

## The Effect of Internal Imagery Training on Increasing the Accuracy of Free Kicks for Young Indonesian Football Athletes Aged 13 Years



Muhammad Arifin<sup>1</sup>, Suharjana<sup>2</sup>, Sumarjo<sup>3</sup>, Muhamad Ichsan Sabillah<sup>4</sup>, Faza Annasai<sup>5</sup>

<sup>1,2,3,4,5</sup> Department Of Sport Science, Yogyakarta State University, Yogyakarta, Indonesia

**ABSTRACT:** This study aims to determine the effect of internal imagery training on increasing the accuracy of free kicks of young Indonesian football athletes aged 13 years. This type of research is an experiment with the design of one group pre-test and post-test. The population in this study was 24 young Indonesian football athletes aged 13 years. The sample in this study was 10 people taken using purposive sampling techniques. The instrument used is to measure the accuracy of the free kick using a test of shooting the ball at the target. The data analysis technique used is the paired sample t-test. The results showed that there was a significant influence of internal imagery exercises on increasing the accuracy of free kicks from the initial test and the final test increased by a difference of 4.7, namely from an average score of 9.7 in the pre-test to 14.4 in the post-test, and strengthened by the results of the t-test using a paired sample t-test with a t value of -7,870 and a p significance value of  $0.000 < 0.05$ . This study concludes that there is a significant influence of internal imagery training on increasing the accuracy of free kicks of young Indonesian football athletes aged 13 years.

**KEYWORDS:** Internal Imagery, Accuracy free kick, Football.

### I. INTRODUCTION

Psychology is an important aspect of supporting athlete success (Stambulova et al., 2021). Mental training is one of the psychological strengthenings used to increase self-confidence in athletes because of the good appearance of athletes by being able to speak and think positively about themselves when the athlete will choose the art of management at the games (Indraharsani & Budisetyani, 2017; Kim & Cruz, 2021). This is a crucial factor in achieving psychological success. Imagery means the actual form of simulation. Imagery is derived from experiences gained from the way of seeing, feeling, and listening, but holistically those experiences occur in the brain (Kraeutner et al., 2018). This agrees with (Sitaram et al., 2017) who state that mental imagery is something that occurs in the brain. In doing imagery training, players must be able to concentrate so that the training achieves what will happen well.

Concentration is focusing on an exclusive and undisturbed thing the internal as well as the irrelevant external stimulus, as stated (Fatahilah & Firlando, 2020) Internal stimulus is a sensory disorder or mind similar to feelings of fatigue, anxiety, and so on. External stimulus is a disturbance from outside the self such as the cheers of the audience, the ridicule of the audience, the referee's decision errors, and others. In global sports, concentration means the ability of athletes to focus on the game for better achievements.

In the world of sports concentration is the ability of athletes to focus on the game for better achievements. Previous research has stated that concentration is needed to achieve optimal achievement, not only in shooting, archery, golf, tennis, and swimming but in almost all sports, including team sports. (Issurin, 2016; Moran, 2016). The origin of the statement above can be interpreted that every sport requires good concentration, making sports skills.

Imagery training is a form of exercise that can enhance the player's technique. Mental imagery exercise means a technique that is often used by instructors and experts in sports psychology to help improve the performance of athletes (Bedir & Erhan, 2021; Slimani et al., 2016). The imagery perspective is used based on the player being able to imagine himself and others when performing a technique. In other terms, mental imagery exercises that are used according to the ability of a person player present a shadow of a free kick technique on the mind. Visualization means that one of the most powerful mental training management arts for athlete performance (Bali, 2015; Dohme et al., 2019).

Imagery mental training in football can be done by the player by presenting a shadow of himself performing a movement technique on his brain, for example in doing the free-kick technique in football the player can imagine himself doing a

# The Effect of Internal Imagery Training on Increasing the Accuracy of Free Kicks for Young Indonesian Football Athletes Aged 13 Years

free-kick movement using the good and valid result of which the ball enters the goal net past the goalkeeper. A free kick kicker is required to have good basic football techniques, especially in terms of kicking or shooting the ball at the target because it will determine whether or not the free kick is successful (Eager et al., 2022; Schaper et al., 2020). According to the coverage in the field, as is the case in young Indonesian football athletes, many athletes have different kicking techniques, especially in the use of their feet and the level of concentration before kicking. Therefore, to raise the good effect of kicking free kick technique in football requires perfect training for the athlete.

Based on observations in January 2023 and information submitted by the FC U-13 youth football athlete coach that the accuracy level of the athlete's free kick is still low as evidenced by the instrument of the accuracy of shooting the ball at the target with the results of 24 athletes 10 of which the level of free kick accuracy is still low. In addition, researchers have not seen any imagery training in training programs in young Indonesian football schools even though the need for mental abilities or often considered mental skills plays a crucial role in the process of achieving achievements in team sports similar to football.

From the conflict above, using internal imagery exercises can solve the problem of free kicks found in football schools. This can be proven to come from the imagery exercise itself because in doing a free kick with imagery a player must imagine himself (visualization) in his mind when doing a free kick from that a football player who is doing a free kick can use to see the post, the goal net, the position of the goalkeeper, and the fortress of people built versus then hear and feel as a result the ball enters the opponent's goal. This is in line with research that confirms a simulation that occurs in the brain that can strengthen or describe the free-kick movement (Predoiu et al., 2020; Renshaw et al., 2019). Based on the conflict above, the purpose of this study is to determine the effect of internal imagery training on increasing the accuracy of free kicks of young Indonesian football athletes. This form of mental imagery training is used to improve the quality of a technique, especially free kicks in football.

## II. MATERIAL AND METHODS

This study used an experimental research model with a group pre-test-post-test design. This method is validation, which is to test the influence of one variable on another. This experimental study used one group that received the same treatment, namely the provision of internal imagery exercises. The population in this study was 24 people, and the sample in this study was 10 people. Sampling technique using a purposive sampling technique. This study has received approval from all samples that have filled out a statement of ability to become a research sample and have met the requirements of the research code of ethics.

Data collection techniques in this study are tests and measurements. An instrument for measuring the accuracy of free kicks using a test of shooting the ball at the target. After that, treatment or exercise is given as much as 6 meetings with a frequency of 3x a week. And ended with taking the final test or post-test to measure the accuracy of free kicks using to know the difference in the accuracy score of free kick football athletes after treatment. The data analysis technique used in this study using SPSS 22 was to use a paired sample t-test. at the significance level  $\alpha = 0.05$ . Before arriving at the use of paired sample t-test, it is necessary to carry out prerequisite tests, which include: (1) a normality test and (2) a hypothesis test with paired sample t-test.

## III. RESULTS AND DISCUSSION

The research results and discussion section will be presented sequentially, including data on the results of the research pre-test and post-test, prerequisite test, and hypothesis test. The hypothesis test in this study will be presented by the formulation of the problem, namely: (a) The Effect of Internal Imagery Training on Increasing the Accuracy of Free Kicks for Young Indonesian Football Athletes. In full it will be presented as follows.

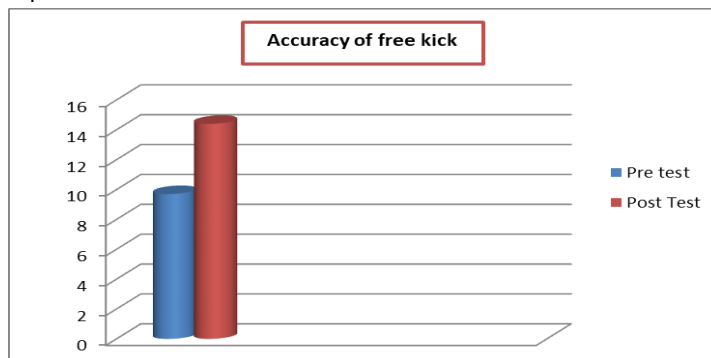


Figure 1. Bar chart pre-test and post-test Accuracy Free Kick Football Athletes

# The Effect of Internal Imagery Training on Increasing the Accuracy of Free Kicks for Young Indonesian Football Athletes Aged 13 Years

Based on Figure 1 above, shows that the accuracy of the free kick of young Indonesian football athletes averaged 9.7 pretests and increased at the time of posttest worth 14.4.

## 1. Prerequisite Test Results

### a. Normality Test

The data normality test in this study used the Shapiro-Wilk method. The results of the data normality test conducted in each analysis group were carried out with the SPSS version 22.0 for windows software program with a significance level of 5% or 0.05. The summary is presented in Table 1 as follows.

**Table 1. Summary of Normality Test Results**

Group	P	Significance	Information
Pre-test Accuracy Free Kick	0,643	0,05	Usual
Post-Test Accuracy Free Kick	0,376	0,05	Usual

Based on the statistical analysis of normality tests that have been carried out using the Shapiro-Wilk test, all fine motor pretest and posttest data were obtained from the normality test results of the data significance value  $p > 0.05$ , which means that the data are normally distributed.

### Hypothesis Test Results

Research hypothesis testing is carried out based on the results of data analysis and interpretation of paired sample t-test analysis. The results of hypothesis testing are adjusted to the hypothesis formulated earlier, as follows: "The hypothesis is that there is an influence of internal imagery training on increasing the accuracy of free kicks of young Indonesian football athletes" Based on the results of the analysis obtained data in Table 3 as follows:

**Table 2. Paired sample t-test results in internal imagery exercises on improving the accuracy of free kicks.**

#### Paired Samples Test

	Paired Differences	t	df	Sig. (2-tailed)	
					95% Confidence Interval of the Difference
					Upper
Pair 1 Pre-test Accuracy Free Kick - Post-test Accuracy Free Kick	-3.34900	-7.870	9	.000	

From the results of the paired sample t-test test Table 2 above, it can be seen that the significance value of  $p$  is 0.000 and the value of  $t$  is  $-7.870$ . Since the significance value of  $p$  is  $0.000 < 0.05$ , it means that  $H_0$  is rejected. Thus there is a significant influence of internal imagery training on the increase in free kicks of young Indonesian football athletes. This means that the research hypothesis that states that "There is a significant influence of internal exercise imagery on the increase in a free kick of young Indonesian football athletes", has been proven.

## DISCUSSION

The discussion of the results of this study provides a further interpretation of the results of the data analysis that has been put forward. Based on hypothesis testing produces an analysis, namely: (1) there is a meaningful influence of the main factors of the study. The discussion of the results of the analysis can be explained further as follows.

"There is an influence of internal imagery training on improving the accuracy of free kicks of young Indonesian football athletes"

Based on the results of the analysis carried out, it was found that the accuracy of free kick athletes of young Indonesian football has improved well by being given training using an internal imagery training model. These results are by previous research which states that internal imagery mental exercises are more useful than external imagery mental exercises if used as an exercise model to develop movement techniques and develop strategies (Mujika et al., 2018; Tangkudung, 2022). Internal mental exercise imagery is also higher in generating psychological responses (Hardy et al., 2018; He et al., 2018). This psychological response can

## The Effect of Internal Imagery Training on Increasing the Accuracy of Free Kicks for Young Indonesian Football Athletes Aged 13 Years

produce more endorphin hormones so that it has a calmer and more comfortable effect on athletes or players in carrying out their duties.

Based on some of the theories above, it is known that internal imagery mental exercises have many advantages over external imagery exercises. In the internal imagery method exercise, there are advantages, namely more in improving the player's psychological response, besides that the internal imagery mental exercise is simpler and maximizes the player's movement experience. With several advantages, it can be concluded that internal imagery mental training is more influential in improving player performance.

### IV. CONCLUSION

Based on the results of the research and the results of the data analysis that has been carried out, the following conclusion was obtained: There is a significant influence of internal imagery training on improving the accuracy of free kicks of young Indonesian football athletes. The results showed that the internal imagery training method is an effective method used for young Indonesian football athletes. The research results imply that improving the accuracy of free kicks, it can be done by pursuing the application of an internal imagery model. This means that athletes are given a training model that is by their characteristics so that in the training process athletes feel happy and motivated to follow the training so that training goals will be achieved. Then another implication is to encourage coaches to apply a suitable mental training model that can increase the accuracy of free kicks when participating in training.

### REFERENCES

- 1) Bali, A. (2015). Psychological factors affecting sports performance. *International Journal of Physical Education, Sports and Health*, 1(6), 92–95.
- 2) Bedir, D., & Erhan, S. E. (2021). The effect of virtual reality technology on the imagery skills and performance of target-based sports athletes. *Frontiers in Psychology*, 11, 2073.
- 3) Dohme, L.-C., Piggott, D., Backhouse, S., & Morgan, G. (2019). Psychological skills and characteristics facilitative of youth athletes' development: A systematic review. *The Sport Psychologist*, 33(4), 261–275.
- 4) Eager, D., Ishac, K., Zhou, S., & Hossain, I. (2022). Investigating the Knuckleball Effect in Soccer Using a Smart Ball and Training Machine. *Sensors*, 22(11), 3984.
- 5) Fatahilah, A., & Firlando, R. (2020). TINGKAT KONSENTRASI ATLET KOTA LUBUKLINGGAU. *Riyadhoh: Jurnal Pendidikan Olahraga*, 3(1), 38–42.
- 6) Hardy, L., Jones, G., & Gould, D. (2018). *Understanding psychological preparation for sport: Theory and practice of elite performers*. John Wiley & Sons.
- 7) He, Z., Wu, L., & Li, X. R. (2018). When art meets tech: The role of augmented reality in enhancing museum experiences and purchase intentions. *Tourism Management*, 68, 127–139.
- 8) Indraharsani, I. A. S., & Budisetyani, I. W. (2017). Efektivitas Self-Talk Positif Untuk Meningkatkan Performa Atlet Basket. *Program Studi Psikologi Udayana*, 4(2), 367–378.
- 9) Issurin, V. B. (2016). Benefits and limitations of block periodized training approaches to athletes' preparation: a review. *Sports Medicine*, 46, 329–338.
- 10) Kim, H.-D., & Cruz, A. B. (2021). Psychological influence of self-management on exercise self-confidence, satisfaction, and commitment of martial arts practitioners in Korea: a meta-analytic approach. *Frontiers in Psychology*, 12, 691974.
- 11) Kraeutner, S. N., McWhinney, S. R., Solomon, J. P., Dithurbide, L., & Boe, S. G. (2018). Experience modulates motor imagery-based brain activity. *European Journal of Neuroscience*, 47(10), 1221–1229.
- 12) Moran, A. P. (2016). *The psychology of concentration in sport performers: A cognitive analysis*. Psychology Press.
- 13) Mujika, I., Halson, S., Burke, L. M., Balagué, G., & Farrow, D. (2018). An integrated, multifactorial approach to periodization for optimal performance in individual and team sports. *International Journal of Sports Physiology and Performance*, 13(5), 538–561.
- 14) Predoiu, R., PREDOIU, A., MITRACHE, G., Firănescu, M., Cosma, G., Dinuță, G., & Bucuroiu, R. A. (2020). Visualisation techniques in sport—the mental road map for success. *Physical Education, Sport and Kinetotherapy Journal*, 59(3), 245–256.
- 15) Renshaw, I., Davids, K., Araújo, D., Lucas, A., Roberts, W. M., Newcombe, D. J., & Franks, B. (2019). Evaluating weaknesses of “perceptual-cognitive training” and “brain training” methods in sport: An ecological dynamics critique. *Frontiers in Psychology*, 9, 2468.

## The Effect of Internal Imagery Training on Increasing the Accuracy of Free Kicks for Young Indonesian Football Athletes Aged 13 Years

- 16) Schaper, S., Kaaden, L. van der, Boode, V. de, & Savelsbergh, G. (2020). Visual gaze behaviour during free-kicks in football. *International Journal of Sports Science & Coaching*, 15(5–6), 653–661.
- 17) Sitaram, R., Ros, T., Stoeckel, L., Haller, S., Scharnowski, F., Lewis-Peacock, J., Weiskopf, N., Blefari, M. L., Rana, M., & Oblak, E. (2017). Closed-loop brain training: the science of neurofeedback. *Nature Reviews Neuroscience*, 18(2), 86–100.
- 18) Slimani, M., Tod, D., Chaabene, H., Miarka, B., & Chamari, K. (2016). Effects of mental imagery on muscular strength in healthy and patient participants: A systematic review. *Journal of Sports Science & Medicine*, 15(3), 434.
- 19) Stambulova, N. B., Ryba, T. V, & Henriksen, K. (2021). Career development and transitions of athletes: The international society of sport psychology position stand revisited. *International Journal of Sport and Exercise Psychology*, 19(4), 524–550.
- 20) Tangkudung, J. (2022). *HIGH PERFORMANCE IN SPORTS: MENTAL TRAINING PADA CABANG OLAHRAGA* (Vol. 1). LPP Balai Insan Cendekia.



There is an Open Access article, distributed under the term of the Creative Commons Attribution – Non Commercial 4.0 International (CC BY-NC 4.0) (<https://creativecommons.org/licenses/by-nc/4.0/>), which permits remixing, adapting and building upon the work for non-commercial use, provided the original work is properly cited.