surface–level evaluation and achievement evaluation.
2. There should be a clear distinction between the goals of maximum performance tests (achievement) and distinguished performance tests (skill) and how to measure them when constructing the tests.
3. Specialists should ensure that the objectives of skill tests align with the skill characteristics they intend to measure when constructing the tests.
4. It is crucial to assess the test through both surface–level evaluation of performance and achievement evaluation to obtain the actual results of the test.

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Conflict of Interest

The authors declare that there is no conflict of interest.

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