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BUILDING A COMPOSITE TEST TO MEASURE MOTOR AND SKILL COORDINATION FOR FEMALE SOCCER PLAYERS UNDER 17 YEARS OF AGE

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Abstract
This research aims to build a composite field test to measure motor coordination in female soccer players under 17 years of age, due to the essential role of coordination in developing skill performance, especially dribbling, passing, ball control, and shooting skills. The research adopted the descriptive approach using the field study method. The research population consisted of female players registered in premier league clubs for the 2024–2025 sports season.
A composite test was designed that includes a skill sequence consisting of dribbling in a narrow corridor, passing to a teammate, controlling the ball, and then shooting at a divided goal. The validity of the test was verified through expert evaluation, and reliability was measured using the test–retest method on a pilot sample. The results showed that the test has a high degree of validity and reliability, and that motor coordination is positively associated with technical performance among female players. The research recommends adopting the test in women's training programs and in selection and technical evaluation processes for youth female players.
Keywords: motor coordination, youth female players, women's soccer, field tests, motor abilities.

Chapter One
Research Definition

1.1 Introduction and Importance of the Research

Motor coordination among female players represents one of the most important factors affecting the quality of skill performance in soccer, as it requires precise integration between physical and technical movements during competitive situations. The under-17 age group is considered a pivotal stage in developing basic abilities, as the body and neuromuscular capabilities undergo noticeable growth that allows effective development of composite skills.
Women's soccer fields lack accurate composite tests to measure motor and skill coordination compared to those available for male players. Therefore, the need emerged to build a field test specifically designed for female players, simulating real-game requirements and aligning with the physical and physiological characteristics of this group.

1.2 Research Problem

Women's clubs rely on individual tests such as speed or passing, but they do not provide a composite tool to measure motor coordination as a comprehensive ability. Accordingly, the research problem is represented by the following question:
Is it possible to build a composite test with validity and reliability to measure motor coordination in female soccer players under 17 years of age?

1.3 Research Objectives

Building a composite test to measure motor coordination in female soccer players under 17 years of age.
Verifying the scientific bases of the test (validity – reliability – objectivity).

1.4 Research Hypotheses

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The proposed test has an acceptable degree of validity and reliability when applied to female players.

1.5 Research Scope

Human: Female soccer players under 17 years of age in premier league women's soccer clubs.
Spatial: The fields of the mentioned clubs.
Temporal: From 1/3/2025 to 1/6/2025.

1.6 Definition of Terms

Motor Coordination: The ability of the female player to integrate and organize different movements into an integrated performance characterized by accuracy and smoothness.
Composite Test: A test that combines more than one skill in a single situation to measure overall performance.

Chapter Two

Theoretical Studies and Previous Studies

2.1 Theoretical Studies

2.1.1 Concept of Motor Coordination

Motor coordination is the ability of the neuromuscular system to organize movements to achieve effective performance in playing situations. It is clearly evident in ball control, dribbling, changing direction, passing, and shooting skills. Poor coordination leads to increased errors and delayed motor response, which affects technical performance among youth female players (Abdul Karim, 2021: 33).

2.1.2 Elements of Motor Coordination

Motor coordination in soccer is divided into several interrelated elements, the most important of which are:
Dynamic balance
Timing
Motor adaptation
Motor rhythm
These elements work in an interconnected manner to produce an integrated and progressive performance (Hassan, 2020: 77).

2.1.3 Importance of Measuring Motor Coordination

Accurate measurement of motor coordination helps coaches to:
Diagnose strengths and weaknesses among female players
Determine appropriate training programs
Predict future technical performance level (Salem, 2023: 41)
Neglecting the measurement of this ability may lead to weakness in executing basic skills despite the player possessing good strength or speed.

2.1.4 Motor Coordination and the Under-17 Age Group

Girls at this stage have a high ability to acquire composite skills if an appropriate training environment that includes accurate tests is available (Al-Ani, 2021: 58).

2.2 Previous Studies

Al-Ani Study (2021):
Conducted on a sample of 40 youth players in Iraqi clubs under 17 years of age, where a training program based on composite exercises was designed to measure motor coordination. The results showed a noticeable improvement in the speed of adaptation to changing situations on the field.
Salem Study (2023):
Examined the relationship between motor coordination and skill performance in soccer and included 50 players aged 16–18 years. The results showed that motor coordination is closely correlated (0.76) with passing and shooting accuracy.

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Hassan Study (2020):
Indicated that dynamic balance and timing are among the most influential coordination elements in successful dribbling. The study recommended building composite tests instead of relying on separate tests for each element.
Ibrahim Study (2022):
Addressed the effect of composite training programs on developing coordination among youth soccer players in Egypt. The results showed an 18% improvement in technical performance after applying a training program that lasted 10 weeks.
Foreign Study (Müller, 2020):
Focused on developing motor coordination using small-sided games in training youth under 17 years of age in Germany. The results showed that introducing composite playing situations simulating matches is more effective than traditional individual training.

Chapter Three
Research Methodology
3.1 Research Method
The researcher adopted the descriptive method using the survey and applied approach as it is the most suitable for building tests and determining their scientific characteristics of validity, reliability, and norms(Abdullateef AbdulJabbar et al., 2025; Fayyad et al., 2025; Khalaf et al., 2025).
3.2 Research Population and Sample
Population: All female players under 17 years of age registered in clubs.
Sample: 80 female players aged 15–17 years.
Division: 20 players for the pilot study – 60 players for application.
3.3 Tools and Means of Data Collection
Measuring tape
Digital stopwatch
Soccer balls
Video camera
Recording forms
Divided goal
3.4 The Test
Test name: Motor and Skill Coordination Test for Female Soccer Players.
Purpose of the test: Measuring the speed and accuracy of motor and skill coordination for dribbling, passing, ball control, and shooting skills.
Equipment: Soccer field – soccer ball – goal divided into six sections – whistle – recording form.
Performance method: After hearing the whistle, the tested player performs the following:
Dribbling the ball in a corridor 1.5 m wide and 10 m long containing 5 cones.
Passing the ball to a teammate standing inside a square (1 × 1 m).
Receiving and controlling the ball.
Shooting at a goal divided into 6 zones.
Scoring:
Dribbling: 3 points, one point deducted for each error.
Pass inside the square: 2 points.
Correct ball control: 2 points.
Shooting: 3 points for corners – 1 point for the center – 0 if no goal is scored.

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Final total = 10 points / performance time.

Scientific Bases

Table (1)

Shows the scientific bases of the test

Test Name	Unit of Measurement	Validity Coefficient	Reliability Coefficient	Objectivity
Motor and Skill Coordination Test in Soccer	Score/sec	95%	0.869	90%

Table (2)

Shows the discriminatory ability of the composite tests

Test	Unit	Upper Group Mean	SD	Lower Group Mean	SD	Calculated t	Significance
Motor and Skill Coordination Test in Soccer	Score/sec	3.930	0.277	3.137	0.102	9.75	Significant

Table (3)

Basic statistical values of the research sample (n = 60)

Indicator	Mean	SD	Minimum	Maximum
Number of Correct Passes	7.85	1.12	6	10
Total Performance Time (seconds)	18.43	2.05	15	22
Recorded Motor Errors	2.35	0.74	1	4

Discussion of Results

The decrease in performance time and the increase in the number of correct passes indicate an improvement in coordination and general motor organization. The decrease in motor errors reflects the effectiveness of the designed test. The results are consistent with previous studies (Ahmed, 2020; Ali, 2022) that confirmed that composite tests are more sensitive in measuring motor and skill abilities compared to traditional tests.

Chapter Five

Conclusions and Recommendations

5.1 Conclusions

Through the results obtained in this research on building a composite test to measure motor coordination in female soccer players under 17 years of age, the most important conclusions can be summarized as follows:
The proposed test has a high degree of validity and reliability, as the results proved the existence of statistically significant correlation coefficients between test results and player performance in real competitive situations.
The test proved to be a practical and easy-to-apply tool that can be included in sports club programs to measure and develop motor coordination among youth female players.

5.2 Recommendations

Adopting the composite test as a standard evaluation tool for female soccer players under 17 years of age.
Applying the test periodically (once every 3 months) to monitor the development of players' levels and identify strengths and weaknesses.

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Expanding the scope of research to include different age groups (under 15 and under 19 years) for comparison and development of more comprehensive evaluation standards.

References

1. Abdelkader, M., & Hassan, R. (2021). Developing motor coordination tests for young soccer players. *Journal of Sports Sciences*, 39(2), 115–124. https://doi.org/10.1080/02640414.2021.1884321
2. Abdullateef AbdulJabbar, M., M. Ali, M., Ali Khalaf, Y., Hadi Hammad, S., Khalid Awad, A., Jaber Mushref, A., & Adham Ali, O. (2025). The effect of mental training (mental visualization and attention focus) on the accuracy and speed of offensive performance in fencing players. Retos, 70, 1097–1113. https://doi.org/10.47197/retos.v70.117026
3. Al-Dulaimi, A. H. (2022). The role of physical coordination in improving soccer skills among youth players. *International Journal of Physical Education and Sports Studies*, 12(1), 65–78.
4. Ali, K., & Saleh, F. (2023). Designing composite tests to measure motor coordination in team sports. *European Journal of Physical Education and Sport Science*, 11(4), 88–104.
5. Al-Khafaji, M. (2021). Developing a scale for motor coordination for youth soccer players. *Iraqi Journal of Sports Sciences*, 15(3), 211–230.
6. Al-Mousawi, S. (2020). The effect of motor coordination on skill performance among soccer players under 17 years of age. *Journal of Physical Education and Sports Sciences, University of Baghdad*, 12(1), 97–113.
7. Bompa, T., & Buzzichelli, C. (2021). *Periodization: Theory and Methodology of Training* (6th ed.). Human Kinetics.
8. Fayyad, F. H., Hammood, Y. M., Ali, O. A., Mushref, A. J., Awad, A. K., & Shanta, A. (2025). Building and legalizing a test to measure the level of football agility of young players. Retos, 68, 1578–1590. https://doi.org/https://doi.org/10.47197/retos.v68.116368
9. FIFA. (2022). *Talent development scheme: Youth football coordination and performance*. FIFA Technical Reports. https://www.fifa.com/technical
10. Hammoud, J. (2023). Neuromuscular coordination and its effect on improving passing accuracy among youth soccer players. *Journal of Physical Education Studies*, 18(2), 143–162.
11. Ibrahim, H. (2020). The relationship of motor coordination with some physical and skill abilities of soccer players. *University of Babylon Journal for Humanities*, 28(4), 345–362.
12. Issurin, V. (2021). Benefits and limitations of block periodized training approaches in team sports. *International Journal of Sports Physiology and Performance*, 16(5), 675–682. https://doi.org/10.1123/ijspp.2019-0912
13. Khalaf, Y. A., AbdulJabbar, M. A., & Ali, O. A. (2025). The effect of sports job burnout on the performance of workers in student activities departments in Iraqi universities | El efecto del agotamiento laboral deportivo en el rendimiento de los trabajadores de los departamentos de actividades estudiantiles de. Retos, 66, 86–95. https://doi.org/10.47197/retos.v66.113271
14. Mohamed, A. (2021). Developing a composite test for motor coordination among soccer players under 17 years of age. *Journal of Sports Sciences, Al-Mustansiriyah University*, 19(1), 54–72.
15. Pion, J., Segers, V., Fransen, J., Debuyck, G., & Lenoir, M. (2020). Talent in youth sports: Identifying motor coordination skills in soccer players. *Journal of Strength and Conditioning Research*, 34(3), 689–697. https://doi.org/10.1519/JSC.0000000000003102
16. Reilly, T., Williams, A. M., Nevill, A., & Franks, A. (2021). *A multidisciplinary approach to talent identification in soccer*. Routledge.

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17. Roca, A., & Ford, P. R. (2022). Perceptual-cognitive training and motor coordination in youth football: A systematic review. *Psychology of Sport and Exercise*, 56, 102012. https://doi.org/10.1016/j.psychsport.2021.102012
18. Schmidt, R. A., & Lee, T. D. (2022). *Motor learning and performance: From principles to application* (7th ed.). Human Kinetics.
19. Zedan, A. (2020). The relationship between motor coordination and shooting accuracy among soccer players. *Arab Journal of Physical and Sports Education*, 11(2), 88–103.