

Improving football playing skills through teaching games for understanding: A small-sided games approach

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ABSTRACT

Teachers may find difficulty to design assignments that will increase arousal and keep students' attention during stages that will encourage them critically to reflect on their actions during physical education activities. Designing assignments that increase arousal and maintain students' attention during physical education activities can be a challenging for teachers, often resulting in a reliance on traditional skills-based approaches. This study aims to address this issue by applying the Teaching Games for Understanding (TGfU) model with a small-sided games (SSG) approach to enhance students' football playing skills. The study used 3 vs 3 invasion games to evaluate playing skills, with a game performance evaluation tool (GPET) used as the playing skill instrument. Decisions regarding coding and execution are made in accordance with the subject of the tactical challenge to be solved, including on- and off-ball attackers. The findings revealed that the experimental group's decision-making ability when passing was 7.97 and when dribbling was 7.28. The performance results in the experimental group were 7.98 and those in the control group were 7.48. The research made a valuable contribution by demonstrating how using TGfU and SSGs can improve football skills and enhance the quality of teaching in physical education. One limitation is that the research only focused on football playing skills, so the results may not be generalizable to other sports or activities. Future research can investigate the impact of the intervention on other outcomes, such as enjoyment, motivation, and participation in physical activity.

Keywords: Football; TGfU; GPET; small-sided games; physical education

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INTRODUCTION

High hopes are placed on physical education to contribute to health and fitness, social maturity and leadership skills (Beni et al., 2017). While physical education is meant to prioritize enjoyment during the learning process (Batez et al., 2021), many teachers still rely on conventional approaches, where they are the dominant figures in learning, responsible for all decisions about planned content and objectives, while

students simply perform tasks as directed by the teacher (Gil-Arias et al., 2021; Metzler & Colquitt, 2021). This approach has been criticized for ignoring the context of physical education, which is rooted in real games and sports (Light et al., 2014), and for being implemented too hastily to yield meaningful results (Barba-Martín et al., 2020).

In addition, this can be seen in physical education lessons that are learned through a conventional approach that is carried out under the direction of the teacher. To increase motivation and learning intentions, didactic units must be carried out using comprehensive pedagogical techniques (Gaspar et al., 2021). Communities of practice with the goal of enhancing learning in many areas of physical education must promote pedagogical change (Casey & MacPhail, 2018). Within this conceptual framework, the goals to be achieved are formulated in general pedagogical terms that are abstract in nature. If the practice of the physical education curriculum is like that, where can students experience motion learning? How are students trained to make the right decisions in playing situations? And how can students be independent in completing their learning assignments?

The Teaching Games for Understanding (TGfU) approach is one solution to address these challenges. Although the command approach is still prevalent in Indonesia (Mawarti et al., 2022), TGfU has garnered attention from researchers as an alternative approach for physical education planning. While previous studies have focused on the impact of TGfU on basic skills (Darmawan et al., 2021; Fani & Sukoco, 2019; Sasmitha et al., 2020; Sasmitha & Suwirman, 2021), little attention has been paid to its effect on playing skills. Despite its greater adoption in academia than in natural physical education settings (Stolz & Pill, 2016), there are numerous advantages to applying TGfU in the learning process.

Students show improvement in factors related to performance and compliance (Arias-Estero et al., 2020; Morales-Belando & Arias-Estero, 2017). This approach is student-centered and designed to make the exercises more relevant, meaningful, and fun. However, TGfU's main justification is not based on affective or internal arguments but is still related to the idea that a good education is equated with "learning". The main contribution of the TGfU model is to encourage students to engage in learning, cognitive development, and tactical games while providing fun learning experiences in physical education (Barba-Martín et al., 2020; Harvey & Jarrett, 2014).

A preliminary investigation of schools in the Kuningan Regency revealed that instructors have difficulty instituting a game-centered physical education curriculum. This finding confirms the findings of García-Castejón et al. (2021) that instructors struggle to devise challenging tasks and maintain students' attention during critical reflection phases in sports activities. Consequently, educators frequently rely on traditional skill-based approaches. Current research on the TGfU model in Indonesia tends to concentrate on mastering basic techniques (Abbas & Abidin, 2016; Syarif & Winarni, 2015) rather than developing teachers' ability to implement game-based learning (TGfU), which can be a viable alternative to developing students as a whole (Cocca et al., 2020).

In Indonesia, few studies have concentrated on the performing abilities of students learning physical education using the TGfU approach. In addition, there is a paucity of literature on the implementation of this approach, particularly those that concentrate on aspects of playing ability. Therefore, additional research is required that focuses more on the application of the TGfU approach to enhance students' playing ability in order to fill the void in the literature. Such research can aid instructors in developing students' overall abilities through game-based learning, thereby enhancing their educational experience. As there is limited literature on TGfU that concentrates on playing skills, the purpose of this research is to implement the TGfU learning model to enhance students' playing abilities. The novelty of this study is it provides instructors with resources to implement the TGfU model in physical education and choose instruments to evaluate playing skills using the GPET.

METHOD

This study evaluated the playing abilities of eighth graders at SMP Negeri 1 Ciawigiabang, Kuningan Regency. The research population consisted of all 224 students from seven courses, with 28 male students (12.5% of the total population) selected based on time, effort, and cost considerations. The participants in

this investigation had no formal training experience. 3 vs. 3 invasion games, which are commonly used in football and other team sports for aerobic and anaerobic conditioning, were used to evaluate playing abilities. These activities provide opportunities for children to participate with and without the object. Table 1 demonstrates the distribution of the sample.

The game performance evaluation tool (GPET) was used as the playing skill instrument to assess the participant's playing abilities. The GPET, which was adapted from (García-López et al., 2013), measures decision-making, and the execution of technical and tactical actions in football. Each player's selection was analyzed from a tactical perception and coding and execution decisions were made based on the tactical problem to be addressed, the on-ball assailant, and the off-ball attacker. Table 2 outlined the three components of the GPET evaluation. Using GPET, the study sought to provide an objective evaluation of players' skills and contribute to the literature on the application of the TGfU strategy to enhance playing skills in physical education.

The data analysis techniques for this method can include the following steps: 1) Data Preparation: Collect and organize the data obtained from the 3 vs. 3 invasion games. This involved recording scores, time taken for certain actions, and any other relevant metrics that indicate the playing abilities of the students; 2) Descriptive Statistics: Calculates descriptive statistics such as mean, standard deviation, and range for each performance metric recorded during the games. This will provide an overview of the overall performance of the participants. 3) Comparative Analysis: Compare the performance of male students with that of the overall sample. This can be done by comparing the mean scores or other relevant metrics between the male students and the entire group of participants. 4) Performance Profiles: Created performance profiles for each participant by analyzing their individual scores or metrics. This can involve identifying strengths and weaknesses in different aspects of playing abilities, such as decision-making, technical execution, and tactical actions.

Table 1. Proportion of Sample Use

Subject	Class	The Number of Students			Population	Sample	The Number of Samples per Class
		Male	Female	Total			
VIII grade students	VIII A	14	18	32	224	12,5%	4
	VIII B	16	14	30			4
	VIII C	14	19	33			4
	VIII D	15	18	33			4
	VIII E	13	20	33			4
	VIII F	15	16	31			4
	VIII G	12	20	32			4
Total		99	125	224		28	

Table 2. Decision-Making Skills and Test Forms in GPET Adopted from Luiz Garcia, et al. (2013)

No	Aspects	Criteria
1	<i>Tactical Problem</i>	<ul style="list-style-type: none"> • <i>Situation Principle</i> <ul style="list-style-type: none"> - Students shoot at the opponent's goal. - Students launch attacks on their opponent's goal. - Students do ball control. • <i>Application Principle</i> <ul style="list-style-type: none"> - When the student's defensive position is close to the goal itself. - When the student's attacking position approaches the opponent's goal.
2	<i>On the Ball Attacker</i>	<ul style="list-style-type: none"> - Students keep mastering ball do not permit shooting at the opposing goal. - No teammate is within striking distance of the goal. - Do not have angles for shooting or passing. • Students attack the opponent's goal <ul style="list-style-type: none"> - Students pass to a teammate who is in a better position to attack. - Students carry out attacks even if there is no teammate who is better than their position • Students do the scoring

No	Aspects	Criteria
3	Off the Ball Attacker	<ul style="list-style-type: none"> - Every time there is an opportunity to shoot/head towards the opponent's goal, unless the distance is too great, a teammate is in a better position to score goals and reduces the distance to the goal/improves the angle of shooting at the opponent's goal. • Students defend the ball <ul style="list-style-type: none"> - Students provide support - Students provide defensive support • Students attack the opponent's goal <ul style="list-style-type: none"> - Students fill in the blanks. - Students look for the ideal position for shooting at the opponent's goal.

Next, to record students' playing activities, the format of the teacher's observation notes during the game to determine students' playing skills is compiled. Table 3 describes the format of the observation notes.

Table 3. Play Skill Observation Record Format

No	Time	DMU		Tactical Problem				On the Ball Attacker			Off the Ball Attacker	
		SP	AP	C	DM			Ex	Support			
					P	D	S		DM	Ex		
1												
2												
3												

Information: DMU = Decision Making Unit, SP= Situation Principle, AP = Application Principle, C= Control, DM=Decision Making, P=Passing, D= Dribbling, S= Shooting, Ex= Execution.

RESULTS AND DISCUSSION

The implementation of innovative teaching strategies that promotes student engagement, leadership, and trust is essential for enhancing the learning experience in physical education. By creating a variety of learning scenarios and tailoring assignments to meet individual student needs, educators can foster a sense of independence and motivation among students. Such an approach can lead to improve perceived competence, positive attitudes towards the sport being practice, and ultimately greater enjoyment and increase levels of physical activity (Gil-Arias et al., 2017).

One such approach that has gained recognition for its effectiveness in improving game performance and decision-making efficiency is the TGfU method. By emphasizing tactical understanding and problem-solving within the context of game play, TGfU enables students to develop a deeper comprehension of the sport and enhances their decision-making skills (Gutiérrez et al., 2014). By integrating TGfU principles into physical education curricula, educators can provide students with valuable opportunities to enhance their game performance while experiencing a more engaging and meaningful learning environment.

The results showed that at the intervention stage, the sample was given and carried out for playing skills (passing and dribbling). The experimental group has average decision-making ability at the time of passing (7.97) and dribbles (7.28). This is larger when compared to the control group. Figure 1 shows that significant differences were identified between the two groups in terms of decision-making during the intervention phase of the two techniques.

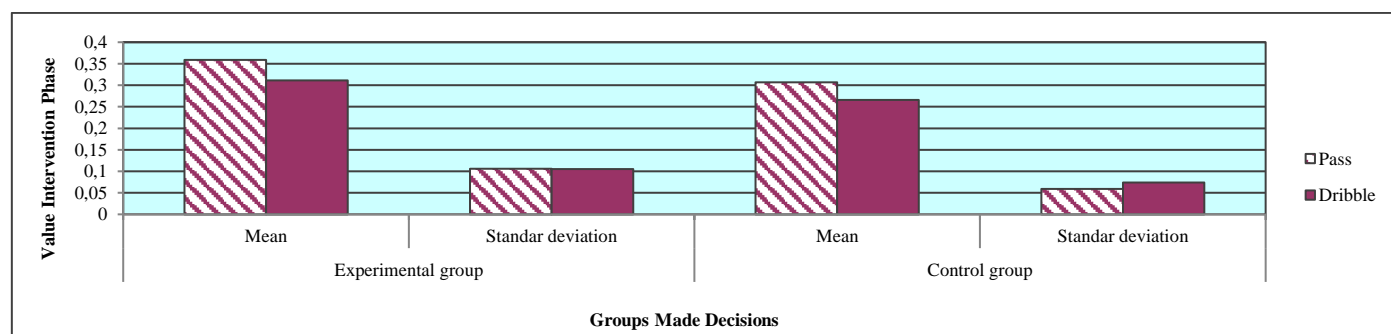


Figure 1. The Two Groups Made Decisions during the Intervention Phase

Meanwhile, figure 2 shows that there were significant differences identified between the two groups in terms of execution performance during the intervention phase when carrying out passing. However, the same did not happen with dribble, where the performance results in the experimental group were 7.98 and those in the control group were 7.48.

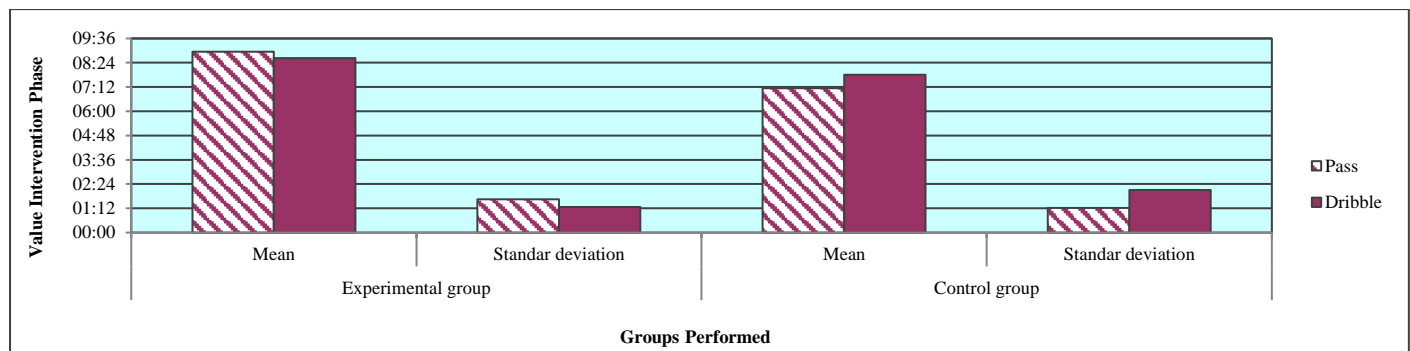


Figure 2. The Two Groups Performed During the Intervention Phase

From some of the tactical problems experienced by the 24 samples (possessing the ball, deciding to pass, deciding to dribble), we were able to obtain information that 76.04% could control the ball and 79.98% could penetrate the opponent's defence. Table 4 describes other parameters of playing skills from the sample in tactical problems.

Table 4. Game Performance Through the Implementation of Small-Side Games

Criteria	Small Sides Games	
	Mean	Standar Deviation
General performance:		
The tactical problem of keeping the ball	76.04	16.63
Break through defense	79.98	11.56
Performance in possession of the ball:		
Ball possession	77.29	13.24
Decision to pass	88.52	22.27
Decision to dribble	89.87	15.98
Decision to make a move without the ball	78.64	29.15
Disassemble and penetrate the defense:		
Decision to pass	78.20	27.0
Decision to dribble	76.42	30.62
Decision to make a move without the ball	77.94	23.33

Based on research findings, we believe that through a learning approach using small side games, there is a tendency that allows students to make more decisions and carry out actions when passing. Through this approach, some students are required to be able to adapt to various conditions that have been modified in a variety of predetermined exercises (Práxedes et al., 2018). All the tasks given, obviously, resemble the actual situation when competing in a football game. This really allows players to become better decision-makers during practicing (Davids et al., 2013). Since tactical issues determine how well a technique performs, they should become guiding principles for development (Gutiérrez et al., 2014). In addition, the advantages of TGfU learning for students are their ability to learn mentally, physically, and acquire life skills by involving them in small groups, which can change their activities to be more meaningful (Bracco et al., 2019).

The results of testing the hypothesis show that training in small-sided games has a different effect on skills in playing football (especially in passing and dribbling techniques). Small-side games can be a fun methodological tool for teaching strategy (defence and attack) (Fernández-Espínola et al., 2020) and encouraging players to shift into better and more structured positions (Coutinho et al., 2019), so that they realize that they are playing as a team. In our research, each player was given the maximum opportunity to

touch the ball twice because of passing, while dribbles were limited to three touches, so that each team was only given the opportunity to pass six times and dribble nine times. If the rules set by the teacher or coach are violated, possession of the ball is given to the opponent. Therefore, each team tries to enter the ball under the agreed-upon rules of the game. The purpose of the given passing and dribble limits is to train students (athletes) to think hard and be able to decide what to do, so that they will be trained to make decisions and execute the results of the decisions that have been made (choices to pass or dribble). It could be argued that learning and training should incorporate more of a sense of play. Guided play has been proposed as an integrative approach for thinking about learning as a child-led, adult-assisted playful activity (Yu et al., 2018). The model created will also have an impact on students' cognitive, emotional, and psychomotor learning outcomes and higher-order thinking skills (Nopembri et al., 2022).

In addition, teachers are also required to be more creative and innovative in designing learning through various kinds of interventions given to students. One way is to use a small-side-games approach. From the scenarios that have been defined in this study, we do not focus only on skills in playing football; psychology, self-confidence, fun, cooperation, and courage to face challenges are also our focus. As stated by Arias-Estero et al. (2020), in designing interventions for TGfU, practise volume should not be the only major factor taken into account. Students participate with the intention of preparing themselves for life in the larger community as they collaborate to create and take responsibility for their games (Butler et al., 2014). The use of tactical games, especially TGfU, can also improve students' metacognitive behaviour (Chatzipanteli et al., 2016). Many children experience an increase in their motivation, engagement, and activity level in learning TGfU (Dimmick, 2022). Compared with conventional methods, TGfU can gradually improve students' academic performance, physical fitness, and enjoyment (Elumalai et al., 2022), and students' motivation (García-González et al., 2020). The importance of using educational models such as TGfU to help students improve their ability to analyze game scenarios and refine their tactical reasoning (Harvey et al., 2020). Another thing is that it has the potential to change sports culture by promoting lifelong participation in physical activity (Harvey & Jarrett, 2014; Jarrett et al., 2014).

On this basis, our research can contribute to the development of literature related to how interventions are given to students to improve their ability to play football through various interventions and variations using small side games. The key to achieving peak performance for a player is using training properly by paying attention to training techniques, training patterns, training concepts, and training norms, as well as various psychological touches from the teacher or coach so that students or athletes can be comfortable, happy, and serious. It can carry out every instruction or intervention assigned to him. The values in the mini-games in the TGfU approach can have a good impact on the attitude of interpreting defeat or victory in games, and students enjoy them (Nathan, 2016).

In the following discussion, we will explore the potential benefits of creating diverse learning scenarios and adapting assignments to meet student needs. We will examine how these strategies contribute to student motivation, perceived competence, and attitudes towards sport. Additionally, we will delve into the effectiveness of the TGfU approach in improving game performance and decision-making efficiency. By understanding these concepts and their implications, educators can gain valuable insights into designing physical education programs that foster student engagement, skill development, and enjoyment.

CONCLUSION

TGfU is an alternative learning model that has proven effective for increasing student independence (making decisions and executing decisions that have been made) in physical education learning, especially through simple football games. This study conducted an intervention on playing skills (passing and dribbling) in a sample of individuals and measured their decision-making ability and execution performance. The experimental group showed a greater improvement in decision-making ability for passing and dribbling compared to the control group. Additionally, the experimental group showed a significant improvement in execution performance for passing but not for dribbling. The study also identified that a majority of the sample was able to control the ball and penetrate the opponent's defence.

One limitation of the study is that the sample size was relatively small, which may limit the generalizability of the results to other populations. Additionally, the study only focused on two specific playing skills, and future research could explore the effectiveness of interventions on other skills. The contribution of the study is that it highlights the importance of interventions for improving playing skills and decision-making ability in sports. This information can be useful for coaches and trainers in developing effective training programs. Future research directions could include expanding the sample size, exploring the effectiveness of interventions on other playing skills, and investigating the long-term effects of these interventions on performance. Additionally, future research can explore the impact of individual differences (such as age or skill level) on the effectiveness of interventions.

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CONFLICT OF INTEREST

All authors declare that there is no conflict of interest in this study.

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