



Information Article

Motor Imagery Accuracy and Its Correlative Influence on Penalty Kick Kinematic Precision in First-Year Physical Education Students at Bilad Al-Rafidain University

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ARTICLE INFO ABSTRACT

Keywords:

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This study aims to evaluate the level of mental imagery among first-year undergraduates at the College of Physical Education and Sports Sciences, Bilad Al-Rafidain University, assess penalty kick scoring accuracy among the sampled participants, and examine the correlational relationship between mental imagery modalities and penalty kick accuracy. Hence, the significance of this investigation lies in exploring how cognitive imagery influences execution precision in this cohort.

The researcher employed a descriptive correlational approach suited to the research problem. The target population comprised first-year students at the College of Physical Education and Sports Sciences, Bilad Al-Rafidain University, for the academic year (2024/2025), distributed across four academic sections (N = 186). The sample was randomly selected via the lottery method from Section (A), which initially included (42) students; after excluding repeating, deferred, and active collegiate athlete students, the final sample size comprised (n = 35) students.

The primary findings demonstrated the substantial role of visual imagery in enhancing penalty kick accuracy in football, alongside a high positive correlation between auditory imagery and scoring precision. Conversely, elevated emotional arousal during skill execution was associated with decreased shooting accuracy. The study recommends integrating structured mental practice into football training curricula, conducting specialized coaching clinics on psychological preparation and mental skills training, and educating coaches on the practical implementation of multimodal imagery to optimize motor performance in football.

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1. Introduction

Football (soccer) is considered one of the most widespread team sports in the world, occupying a prominent position in athletic arenas due to its broad physical, psychological, and social effects on players, in addition to serving as a recreational and cultural medium for spectators. The rapid development witnessed in football at both the global and local levels has influenced all facets of athletic performance. Skill accuracy and execution quality have become fundamental prerequisites for achieving victory, particularly as contemporary athletic competition is no longer confined solely to physical aspects, but also encompasses mental and psychological capacities that actively contribute to improving skill performance. Among the fundamental skills in football, the penalty kick stands out as a decisive situation that may determine the outcome of a match, as winning or losing hinges upon it during critical moments, making it a focal point of interest for researchers and coaches alike.

A player's success in executing penalty kicks accurately depends on a complex interaction among several physical, technical, psychological, and mental factors. Prominent among these factors is mental imagery, which represents one of the modern cognitive approaches in sports psychology. Mental imagery refers to the player's ability to evoke a precise mental image of the motor performance prior to its execution, allowing for mental practice of the skill without physical execution. This assists in enhancing self-confidence, regulating emotions, and stabilizing correct responses in competitive situations. Numerous studies have demonstrated that players possessing high mental imagery capabilities exhibit superior performance levels, particularly under high-pressure conditions such as penalty kicks. This presents researchers with a scientific challenge to uncover the nature of the relationship between mental imagery and shooting accuracy, and to determine how this relationship can be utilized to better prepare players.

In light of the above, there is an evident need to investigate this phenomenon empirically in a specific cohort of players: first-year students at the College of Physical Education and Sports Sciences – Bilad Al-Rafidain University. These students are at the beginning of their academic and athletic pathways and are in critical need of developing their cognitive and mental capacities in parallel with physical and technical training. The university formative stage is not limited to academic and theoretical preparation; it extends to refining physical and mental skills to qualify students as future players, coaches, and researchers capable of meeting athletic challenges. Emphasizing mental imagery at this early stage contributes to building a solid foundation for motor performance and equips students with practical experiences that enhance shooting accuracy in penalty kicks. Hence, this research derives its significance from investigating the relationship between mental imagery and shooting accuracy in this cohort, in an attempt to provide a scientific contribution that may aid in developing training and instructional programs in colleges of physical education and sports sciences.

Research Problem

The research problem lies in the fact that executing penalty kicks in football represents a decisive scenario requiring high levels of accuracy, concentration, and emotional control, given the psychological pressure involved that may adversely affect the quality of a player's skill execution. Despite the growing attention given to physical and technical aspects in the systematic instructional curricula applied to students in





colleges of physical education and sports sciences, mental and cognitive dimensions—specifically the skill of mental imagery—still receive limited attention relative to their importance in advancing skill performance.

Mental imagery is an effective instructional and training method that contributes to enhancing motor performance through heightened concentration and the regulation of emotional responses. Nevertheless, the utilization of this method within the university educational environment remains limited and unstructured relative to scientific advancements in this domain.

Through the researcher's observation of first-year students' performance levels during penalty kick execution, the researcher sought to attribute this variance to cognitive abilities that exert an effective influence on penalty kick execution, particularly mental imagery, and to examine the relationship between mental imagery and penalty kick performance among first-year students in the College of Physical Education and Sports Sciences at Bilad Al-Rafidain University.

Research Objectives

- To identify the level of mental imagery among first-year students in the College of Physical Education and Sports Sciences at Bilad Al-Rafidain University.
- To identify the accuracy of penalty kick shooting in football among the research sample participants.
- To determine the correlation between mental imagery and penalty kick shooting accuracy among the research sample participants.

Research Hypotheses

- There is a statistically significant correlation between mental imagery and penalty kick performance among the research sample.

Research Scope

- **Human Domain:** A sample of 35 first-year male students from the College of Physical Education and Sports Sciences at University of Diyala who are registered players in provincial sports clubs.
- **Temporal Domain:** From February 1, 2025, to February 25, 2025.
- **Spatial Domain:** The football stadium of the College of Physical Education and Sports Sciences at Bilad Al-Rafidain University.

2. Research Methodology and Field Procedures

2.1 Research Method

The researcher employed the descriptive method with a correlational design, as it is the most appropriate approach for addressing the research problem.

2.2 Population and Sample

The research population comprised first-year male students at the College of Physical Education and Sports Sciences / Bilad Al-Rafidain University for the 2024/2025 academic year, distributed across four sections, totaling 186 male students. The research sample was selected purposively via lottery, consisting entirely of players active in various provincial sports clubs (N = 42 students, representing 22.6% of the population). After excluding non-football practicing students, the final research sample consisted of 35 students (representing 18.9% of the population).

2.3 Instruments, Tools, and Data Collection Methods

- Arabic and foreign literature and references
- The Internet
- Testing and measurement





- Systematic observation
- Mental Imagery Scale
- Nikon D5100 photographic camera
- Sony video camera
- HP laptop computer
- Standard regulation football pitch
- Regulation footballs
- Stopwatch
- FOX whistle
- Standard regulation goalposts

2.4 Field Procedures

2.4.1 Mental Imagery Scale

The researcher utilized the Sport Imagery Questionnaire standardized by Martens (1992) and adapted into Arabic by Rateb (2000b, pp. 131–133), which has been implemented under this designation in numerous Arab and Iraqi studies. The scale comprises four athletic situations:

1. Individual practice
2. Observing a teammate
3. Playing with others
4. Performance in competition

Responses to each situation are measured across four dimensions:

- Visual imagery
- Auditory imagery
- Kinesthetic sensation
- Accompanying emotional state

2.4.2 Expert Validity (Face Validity) of the Scale

The researcher submitted the scale and its items to a panel of 15 experts in sports psychology and measurement and evaluation to ascertain its validity for measuring the investigated phenomenon and to evaluate the appropriateness of each item relative to its designated dimension. Items that obtained consensus among the 15 experts were retained, utilizing the chi-square (X^2) test, while non-agreed-upon items were removed, thereby establishing content validity.

"The term face validity is used to indicate the extent to which a test appears to measure what it is designed to measure; that is, the test includes items that appear relevant to the measured variable and its content aligns with its purpose. It is also termed 'surface validity' because it reflects the general appearance of the test. This validity is calculated following evaluation by specialists and experts in the field. When experts confirm that the test measures the behavior it was designed to assess, the researcher can rely on expert judgment." (Al-Fartosi et al., 2015, p. 201)

2.4.3 Reliability Estimation Using Cronbach's Alpha

Cronbach (Cronbach, L. J.) presented a general formula applicable to cases where responses to an item (statement or question) are multiple-choice (Radwan, 2006, p. 138). This type of reliability is among the most common and appropriate coefficients for graded rating scales.

"It refers to a method summarizing the study of homogeneity or consistency across examinees' responses on all constituent items of the test, known as internal consistency (inter-item consistency)." (Mikhael, 2014, p. 217)





Accordingly, the researcher applied this method by calculating Cronbach's alpha equation on a standardization sample of 100 first-class referees using the Statistical Package for the Social Sciences (SPSS). The statistical analysis yielded a Cronbach's alpha coefficient of 0.88, indicating high reliability and an excellent, dependable value in physical education research.

2.4.4 Shooting Accuracy Test (Al-Khashab, 1999, pp. 214–215)

- **Test Objective:** Measuring the accuracy of penalty kick shooting.
- **Required Equipment:** Football pitch, 10 footballs, tape to designate the target scoring area, and measuring tape.
- **Test Procedures:** Ten balls are set up near the penalty spot. The first kick is taken from the penalty mark, after which an assistant player prepares the subsequent ball at the same spot. The player shoots toward the target boxes placed on the inner sides of the goal, numbered from 1 to 3. The test begins with ball 1 and concludes with ball 10. A trial is considered invalid if it fails to hit any of the four target sectors on either side.
- **Scoring Method:** Successful shots entering or contacting the edges of the four designated target zones on either side of the goal are recorded, regardless of the foot used. Scores for each of the 10 balls are allocated as follows:
 - 3 points when scoring in Sector 3.
 - 2 points when scoring in Sector 2.
 - 1 point when scoring in Sector 1.
 - 0 points when shooting into any other area of the goal, as illustrated in Figure 1.

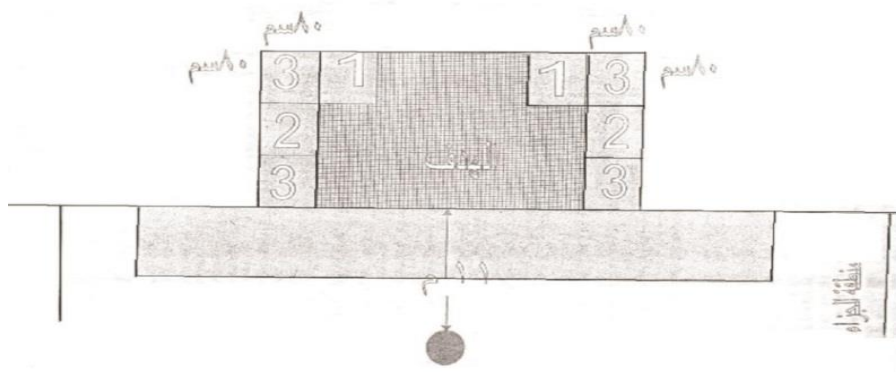


Figure 1. Schematic of the Shooting Accuracy Test

2.5 Pilot Study

The pilot study was conducted on February 18, 2025, on a sample of 10 students from the College of Physical Education and Sports Sciences / Al-Rafidain University who were not included in the main experiment but belonged to the same parent population. The objectives of the pilot study were:

- Determining the time required to complete the questionnaire.
- Assessing sample interaction and responsiveness to the instrument.
- Minimizing procedural obstacles that might arise during the main experiment.

2.6 Main Experiment

The main experiment was initiated on February 25, 2025, on the research sample during their gathering for the university football championship (Al-Rafidain University), at a rate of 10 players per team per day. The Mental Imagery Scale was



administered to the participants, followed by the execution of the penalty kick shooting accuracy test.

2.7 Statistical Methods

The researcher utilized the Statistical Package for the Social Sciences (SPSS) to process the raw data collected from the sample.

3. Results, Analysis, and Discussion

3.1 Descriptive Statistics for the Study Variables

Table 1 displays the arithmetic means and standard deviations of the research sample across the investigated variables.

Table 1. Arithmetic Means and Standard Deviations of the Research Variables

No.	Variables	Mean	Standard Deviation
1	Shooting Accuracy	26.21	1.348
2	Visual Imagery	16.38	1.928
3	Auditory Imagery	14.67	1.678
4	Kinesthetic Sensation	15.31	1.283
5	Accompanying Emotional State	13.28	1.378

3.2 Results, Analysis, and Discussion of Mental Imagery Dimensions and Their Relationship with Shooting Accuracy

3.2.1 Relationship Between Visual Imagery and Shooting Accuracy

Table 2 displays the Pearson product-moment correlation coefficient between visual imagery and shooting accuracy.

Table 2. Correlation Analysis Between Visual Imagery and Shooting Accuracy

No.	Variables	Visual Imagery	Shooting Accuracy
1	Mean	16.38	26.21
2	Standard Deviation	1.928	1.348
Calculated <i>r</i> -value		0.769	

Table 2 reveals the calculated simple correlation coefficient, indicating a relationship between this aspect of attention and shooting accuracy, which demonstrates a high positive correlation between visual imagery and shooting accuracy. The researcher attributes this to the fact that visual imagery enables the detection of negative aspects within the motor image formulated in the brain as a motor program, thereby allowing their remediation through repetition and error correction, reflecting players' daily skill training practices. This aligns with Atiyah (2005):

"Visual imagery is connected to various bodily sensations, particularly the visual sense and its capacity to transmit visual stimuli to the brain, identify the primary stimulus, perform veridical processing of this stimulus, and select the appropriate response." (Atiyah, 2005, p. 130)

The high positive relationship between mental imagery and penalty kick shooting accuracy can also be explained through the critical role played by selective attention and attentional focus regulation during stressful competitive situations. A player possessing advanced mental imagery skills is better equipped to simulate the actual conditions of executing a penalty kick, thereby mitigating the impact of external stressors, such as crowd noise or the gravity of the situation, and facilitating more efficient retrieval of the motor program stored in the brain. Contemporary literature in sports psychology indicates that integrating physical training with mental imagery enhances motor control mechanisms and optimizes neuromuscular responses associated with motor precision (Guillot & Collet, 2020).

Furthermore, mental imagery facilitates the construction of cognitive strategies that enable the player to regulate behaviors during execution, such as selecting the



shooting angle, anticipating goalkeeper movement, and calibrating the temporal rhythm of the kick. Recent empirical findings confirm that mental imagery training not only improves accuracy but also elevates self-confidence levels and accelerates decision-making processes under pressure (Cumming & Williams, 2022). This affirms that mental imagery serves as an effective tool that coaches and players can systematically incorporate within daily training sessions to boost performance accuracy in penalty kicks, while serving as a continuous means for error reduction and technical skill refinement.

3.2.2 Relationship Between Auditory Imagery and Shooting Accuracy

Table 3 displays the Pearson product-moment correlation coefficient between auditory imagery and shooting accuracy.

Table 3. Correlation Analysis Between Auditory Imagery and Shooting Accuracy

No.	Variables	Auditory Imagery	Shooting Accuracy
1	Mean	14.67	26.21
2	Standard Deviation	1.678	1.348
Calculated <i>r</i> -value		0.928	

Table 3 indicates that the calculated correlation coefficient (*r*) reached 0.928, which is higher than the critical (tabular) *r*-value at the 0.05 significance level. This clearly indicates a high positive relationship between auditory imagery and shooting accuracy. This finding is attributed to the integration of hearing and vision, which contributes to forming a clearer and more comprehensive mental image of the targeted motor performance, thereby aiding the construction of multi-dimensional motor programs adaptable to surrounding environmental variables. Auditory input received by the player—whether verbal cues or descriptive feedback—is translated in the brain into cognitive representations that support the learning process and enhance skill execution efficiency. The brain relies on both visual and auditory inputs to process stimuli, converting auditory information into internal signals that enhance motor image formation and operational efficacy.

Recent literature supports this orientation, demonstrating that auditory imagery complements visual imagery in accelerating motor learning through the reinforcement of shared audiovisual memory, thereby enhancing stimulus processing efficiency and appropriate response selection (Callow et al., 2022). Additional findings indicate that utilizing auditory imagery with athletes improves decision-making precision and accelerates motor response speed, particularly in situations demanding high accuracy such as penalty kick execution (Williams et al., 2021). Consequently, embedding auditory imagery into training regimens not only improves performance but also provides an effective mechanism for mitigating motor errors and consolidating correct movement patterns.

Shaanan and Al-Rubayee (2023, p. 356) state that positive cognitive flexibility, as a multidimensional construct and a core positive dimension of psychological health, enables athletes to cope with stressful conditions, which positively reflects on their mental imagery and contributes to developing their skill and mental capacities (Al-Rubayee & Shaalan, 2023, p. 388).

3.2.3 Relationship Between Kinesthetic Sensation and Shooting Accuracy

Table 4 displays the Pearson product-moment correlation coefficient between kinesthetic sensation and shooting accuracy.



**Table 4. Correlation Analysis Between Kinesthetic Sensation and Shooting Accuracy**

No.	Variables	Kinesthetic Sensation	Shooting Accuracy
1	Mean	15.31	26.21
2	Standard Deviation	1.283	1.348
Calculated <i>r</i> -value		0.873	

Table 4 shows that the calculated correlation coefficient (*r*) reached 0.873, exceeding the tabular *r*-value at the 0.05 significance level. This indicates a high positive relationship between kinesthetic sensation and penalty kick shooting accuracy. This is attributed to the fundamental role neuromuscular coordination plays in achieving high precision when directing motor responses; synergy between the nervous and muscular systems constitutes the cornerstone for the success of any motor skill, whether discrete or complex. This concurs with Mayouf (1987), who noted that kinesthetic sensations represent an essential element of coordination during activity execution, particularly in skills requiring fine differentiation between movement phases, as corroborated by Hantoosh (1982, p. 77).

This result confirms that kinesthetic sensation reinforces sensory feedback mechanisms, providing the athlete with immediate information regarding performance quality, which aids in error correction and optimizing the movement trajectory. Contemporary literature substantiates this finding: research indicates that kinesthetic sensation is a central component of fine motor abilities, and its development is linked to improved neuromuscular coordination and increased response accuracy in competitive situations (Sigrist et al., 2021). Furthermore, this capacity can be leveraged to cope with internal and external situational demands, characterized by high self-regulation and environmental adaptation (Al-Zubaidy & Ibrahim, 2025, p. 430). Other studies have shown that refining kinesthetic sensation through structured training enhances movement pattern efficiency and performance stability under pressure, positively impacting football shooting accuracy (Han et al., 2020).

Accordingly, the close relationship between kinesthetic sensation and shooting accuracy serves as an important indicator of the necessity of incorporating kinesthetic differentiation and neuromuscular coordination drills within training programs to ensure enhanced skill performance and elevated competitive outcomes.

3.2.4 Relationship Between Emotional State and Shooting Accuracy

Table 5 displays the Pearson product-moment correlation coefficient between the accompanying emotional state and shooting accuracy.

Table 5. Correlation Analysis Between Emotional State and Shooting Accuracy

No.	Variables	Emotional State	Shooting Accuracy
1	Mean	13.28	26.21
2	Standard Deviation	1.378	1.348
Calculated <i>r</i> -value		0.937	

Table 5 reveals that the calculated *r*-value was 0.937, which is greater than the critical tabular *r*-value at the 0.05 level of significance. This indicates a high negative relationship between the accompanying emotional state and shooting accuracy. The researcher attributes this finding to the premise that lower central nervous system arousal corresponds with greater motor control and heightened precision, thereby enabling the sample participants to control and isolate their emotions, as thought influences mood and mood generates behavior. Research confirms that athletes characterized by psychological stability possess the ability to regulate their behavior



during situations characterized by intense emotional arousal, typically evident during failure, defeat, fatigue, or highly demanding obstacles.

An athlete's psychological skills constitute an active element in developing a balanced athletic personality and serve as a crucial factor in effective adaptation within the sporting environment. Higher psychological endurance enables the athlete to maintain positive behavioral regulation and effectively manage competitive pressures during play (Ezzat, 2025, p. 506).

4. Conclusions

Based on the presentation and discussion of the results, the researcher reached the following conclusions:

- Visual imagery plays a vital role in increasing shooting accuracy in football.
- Auditory imagery exhibits a high correlation with enhanced shooting accuracy.
- Higher levels of emotional arousal accompanying skill execution lead to a decrease in shooting accuracy.
- Greater emphasis should be placed on mental training when designing training curricula for football teams.
- Training courses in psychological preparation and psychological skills training should be organized for football coaches.
- It is essential to emphasize mental imagery, communicate its importance to coaches, and provide comprehensive instruction regarding the utilization of mental imagery in executing football skills.

References

- Abdulridha, S. S., & Shaalan, A. K. (2023). Mental health and its relationship to the accuracy of decision-making for referees in the Premier League in handball. *Sport culture*, 14(2).
- Al-Fartousi, A. S., Al-Husseini, S., & Al-Kuraizi, A. (2015). Measurement and evaluation in the sports field. Al-Muhaimin Press.
- Al-Khashab, Z., et al. (1999). Football (Soccer) (2nd ed.). Dar Al-Kutub.
- Attia, M. A. (2005). The effect of interacting mental, physical, and technical training using serial and random practice schedules on the acquisition and retention of fundamental football skills in novices [Doctoral dissertation, College of Physical Education – University of Baghdad].
- Callow, N., Roberts, R., & Moran, A. (2022). *Imagery research in sport: Past, present and future*. *International Review of Sport and Exercise Psychology*, 15(1), 1–28. <https://doi.org/10.1080/1750984X.2021.1875895>
- Cumming, J., & Williams, S. E. (2022). *Imagery interventions in sport: Theory to practice*. Routledge.
- Ezzat, A. S. (2025). Psychological endurance and its relationship to the emotional traits of football players in Kirkuk Governorate. *Sport Culture*, 500–509.
- Abdulridha, S. S., & Shaalan, A. K. (2023). Mental health and its relationship to the accuracy of decision-making for referees in the Premier League in handball. *Sport culture*, 14(2).
- Han, J., Waddington, G., Anson, J., & Adams, R. (2020). *Proprioceptive training and motor performance: Exploring the link in sport skill acquisition*. *Journal of Sports Sciences*, 38(7), 801–810. <https://doi.org/10.1080/02640414.2019.1702930>





- Hantoosh, M. D. (1982). Sports psychology. Directorate of Dar Al-Kutub for Printing and Publishing.
- Abdulridha, S. S. (2023). Achievement motivation and self-confidence and their relationship to the performance of the scoring skill of the players of the Diyala University team in futsal football. *JOURNAL OF SPORT SCIENCES*, 15, 55.
- Ibrahim, A. J., Al-Zubaidy, A.-W. A., & Ali, J. A. (2025). Mental health and its relationship to athletic excellence among basketball players in Iraq. *Sport Culture*, 423–432.
- Mikhael, E. N. (2014). Construction and standardization of psychological and educational tests and scales (1st ed.). Dar Al-I'sar Al-Ilmi for Publishing.
- Rateb, O. K. (2000). Psychological skills training: Applications in the sports field (1st ed.). Dar Al-Fikr Al-Arabi.
- Sigrist, R., Rauter, G., Riemer, R., & Wolf, P. (2021). *Augmented visual, auditory, haptic, and multimodal feedback in motor learning: A review*. *Psychonomic Bulletin & Review*, 28(1), 1–23. <https://doi.org/10.3758/s13423-020-01888-4>
- Abdulridha, S. S., & Shaalan, A. K. (2023). Mental health and its relationship to the accuracy of decision-making for referees in the Premier League in handball. *Sport culture*, 14(2).
- uillot, A., & Collet, C. (2020). *The neurophysiological foundations of mental imagery: A review of sport and clinical contexts*. *Frontiers in Psychology*, 11, 1338. <https://doi.org/10.3389/fpsyg.2020.01338>
- Williams, S. E., Cumming, J., & Edwards, M. G. (2021). *The role of auditory imagery in sport: Implications for skill learning and performance*. *Psychology of Sport and Exercise*, 52, 101832. <https://doi.org/10.1016/j.psychsport.2020.101832>

Appendix (1): Sport Imagery Questionnaire

Developed by: Rainer Martens (1992)

Arabic Adaptation by: Osama Kamel Rateb (2000)

Before beginning this questionnaire, remember that mental imagery is more than merely seeing something. It requires the use of multiple senses, such as hearing, touch, smell, and taste, in addition to the emotional state accompanying the situation. This inventory comprises four athletic situations:

1. Practicing alone
2. Practicing with others
3. Watching a teammate
4. Performance in competition

You are requested to imagine each presented situation and rate your response according to a 5-point rating scale as follows:

- 1: No image present (no image of the situation).
- 2: Image present, but unclear.
- 3: Moderately clear image.
- 4: Very clear image.
- 5: Extremely clear image (completely clear).

Below are the athletic situations to which you are requested to respond:

Situation 1: Practicing Alone

Select a specific skill or situation in your sport (e.g., penalty kick, free kick, corner kick). Imagine yourself performing this skill or situation in the place where you usually practice (training hall/gymnasium) with nothing else present. Close your eyes for approximately one minute while attempting to see yourself in this place, listening to the sounds, feeling your body during movement execution, and trying to be aware of your mental and emotional state. Try to see yourself from an internal



perspective (from within your body). Rate your degree of mental imagery by circling the number corresponding to what you experienced:

Item	Statements	No Image	Unclear Image	Moderately Clear Image	Clear Image	Completely Clear Image
1	How clearly did you see yourself performing the required skill?	1	2	3	4	5
2	How clearly did you hear the sounds accompanying the performance?	1	2	3	4	5
3	How clearly did you feel your body during the execution of the required skill?	1	2	3	4	5
4	What was your degree of awareness of the accompanying emotional state?	1	2	3	4	5

Item	Statements	No Control	Difficult to Control	Moderate Control	Above Average Control	Complete Control
5	To what extent were you able to control the image?	1	2	3	4	5

Situation 2: Practicing with Others

Imagine the same previous skill or situation, but in the presence of both the coach and team members. Imagine performing an error that was observable to everyone. Close your eyes for approximately one minute and mentally imagine the erroneous performance with the highest possible clarity. Try to view the image from an internal perspective (from within your body). Rate the clarity of your mental imagery by circling the number corresponding to what you experienced:

Item	Statements	No Image	Unclear Image	Moderately Clear Image	Clear Image	Completely Clear Image
1	How clearly did you see yourself in this situation?	1	2	3	4	5
2	How clearly did you hear the sounds in this situation?	1	2	3	4	5
3	How clearly did you kinesthetically feel the performance in this situation?	1	2	3	4	5
4	How clearly did you feel the emotional states in this situation?	1	2	3	4	5
Item	Statements	No Control	Difficult to Control	Moderate Control	Above Average Control	Complete Control
5	To what extent were you able to control the image in this situation?	1	2	3	4	5

Situation 3: Watching a Teammate

Think of a teammate or another athlete performing a specific skill or situation during competition. Close your eyes for approximately one minute and imagine the situation as clearly and realistically as possible during a successful performance in a critical part of the competition. Rate the clarity of your mental imagery by circling the number corresponding to what you experienced:

Item	Statements	No Image	Unclear Image	Moderately Clear Image	Clear Image	Completely Clear Image
1	How clearly did you see your teammate in this situation?	1	2	3	4	5
2	How clearly did you hear the sounds in this situation?	1	2	3	4	5
3	How clearly did you feel your body or movements in this situation?	1	2	3	4	5
4	How clearly did you feel the emotional states in this situation?	1	2	3	4	5
Item	Statements	No Control	Difficult to Control	Moderate Control	Above Average Control	Complete Control





5	To what extent were you able to control the image in this situation?	1	2	3	4	5
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Situation 4: Performance in Competition

Imagine performing the same previous skill or situation during an actual competition. Imagine a successful, superior performance along with the positive cheering of teammates and spectators. Close your eyes for approximately one minute and imagine the scene with the highest possible degree of clarity. Rate the clarity of your mental imagery by circling the number corresponding to what you experienced:

Item	Statements	No Image	Unclear Image	Moderately Clear Image	Clear Image	Completely Clear Image
1	How clearly did you see yourself in the competition situation?	1	2	3	4	5
2	How clearly did you listen to the sounds in the competition situation?	1	2	3	4	5
3	How clearly did you feel the successful performance in the competition?	1	2	3	4	5
4	How clearly did you feel the emotions in this situation?	1	2	3	4	5
Item	Statements	No Control	Difficult to Control	Moderate Control	Above Average Control	Complete Control
5	To what extent were you able to control the image?	1	2	3	4	5

Scoring Your Mental Imagery:

- **Visual Imagery** = Sum of scores for Item (1) across the four situations =
- **Auditory Imagery** = Sum of scores for Item (2) across the four situations =
- **Kinesthetic Sensation** = Sum of scores for Item (3) across the four situations =
- **Accompanying Emotional State** = Sum of scores for Item (4) across the four situations =

Scores for each dimension range from a minimum of 4 points to a maximum of 20 points. Higher scores indicate greater imagery ability and competence, whereas lower scores indicate that you require further training to develop that specific dimension of mental imagery.