

Effect of 9 Weeks Football Training Program for Players under 14 Years Old: A Trial Study

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Received November 2, 2021; Revised April 2, 2022; Accepted April 27, 2022

Cite This Paper in the Following Citation Styles

(a): [1] Norkhalid Salimin, Mohammad Zarid Zaini, Teeraphan Sangkaew, "Effect of 9 Weeks Football Training Program for Players under 14 Years Old: A Trial Study," *International Journal of Human Movement and Sports Sciences*, Vol. 10, No. 4A, pp. 15 - 20, 2022. DOI: 10.13189/saj.2022.101303.

(b): Norkhalid Salimin, Mohammad Zarid Zaini, Teeraphan Sangkaew (2022). *Effect of 9 Weeks Football Training Program for Players under 14 Years Old: A Trial Study*. *International Journal of Human Movement and Sports Sciences*, 10(4A), 15 - 20. DOI: 10.13189/saj.2022.101303.

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Abstract This trial study is aimed at helping coaches train players for comprehension and intelligence in football. Organized, systematic and comprehensive training modules can help coaches to train and improve player performance. The trial study design is a quasi-experimental method with pretest - posttest design. Subjects were football players under 14 years old from Johor Bahru district in Malaysia. Subjects were divided into treatment group (n = 26) and control group (n = 26). Treatment group was exposed to CGfU Module for nine weeks. On the other hand, control group was exposed to the FAM License 'C' Football Training Module for nine weeks. The research instrument was the System of Tactical Assessment in Soccer (FUT-SAT). The effect of the use of the training modules was tested on the performance of football players under 14 years old in terms of performance quality, place of action on the field and action results. Based on the t-test, the intervention significantly affected the post-test performance of football players in the treatment and control groups. Nevertheless, the t-test showed no significant difference in pre-test performance between the treatment and control groups. The t-test also showed no significant difference in post-test performance between the treatment and control groups. In conclusion, CGfU Module had an impact on the performance of under-14 football players. The game modification training method using the CGfU Module can increase understanding and make players intelligent in the football game.

Keywords Coaching Games for Understanding

(CGfU), Football, Game Modification Training Method

1. Introduction

Football is part of the phenomenon of life today, including in Malaysia [1]. The history of football in Malaysia dates back to the arrival of the British. In 1920, Malaysia began introducing a football competition known as the Malaya Cup and later renamed the Malaysia Cup in 1963. The Football Association of Malaysia (FAM) is the parent body that governs football in Malaysia. It is an independent body responsible for developing national football and looking after the welfare of football players. Football in Malaysia has been introduced at the school level. The Ministry of Education Malaysia (MOE) also recognizes the game of football at the school level by making football one of the main sports in the 1 Student 1 Sport Policy (1M1S) [2].

The emphasis of the field of football coaching at the school level provides a quality experience to students or players and encourages players to be more active [3]. Coaching plays a vital role in gameplay because "this rationale is difficult to accept because even most professional players are continuously coached during gameplay" [4]. It is clearly shown that coaching is an important thing and is always needed in the play. The 21st-century education requires an emphasis on the

cognitive development of students. To achieve this goal, the emphasis on various instruction can enhance the student's thinking and personal development more holistically [5].

Therefore, an organized, systematic, and comprehensive football training program should be provided for coaches to train and improve players' performance. Systematic training content can produce good performance [5]. In addition, to achieve good performance, coaches need guidance resources that help plan systematic and holistic training to improve player performance [6].

The game modification training method using the CGfU Module provides a new dimension for football training. Game modification training methods can contribute to performance improvement [4]. There are four methods of modification in the game: pitch size, attacking and defending rate, rules and limitations, and equipment modification [7]. Small games use small-sized pitches, use modified rules, and involve fewer players than traditional football games [8]. The modification of equipment can affect the level of difficulty in training or play [4].

1.1. The Development of Coaching Games for Understanding (CGfU) Module

The Coaching Games for Understanding (CGfU) module is a type of football training explicitly provided for players under 14 years of age. The development of the CGfU Module refers to Teaching Games for Understanding (TGfU) for Coaching (TGfU to train) [9] and Coaching for Understanding (CfU) [10]. TGfU provides a form of training that can develop players and teams through training through 'TGfU to train' instead of 'TGfU to teach' [9]. For sports games, 'TGfU to train' is more appropriate because it is more geared towards improving the performance of players in the game. 'TGfU to train' uses games to improve performance through the method of asking about 'what to do?', 'when to do?' and 'why should it be done?'. In addition, 'TGfU to coach' emphasizes coaching in coaching players [9].

The learning process takes place in training using the CGfU Module through four philosophies, namely (i) 3 on 3 small games, (ii) strategy and tactics, (iii) decision making and (iv) attacking game. The trainer will use a questioning approach that is "what", "when" and "why" during the learning process. Through the CGfU Module, coaches can train the game for comprehension and make intelligent players in the football game. Therefore, the development phase of the CGfU Module requires careful planning to ensure that the training learning process runs smoothly. Thus, the Sidek Module Development Model (MPMS) has been used as a guide in developing the CGfU Module [11].

1.2. The Effectiveness of the Coaching Games for Understanding (CGfU) Module

The effectiveness of a module should be tested.

Therefore, this study was conducted to test the CGfU Module as an intervention towards improving the performance of football players [11]. The study on the effectiveness of the CGfU Module was to use a pretest-posttest quasi-experimental study design. Studies state it is better to compare two experimental groups because each receives a different intervention [15]. Therefore, for that purpose, this study was conducted on two groups, namely the treatment and control groups.

The treatment group followed the intervention using the module produced in this study which is the CGfU Module. Meanwhile, the control group followed the intervention using the Football Training Module License 'C' of the Football Association of Malaysia (FAM). The researcher has obtained written permission from the FAM on the use of the module for research purposes.

Study subjects were exposed to interventions using the CGfU Module and the FAM License 'C' Football Training Module for nine weeks after undergoing the pre-test. The effect of the intervention using the CGfU Module and the FAM License 'C' Football Training Module was then seen based on the subject's performance in the post-test. The effectiveness study is essential to be the basis for the application of the CGfU Module in football training in the future.

2. Methodology

2.1. Participants

The subjects consisted of 52 football players from two secondary schools in the Johor Bahru district. The participants were born in 2004 and 2005. Subjects were divided into treatment group (n = 26) and control group (n = 26). The number of subjects for each group was adequate based on Cohen's Statistical Power of Analysis with a significance level of 0.05 (2-tailed) [16]. The researcher has also obtained written permission from the Education Planning and Research Division, Ministry of Education Malaysia, to conduct this study.

2.2. Procedures

Within the scope of the study, data collected from two groups were compared. After data collection procedures is completed, collected data were analyzed on SPSS 27.0 System Analysis Program. Collected data were analyzed with descriptive statistical method (mean, standard deviation, percentage, etc.).

In order to find out whether groups were presented similarly, study subjects were required to undergo pre-test using the System of Tactical Assessment in Soccer (FUT-SAT) procedure [17]. The FUT-SAT instrument is an assessment instrument introduced by Toeldo et al. (2011). This instrument assessed subjects using small

games with variables that could be adjusted according to the objectives of the study. According to Toeldo et al. (2011) the evaluation of players using the FUT-SAT instrument has three procedures. The first procedure is to analyze the player's actions during the match; the second procedure is the evaluation, classification, and recording of tactical actions; the third procedure is the calculation of the variable used, the Tactical Performance Index (TPI).

The performance of the study subjects will be assessed using the TPI equation to obtain the mean score of the subjects before being categorized according to the players' level of performance in the pretest, namely low, medium, and high levels. Subjects' performance was assessed based on three items, namely the principle of performance quality (QP), place of action on the field (PA), and action results (AO). The performance quality principle (QP) is an assessment of the quality of the performance principle according to the individual. Subjects were assessed in terms of the quality of shots, passes or dribbling toward the goal, support during the game, movement into the opponent's area, and the player's ability to open space during the game. The place to act on the field (PA) is an assessment of the attack action, that is, the subject moves to the middle of the field and enters the opponent's area to attack. Action result (AO) is to evaluate the decision made by the subject during the game that is a shot towards the goal, maintaining the position of the ball and successfully making a pass, the action of the player who managed to win a foul, the decision of the subject that caused the opponent to get a corner kick or throw into the field and an assessment of the player's decision that caused the ball to be seized by the opponent. The equation for the Tactical Performance Index (TPI) is:

$$\text{Tactical Performance Index (TPI)} = \frac{\sum \text{Tactical action}(QP \times PA \times AO)}{\text{No. of tactical actions}}$$

Players' performance is evaluated based on three items, namely the principle of performance quality, place to perform on the field and action results. The intervention program began by exposing the subject to the procedures for each intervention. The intervention process lasted for nine weeks. Subjects in the treatment group followed the intervention using the CGfU Module. Subjects were trained using the CGfU Module with three levels of development in training and assessment namely Low Level, Medium Level and High Level. The three levels in the CGfU Module meet the performance criteria related to increasing or decreasing the level of difficulty [4]. Fitts and Posner theory was used as a reference in determining the three levels of learning in the CGfU Module football game [18].

The subjects in the control group followed the intervention using the FAM License 'C' Football Training Module. The FAM 'C' License Module is a football training module produced by the FAM Coaching Education Unit that is suitable for players under the age of

14 years. The players in the control group were trained using the FAM License Module 'C', which consists of three types of training: position training, passing training, and game training.

Both groups of subjects underwent post-test, which is the same test that was used in the pretest. The post-test implementation was carried out as soon as the intervention using the CGfU Module and the FAM License 'C' Football Training Module ended. The researcher expedited the post-test to avoid a threat to the experiment's internal validity from the aspect of event effects. Pretest and post-test are vulnerable to the threat of event effects if the time distance between pretest and post-test is getting longer [15].

3. Result

Three assessment items in pre-test and post-test using FUT-SAT are (i) the principle of performance quality (QP), (ii) place of action on the field (PA) and (iii) action results (AO) [17]. The level of performance of players is classified into three levels, namely low, medium and high.

The overall performance of the study subjects in pre-test and post-test is shown in Table 1.

Table 1. Level of performance of subjects of treatment group and control group in pre-test and post-test.

Group	Level	N	%
Pre-test			
Treatment	Low	3	12%
	Medium	19	73%
	High	4	15%
Overall (M = 15.942, SD = 4.191)			
Control	Low	1	4%
	Medium	21	81%
	High	4	15%
Overall (M = 16.403, SD = 3.841)			
Post-test			
Treatment	Low	-	-
	Medium	15	58%
	High	11	42%
Overall (M = 19.865, SD = 4.491)			
Control	Low	-	-
	Medium	13	50%
	High	13	50%
Overall (M = 19.942, SD = 4.391)			

The findings in Table 1 showed that the mean performance of the control group subjects was higher than the mean performance of the treatment group. The pre-test results showed that the performance of the treatment group

subjects was ($M = 15.942$, $SD = 4.191$) while the performance of the control group subjects was ($M = 16.403$, $SD = 3.841$). The post-test findings showed that the subjects' performance in the treatment group was ($M = 19.865$, $SD = 4.491$) while the performance of the subjects in the control group was ($M = 19.942$, $SD = 4.391$).

Next, t-test was conducted using Statistical Package for the Social Sciences (SPSS) to compare the pre-test and post-test findings for both groups.

Table 2. Comparison of treatment group performance on pre-test and post-test

Treatment Group	N	M	SD	t	p
Pre-test	26	15.942	4.191	-3.502	.002*
Post-test	26	19.865	4.491		

* significant at $p < .05$

The findings in Table 2 show that there is a significant difference in the performance of the subjects of the treatment group ($N = 26$) on pre-test and post-test ($t = 3.502$, $p = .002$).

Table 3. Comparison of control group performance on pre-test and post-test

Control Group	N	M	SD	t	p
Pre-test	26	16.403	3.841	-3.323	.003*
Post-test	26	19.942	4.391		

* significant at $p < .05$

Table 4. Comparison of performance of treatment group and control group on pre-test

Group	N	M	SD	t	p
Treatment	26	15.942	4.191	-.414	.681
Control	26	16.403	3.841		

The findings in Table 3 show a significant difference in the performance of control group subjects ($N = 26$) on pretest and posttest ($t = 3.323$, $p = .003$).

Table 4 shows a comparison of the performance of the treatment and control group subjects in the pre-test. The findings showed no significant difference in pre-test for both groups, namely the treatment and control groups ($t = -.414$, $p = .681$). The findings showed that the mean performance of the treatment group subjects was ($M = 15.942$, $SD = 4.191$) and had no significant difference with the performance of the control group subjects during the pre-test ($M = 16.403$, $SD = 3.841$).

Table 5 compares the performance of the subjects of the treatment and control groups in the post-test. The findings showed no significant difference between the performance of soccer players in the treatment and control groups at post-test ($t = -.062$, $p = .950$). The findings showed that the mean performance of the treatment group subjects was (M

$= 19.865$, $SD = 4.491$) and did not show a significant difference with the performance of the control group subjects during the post-test ($M = 19.942$, $SD = 4.391$).

Table 5. Comparison of performance of treatment group and control group at post-test

Group	N	M	SD	t	p
Treatment	26	19.865	4.491	-.062	.950
Control	26	19.942	4.391		

4. Discussions

The purpose of the study was comparing the effects of nine weeks training programs between treatment group and control group. Pretest-posttest methods are widely used in studies to assess differences after an intervention program [19]. Pretest-posttest methods are very effective for evaluating the effectiveness of a program [20, 21]. Therefore, this study has used the pretest-posttest method to test the effectiveness of intervention training for each study group.

The findings of the study showed that there were significant differences in pretest and post-test for the treatment group using the FUT-SAT instrument. These findings indicate that several factors influence the improvement in subject performance for the treatment group in the post-test. Factors influencing the improvement of subject performance were implementing training sessions for nine weeks, the learning process inherent in the CGfU Module, game modification training using the CGfU Module and the level of training in the CGfU Module. In addition, the findings also showed that there were significant differences in pretest and post-test for the control group. This indicates that the intervention program has also improved the performance of the control group subjects. A time period of six to nine weeks is required to improve the performance level of a football player [22].

Furthermore, the study's findings showed no significant difference in the performance of the treatment group subjects and the control group in the pre-test using the FUT-SAT instrument. Pre-test findings between the two groups that showed no difference meant no element of unfairness in the study sample [23]. Findings comparing the performance of the treatment group and the control group in the pre-test have proved that both groups are fair, i.e., there is no element of unfairness. Pre-test findings will show no significant differences between study groups [24].

Post-test findings also showed no significant differences in subjects' performance in the treatment group and control group using the FUT-SAT instrument. The findings indicate that several factors influence the results of the study. The main factor influencing the results of the study was the same training period of nine weeks. Therefore, all study subjects were trained with the same amount of time to enable football training to be carried out effectively.

Bompa's theory states that training for nine, 12 and 15 weeks is suitable for use in sports [25]. This shows that football training for nine weeks has had a positive impact on the subjects' performance.

The second factor that improved subjects' performance in the post-test was the intervention training that each subject had received in the treatment and control groups. The treatment group was exposed to training using the CGfU Module, which had four-game philosophies, while the control group was exposed to the FAM 'C' License Module, which had three types of training. The interventions given to both study groups resulted in no significant differences in the post-test. The subjects were able to absorb positive values in training and apply new experiences and knowledge in post-test.

5. Conclusions

In conclusion, the CGfU Module has had an impact on the performance of under -14 football players. The game modification training method using the CGfU Module introduced is able to be an alternative towards increasing understanding and making intelligent players in the game of football. This study has added the current literatures done in Malaysian football [26, 27, 28, 29, 30] that was hope to be able to help increasing the football quality in this country.

Acknowledgment

The authors would like to thank the Research Management and Innovation Centre of Sultan Idris Education University for the funding of this article's publication.

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