Carmen Barquero-Ruiz, María T. Morales-Belando & José L. Arias-Estero (2021) A Teaching Games for Understanding Program to Deal With Reasons for Dropout in Under-11 Football. Research Quarterly for Exercise and Sport, 92:4, 618-629.

To link to this article: https://doi.org/10.1080/02701367.2020.1759767

A Teaching Games for Understanding Programme to Deal with Reasons for Dropout in Under-11 Football

Abstract

Young players report that they dropout of organised football due to excessive emphasis on technical execution, low success, and the lack of autonomy and motivation experienced by players during training sessions. **Purpose:** To determine whether a TGfU intervention during a youth football programme led players to improve in variables related to dropout. That means, tactical-technical competence (decision-making, skill execution), success (successful game performance), autonomy (number of decisions made, player autonomy, number of game involvements, player participation), and motivation (enjoyment, intention to be physically active). **Method:** Twenty under-11-players and two coaches were recruited from 17 clubs. A pre-test-post-test design with a multi-method approach was used. Coaches were trained and mentored in TGfU. Data were collected using Game Performance Assessment Instrument, enjoyment and intention to be physically active scales, and two focus groups with the players and the coaches. **Results:** Players improved in decision-making, skill execution, successful game performance, number of decisions made, number of game involvements, and intention to be physically active ($p < .05$). Participants attributed the results to the TGfU pedagogical features emphasised during the coaches' training and mentoring. **Conclusion:** Considering the reasons for dropout in football, in terms of excessive emphasis on technical execution, low success, and the lack of autonomy and motivation experienced by players, TGfU could be a useful pedagogical approach for teaching-learning organised youth football. The TGfU pedagogical features emphasised during coaches' training and mentoring could be crucial to obtain these results due to they were the sub-themes highlighted during the focus groups.

Keywords: youth football; coach education; sport pedagogy; teaching-learning contexts

A Teaching Games for Understanding Programme to Deal with Reasons for Dropout in Under-11 Football

Football in general is the sport with the greatest social impact and the most widely practised in an organised form by adults and children around the world (Fédération Internationale de Football Association, 2017). Despite this, it is one of the organised youth sports with the highest dropout rate between ages 9 and 13 (Møllerløkken, Lorås, & Pedersen, 2015). This is mainly due to excessive emphasis on technical execution, low success, and the lack of autonomy and motivation experienced by young players during training sessions (Deprez, Fransen, Lenoir, Philippaerts, & Vaeyens, 2015; Gjesdal, Wold, & Ommundsen, 2019; Møllerløkken et al., 2015, 2017; Quested et al., 2013; Smith, Quested, Appleton, & Duda, 2017). Coaches are responsible for creating a learning environment that resolves these boundaries (Fenton, Duda, & Barrett, 2016). However, they are often not able to do this due to a lack of pedagogical skills, even if they have extensive sporting experience or coaching badges (Møllerløkken et al., 2015; Stonebridge & Cushion, 2018). The teaching-learning pedagogical approach used by football coaches largely influences young players' reasons for dropout (Møllerløkken et al., 2017; Stonebridge & Cushion, 2018). There is therefore, justification in exploring and using an approach that leads to the ongoing pedagogical education of youth football coaches.

Literature on coaching education has reported that youth football coaches normally used traditional or coach-centred approaches characterised by a direct and prescriptive coaching style (Partington & Cushion, 2013). They hardly ever asked the players questions to promote understanding and when they did so, the questions were ambiguous and not context-bound (Ford, Yates, & Williams, 2010; Partington & Cushion, 2013). Moreover, players spent more time practising drills (65%-53%) than game forms (35%-44%; Ford et al., 2010; Partington & Cushion, 2013), although these percentages could be intervened by other variables when evaluating the quality of a session. For example, as O'Connor, Larkin, and

Williams (2018, p. 39) suggested, 'periods of inactivity should be considered to provide a clearer indication of the time within a structured coaching session players have to physically practice and develop skills'. Recently, O'Connor et al. (2018) found an increase in players' game form practising time (40.9%) in comparison with their time practising drills (22.3%). However, training sessions still followed a traditional technique-based approach, because players first had to reproduce the technical execution and then, they had to perform game form successfully, using the previous reproduced techniques. Furthermore, players were inactive for much of the time (31%), although 25% of time was spent in necessary activities during training, as freeze in position or player huddle for providing instruction or feedback.

Considering the sport coach as an educator (Jones, Edwards, & Viotto, 2016), sport teaching in physical education and sport coaching have a similar focus on pedagogy (Light & Harvey, 2017; Pill, 2012). Although the aim of coaching is to improve performance, from a pedagogical point of view it is not contrary to foster an enjoyment of learning and a development of social skills (Light & Harvey, 2019). From this perspective, it is reasonable to apply Teaching Games for Understanding (TGfU) in the sport context, as it was born in the British school but influenced by works carried out in sports coaching contexts (Bunker & Thorpe, 1982). TGfU was a reaction against a physical education environment characterised by less skilful students, low success experienced by a large percentage of learners, teacher-dependent performers, and uncontextualised drills. In contrast, the implementation of TGfU means that students learn actively when, where, how, and why to use the techniques in game forms, and as a consequence, they are successful and motivated (Wang & Wang, 2018).

From constructivist theories, players could learn to build actively new conscious knowledge based on their initial knowledge in relation with the environment (Kirk, 2017; Kirk & MacPhail, 2002). In TGfU, the understanding is crucial for developing 'game intelligence' as a result of learning. Furthermore, a key influence on learning is making teaching explicit and purposefully directed (Harvey, Pill, & Almond, 2018). In this sense, learners need to be active

and autonomous, being protagonist of their own learning, asking questions, and solving problems by themselves (Pope, 2005). Learning explicitly from previous knowledge fosters perceived competence. When players have to solve problems they become more autonomous. Competence and autonomy are predictors of enjoyment, motivation and intention to be physically active (Deci & Ryan, 1985).

Since TGfU emerged in the 80s, there has been a large increase of theoretical literature supporting the approach's implementation, advantages, and benefits (e.g., Harvey, Cushion, & Massa-González, 2010; Memmert, 2005). In addition, several TGfU interventions were carried out in football coaching contexts. Harvey et al. (2009) showed a higher perception of learning for boys in comparison to girls. Harvey, Cushion, Wegis, and Massa-Gonzalez (2010) reported more improvements in high school inexperienced players (skill execution, cover, adjust, game performance, game involvement) than in experienced ones (adjust). Recently, Práxedes, Moreno, Sevil, García-González, and Del Villar (2016, 2017) found improvements in player' decision-making and skill execution when passing and dribbling from organised youth football context. However, although the analysed variables (decision-making, skill execution, successful game performance, autonomous activity, physical activity, enjoyment, and intention to be physically active) are related to dropout (Bunker & Thorpe, 1982), none of the previous studies have been concerned about that perspective.

In short, as the reasons for which the TGfU was devised coincide with reasons for dropout in youth football, TGfU may be helpful to deal with these reasons. Consequently, this work is the first pre-test-post-test study using a multi-method approach conducted in an organised youth football context. It aims to determine whether a TGfU intervention during a youth football programme led players to improve in variables related to dropout. That means, tactical-technical awareness (decision-making, skill execution), success (successful game performance), autonomy (number of decisions made, player autonomy, number of game involvements, player participation), and motivation (enjoyment, intention to be physically

active). The first hypothesis was that the players would improve their tactical-technical awareness, success, and autonomy, and the second hypothesis stated that they would also improve their motivation.

Method

Participants

Between May and June, players and football coaches were recruited to participate in a football programme. The first author screened all interested participants for eligibility using a standardised script and email message. Eligible players were required to be aged 8-10 years, intend to attend the programme for all five days, have similar previous practice experience in football (2 years, 3-4 days/week, 5.5-7 hours/week), and be playing at the same level (first division at local level). Coaches were required to possess a sport science degree, football coaching credentials, have previous experience coaching youth football teams (> 5 years), and be coaching an under-11 football team at that time. They were informed that they would not receive payment but they would be trained in a teaching-learning approach to teach football. Players and coaches did not have prior knowledge of the TGfU approach. Of the 32 interested players, 20 were selected (10 girls and 10 boys, M_{age} = 9.74 years, SD_{age} = .79). They had 2.73 years (*SD* = .10) experience practising organised football. On average, they practised 3.65 days (*SD* = .48), for 5.90 hours (*SD* = .6) per week. On the weekends, they played a game. All of them were born in Spain and had a European cultural background. The players came from 17 different clubs. Of the eight interested coaches, only two were selected (male, aged 29 and 33 years). They had more than six years experience in organised youth football. All players, parents, and coaches were informed of the protocol; parents and coaches signed an informed consent document before the investigation, and players agreed to participate. Players and parents were blinded to the study aim, but the coaches were necessarily informed about it. The main author's University Research Ethics Committee approved the study, which was performed in accordance with the Helsinki Declaration.

Design

The design was pre-test-post-test, using a multi-method approach to evaluate the effects of a TGfU intervention programme on variables related to dropout. That means, tactical-technical awareness (decision-making [DM], skill execution [SE]), success (successful game performance [SGP]), autonomy (number of decisions made [NDM], player autonomy, number of game involvements [NGI], player participation), and motivation (enjoyment [ENJ], intention to be physically active [IPA], Table 1). All these variables were assessed quantitatively and qualitatively, except for NDM and NGI that were only assessed quantitatively and player autonomy and player participation that were only assessed qualitatively. Quantitative data were collected from players at pre- and post-intervention (first and last days, respectively, Figure 1), whereas qualitative data were collected from players and coaches at post-intervention. Players and coaches were randomly assigned to two practice groups, made up of 10 players and one coach. In order to minimize the clustering effects associated with a player having the same coach and practice group in every session throughout the program, simple randomization was carried out by randomly assigning each player to a different practice group and coach for each session. The third author generated the random allocation sequence through a computer-generated algorithm, and the first author assigned the participants to the groups.

Procedure

Design of the sessions. Each session was contextualised based on a principle of play, which allowed us to establish the session's goal (Morales-Belando, Calderón, & Arias-Estero, 2018; Wade, 1998). The tactical and technical contents, as well as the tasks, questions, pitch spaces, number of players, and remaining rules were aligned with this session goal. This is, they were designed to create a comprehensive and complex challenge, but adapted to the players (see the entire sessions' description in Figure 1). For example, in the first session, the principle of play was maintaining possession of the ball. According to this, the players should understand that they would maintain ball possession when passing and know what to do after

passing the ball (tactical content). Then, they had to learn how to execute the most effective technique in each game situation (technical content). That is passing the ball using the inside of the foot and the foot's sole facing the target. Consequently, game forms were designed with more attackers, larger pitch spaces, questions related to understanding where, when, what, why, and how to pass, and other rules to favour the execution of passes (e.g., forbidden to dribble).

Specifically, the sessions followed the five tasks proposed by Metzler (2005). In 'game form', players practised decision-making in a much constrained game form, using functional and structural modifications (e.g., kind of defences, forbidden game actions, value of the goals, size of the pitches). In 'teaching for understanding', they reflected on what they had to do and why through coaches' questions. In 'drills for skill development', players practised their technical execution. In 'return to game form', they performed a similar task to the initial one, but less constrained, using structural modifications (e.g., value of the goals, size of the pitches). Finally, in 'review and closure', the players again reflected, but on the integration and understanding of decision-making and skill execution (Figure 1).

Coaches' training in TGfU. The second and third authors trained the coaches in TGfU for 2 hours per day for 15 days (a total of 30 hours) over one month, following five procedures. First, they explained the pedagogical features of TGfU (Figure 2), the coaches' expected behaviours (i.e., asking questions, posing problems, setting exploratory and discovery tasks, helping children become independent learners, enabling all the children to be successful, developing skilfulness and fostering understanding), and the players' expected behaviours (i.e., playing an active role, wrestling with problems, proposing solutions, exploring, answering questions, and carrying out ideas). Second, together with the coaches, we designed six pilot sessions aligned with Figure 1 and 2. Third, each coach conducted the pilot sessions with their own teams, and these were filmed. Fourth, using the footages, together with coaches, we checked coaches' and players' behaviours in comparison to those expected and we analysed the causes of the

mistakes detected based on the pedagogical features (Figure 2). Finally, the sessions were improved based on the mistakes observed. Coaches had time to reflect on their training sessions, questioning, and planning during each coach training session. Furthermore, in all the sessions, the authors emphasised that they should understand the pedagogical features of TGfU (Figure 2). The authors mentored the coaches during their training and intervention periods, providing feedback on TGfU pedagogical features and clarifying their doubts at the end of each day.

Validating the TGfU sessions. Two blinded TGfU experts were asked to determine quantitatively (on a scale from 1 to 5) and qualitatively whether the sessions were designed in accordance with TGfU pedagogical features (Figure 2). They were authors of renowned prestige with an international publication record on TGfU. The two experts rated all the features with 5. Later, we read and contrasted the experts' suggestions about the TGfU features and we improved the aims, writing them operatively. In fact, we increased the amount of questions, changed their order, and adapted the language used.

Intervention. The football programme took place during the school vacation period for five consecutive days between July 5 and 10. The two coaches implemented a total of six sessions (plus two pre-test-post-test assessment sessions on the first and last days, respectively) following the same methodology, aims, contents, and remaining session features described (Figure 1). Each day included two sessions (90 minutes each), held in the morning (9:00 to 10:30) and afternoon (18:00 to 19:30), except for the first and last day for data collection. The players began 1 hour earlier to perform a standard football warm-up and finished 30 minutes after doing the stretching exercises. The players were only physically inactive during the explanations of the tasks and in the tasks 'teaching for understanding' and 'review and closure' (5-7 minutes each). The time of effective practice was 20, 15, and 25 minutes in tasks 'game form', 'drills for skill

development', and 'return to game form', respectively. The sessions, designed together with the coaches during their training period and validated by experts, were applied just like they were designed.

Verifying the TGfU intervention. We used two procedures to verify that the coaches applied the sessions following the nine TGfU pedagogical features (Figure 2). First, we observed all the sessions in vivo. Second, another TGfU expert researcher, blinded to the study aim, observed the footages of the sessions on the same pedagogical features (Figure 2). We observed that only one coach did not achieve two features in one session. In particular, the coach forgot to make some questions to guide discovery answers and did not allow every player to propose answers. In the remaining sessions, they followed all the features. The TGfU expert confirmed that he observed all nine pedagogical features in all the sessions.

Data Collection

DM, SE, SGP, NDM, and NGI. Each player was recorded for two halves of 10 minutes each, at pre-test-post-test assessments, playing a game of 5 vs. 5 on a 45x25 m practice area. Coaches were not allowed to comment during the games. This game form was selected on purpose because players were already familiar with this activity. We used the Game Performance Assessment Instrument (GPAI; Oslin, Mitchell, & Griffin, 1998) to assess appropriate and inappropriate decision-making, and correct and incorrect skill execution of each game player's actions (Table 1). From these data and in accordance with Oslin et al. (1998), we obtained DM, SE, SGP, NDM and NGI (see formulas in Table 1). The second and third authors trained two assistant researchers, blinded to the study aim but with experience using GPAI, for 25 hours until they learned to observe the footages of the pre-test-post-test games. Both observers assessed all the players in each one of the assessments (pre-test-post-test). Observation was systematic because they assessed all the players' actions. The observers added the number of

appropriate and inappropriate decisions, and correct and incorrect skill executions. Adequate decisions included making appropriate choices about what to do during the game. Correct skill executions corresponded to an efficient performance of the selected skill (Table 1). The observation reliability was between 81.50% and 93.70% of agreement (*ICC* > .93).

Enjoyment. Players completed the enjoyment factor of the adapted physical activity enjoyment scale (Arias-Estero, Alonso, & Yuste, 2013). This instrument has three items referring to enjoying this game (Cronbach's α = .97): 'I enjoyed practising football very much'; 'practising football was fun'; and 'I would describe football as very interesting'. Agreement with the items was rated on a 5-point Likert-type scale, ranging from 1 (strongly disagree) to 5 (strongly agree). Ten minutes after the end of the pre-test-post-test games, the players responded for 5 minutes.

Intention to be physically active. Players completed an adapted intention of being physically active scale (Arias-Estero, Castejón, & Yuste, 2013). This instrument has five items referring to the intention to continue playing football in the future (Cronbach's α = .96): 'I am interested in developing my physical fitness by practising football to feel good'; 'outside of the programme, I like to practise football'; 'after I finish the present programme, I would like to take part in football club training'; 'after I finish the present programme, I would like to be physically active practising football'; and 'I often practise football in my free time'. Agreement with the items was rated on a 5-point Likert-type scale, ranging from 1 (strongly disagree) to 5 (strongly agree). The players responded for 5 minutes after completing the previous questionnaire.

Players and coaches' perception. We conducted two focus groups at the end of the post-test assessment, one targeting the players (four groups of five players each) and the other targeting the two coaches. These focus groups were done to corroborate the information obtained from the quantitative variables at the post-test assessment.

However, while the questions to explore their perceptions regarding DM, SE, SGP, ENJ, and IPA referred to the descriptions of the quantitative variables, we questioned about player autonomy (NDM) and player participation (NGI) to explore how much the coaches promoted being autonomous by guided discovery during sessions and the amount of players' involvements within sessions, respectively (see Table 1 and Figure 3). The logic of the relationship between NDM and player autonomy and NGI and player participation is as follows. If players are trained under conditions that put them more often in a position to make decisions (what was analysed as player autonomy) and be involved (what was analysed as player participation), they will make more decisions (what was analysed as NDM) and be more involved (what was analysed as NGI) during assessment games. Hence, participants were asked questions relating to the broad categories of DM, SE, SGP, player autonomy, player participation, ENJ, and IPA (Figure 3). The main author asked questions and digital audio-recorded the interviewees' perception, the reason for it, and an example. Although all focus groups addressed the same variables, the focus of questions and the language differed depending on the interviewee (i.e., for players: 'Do you think you are going to keep playing football after the programme? Why? Give an example'; for coaches: 'Do you think the players are going to continue playing football after the programme? Why? Give an example'). The duration of the players' focus groups was 90 minutes, and of the coaches' focus group, 40 minutes.

Data Analysis

Statistical analysis of the quantitative data was conducted using SPSS v. 22.0. We determined the normality of the data through the Kolmogorov-Smirnov test. We used *t*-tests to explore the efficacy of the intervention on pre-test-post-test differences. Statistical significance was set at $p < .05$. We calculated Cohen's *d* effect sizes and the coefficient of variation (*CV*). Qualitative data of players and coaches were analysed separately following Braun and Clarke's (2006)

stages. Information from the focus groups was transcribed verbatim by the second author. All transcribed information was cross-checked against the original recordings by the first author to ensure accuracy. The first author read all the data, participant by participant. After that, she descriptively coded the raw data line-by-line and incident-to-incident with an open and axial coding considering the pre-existing broader categories (DM, SE, SGP, player autonomy, player participation, ENJ, IPA). The second author did the same and, subsequently, they discussed the differences until reaching an agreement. They wrote memos during the coding process, which highlighted recurring themes (both across and within the pre-existing broader categories), clustered within sub-themes. Finally, the third author again performed all the previous procedures, and the three authors engaged in a reflective dialogue, seeking accuracy and reliability.

Results

The results showed statistically significant pre-test-post-test improvements in DM ($p < .001$), SE ($p < .001$), SGP ($p < .001$), NDM ($p < .001$), NGI ($p < .001$), and IPA ($p = .05$), but not in ENJ ($p = .124$) (Table 2). However, the results in ENJ were not worse after the intervention. The effect size was large in all the variables in which statistically significant differences were found and also in ENJ (Table 2). The *CV* was lower in the results after the intervention, suggesting that the players improved homogeneously. Data from effect size and *CV* confirmed that the improvements were significant in practical terms. The participants improved DM by .19 points, SE by .15 points, SGP by .17 points, NDM by 5.17 points, NGI by 10.37 points, ENJ by .18 points, and IPA by .33 points. The improvements after the intervention were extraordinarily high for NDM and NGI. The perceptions of the players and coaches were in line with the statistical differences found in the quantitative results in DM, SE, SGP, NDM, NGI, and IPA (Figure 3). Moreover, the participants made positive statements about ENJ, but they also highlighted the need to improve, which could be related to the absence of statistically significant differences in this variable, for example ‘In my club, we never play so many games,

and here, it was different. We need to train more'. The emerging sub-themes suggested that participants attributed the results to the TGfU pedagogical features emphasised during the coaches' training period, mainly concerning the use of (Figure 3): tasks that were active, exploratory, and adapted to players' ability level ('I think that they were autonomous because we did not tell them what to do. They needed to experiment and decide'); modified games ('They were successful because the rules favoured the attackers or the defenders depending on the purpose of each task'); and tactical and technical contents aligned based on the principles of play ('They have improved the technique and, more importantly, playing and understanding why to use these techniques, for example, when dribbling with small steps to progress').

Discussion

The purpose of this study was to determine whether a TGfU intervention during a youth football programme led players to improve in variables related to dropout. That means, tactical-technical awareness (DM, SE), success (SGP), autonomy (NDM, player autonomy, NGI, player participation), and motivation (ENJ, IPA). The results ratified the first hypothesis, given that the players improved in DM, SE, SGP, NDM, player autonomy, NGI, and player participation. On the contrary, the second hypothesis was not completely met because, although the results showed statistically significant improvements in IPA, this did not occur in ENJ. However, the participants perceived positive results about ENJ and the rest of the variables. The results of this study were similar to those of previous studies of TGfU interventions, given that participants also improved in DM (Práxedes et al., 2016, 2017), SE (Harvey et al., 2010; Práxedes et al., 2016, 2017), SGP (Harvey et al., 2010) and NGI (Wang & Wang, 2018). Furthermore, this work was the first one to evaluate NDM and player autonomy, reporting positive results. As the participants pointed out, the improvements could be due to the alignment of the contents, as well as the tasks, questions, pitch spaces, number of players, remaining rules, and the goal of the session on the principles of play (Figure 1). These pedagogical features were underlined during the coaches' training in TGfU. One player

highlighted ‘We had to discover what was best and then answer the coach’s questions’. Along the same lines, one coach mentioned ‘Really, with the rules, the questions, and the challenges proposed during our training, it was not necessary to tell them any more’. Alignment based on the principles of play allows players to perform successfully according to each game situation, participating autonomously in an adapted context, and consequently being motivated (Morales-Belando et al., 2018).

The improvements in DM could be because one of the TGfU features is wrestling with game context problems to learn how to solve them autonomously (Bunker & Thorpe, 1982). As expressed by the participants, the kind of tasks and their structure, the autonomy provided, together with the decrease of the number of players, could be a key to foster understanding ‘I have learned to observe where my teammates were placed because I practised it in the tasks and then the coach asked us about it’, ‘The players had learned that they had to observe which player to pass before doing so, because they practised it in game forms and then they had to know how to answer the questions’. This session structure would have favoured the construction of new learning by linking the players’ past experience and knowledge with new ones in a process of adaptation to change (Harvey et al., 2010; Kirk & MacPhail, 2002). When the tasks allow a process through which learners actively make sense of new information, using for example, game modifications, challenges or questions, the new knowledge is much more meaningful (Koekoek, Van Der Kamp, Wallinga, & Van Hilvoorde, 2014). Lastly, the small-sided games would have allowed players to perform more game actions because they had more time and fewer spatial constraints (Morales-Belando et al., 2018).

As the coaches pointed out, the improvements in SE could be due to using TGfU, where technical execution is not neglected but is developed after players understand the game’s tactics ‘The passes were more effective because their body was oriented toward the teammate, and this is because they understood that they had to keep the ball’, ‘They have improved the technique and, more importantly, playing and understanding why to use these techniques, for

example, when dribbling with small steps to progress'. However, this does not happen only by playing more game forms, but instead, by relating decision-making and technical execution. This relationship is called alignment, which is based on the principles of play (Wade, 1998). Therefore, from a principle of play, the tactical contents and their related technical content were developed (Figure 1). Alignment based on the principles of play allows the players to make appropriate decisions and execute correctly according to each game situation, understanding the relationship between the two game performance components (Morales-Belando et al., 2018). In this sense, the players indicated that they understood how to execute a correct technique thanks to the coaches' questions 'At the end of the questions, I knew that if I crouch, I can run faster to intercept passes', 'We've learned because the coaches asked us how we had to do things, and we told them'. The coaches confirmed that statement 'Through the questions at the end of the session, they understood why to perform the technique they practised'. Questioning is essential when using TGfU to let children actively and explicitly learn to play through game forms. Questions are the guiding tool that coaches should use to help players to become skilful within game play, developing flexible skill execution and rich decision-making capacity (Práxedes et al., 2016). Therefore, questions in 'teaching for understanding' and 'review and closure' were planned based on players' expected behaviours in 'game form', 'drills for skill development' and 'return to game form' to foster explicit understanding. Consequently, players had to think about game problems in their previous performance, through their next performance, and reach a final conclusion. In other words, they had to actively reflect, based on the principles of play.

The improvements in SGP were the result of a larger number of appropriate decisions and correct skill executions. In other words, players become 'thinking players' (Kirk, 2017) because they knew where, when, what, why, and how to perform. One player said 'I place myself differently, depending on whether the player whom I am defending is carrying the ball or not'. In line with that, one coach commented 'They knew where to go in the field to steal the

ball because there was a rule'. As the coaches and the players themselves indicated, this could be due to the fact that the tasks were designed deliberately using rules so the desired tactical behaviours would emerge 'The rule of the triangle helped me to learn how to defend', 'They were successful because the rules favoured the attackers or the defenders depending on the purpose of each task'. Based on TGfU pedagogical principles, coaches can modify the game to enable maximum successful practice opportunities. In this sense, functional modifications allow achieving the expected behaviour to a greater extent than do structural modifications (Morales-Belando et al., 2018). For this reason, we made functional and structural modifications in the 'game form' task and only structural modifications in the 'return to game form' task. Hence, players played within an easy decision-making setting at the beginning, whereas they played within a less constrained (more difficult) setting at the end of the sessions. Consequently, the last game form allowed the players' personal interpretation based on their previous experiences throughout the session.

The increase in NDM, player autonomy, NGI, and player participation usually occurs when tasks are designed to match players' ability level, using small-sided games, and having rules to favour their active participation (Wang & Wang, 2018). The players remarked that they were always playing, exploring, and making decisions because all the tasks were games with few players 'Here, it was different because we always played in small teams. In my club, we work in pairs and we pass the ball to each other', 'We practised more than on other occasions. We always played a game with few players'. The coaches commented that the tasks were designed using small-sided games with rules to ensure that everyone had the greatest participation 'I would say that, with TGfU, the players participate more than in my training sessions in my habitual team, because they played small games', 'We designed the tasks with few players so the players will practice autonomously and be engaged'. In this sense, it was showed that a coach-teacher supporting style correlates positively with players' perceptions of autonomy (Fenton et al., 2016; Gjesdal et al., 2019). In particular, alignment based on the

principles of play allowed the coaches to pose problems and set exploratory and discovery tasks, so that the players played an active and involved role (Wang & Wang, 2018). Indeed, when the players are 'thinking players', they perform more autonomous game actions (Kirk & MacPhail, 2002).

The quantitative results in ENJ could not be statistically better mostly for two reasons. First, these were experienced players, which could generate mainly two effects. On the one hand, the players initially scored high values, and those scores remained high at the end because the players already enjoyed playing football. On the other hand, although they enjoyed themselves, they were also made aware of new skills that they had to improve, tactically speaking 'I had fun [enjoyed] because we played football, but I also learned that I have to think when to pass or shoot'. This was also observed by the coaches 'I think that they had fun [enjoyed], but it is as if this way of training makes them to realise that they have to improve'. Players' and coaches' perceptions seemed to be explained because competence and learning are important elements in children's definition of fun (Visek et al., 2015). Second, the players participated voluntarily in an extracurricular context, in contrast to what occurs in physical education. Both reasons influence the players' high scores, which were maintained (Moreno, Hellín, González-Cutre, & Martínez-Galindo, 2011). Nevertheless, IPA improved after the intervention, and the players expressed their interest in continuing to practise football 'Of course I want to keep on playing football, because I have a lot of fun', 'I have to keep on training to improve everything that we have learned on this programme', as was also found by Morales-Belando et al. (2018). In contrast, Franco and Coterón (2017) observed no improvements after an intervention to support the basic psychological needs. The differences regarding the former study suggest that the modification of the teaching approach should not only be carried out in the coaches' and players' role, but also in the sessions' aims and tasks. Hence, the improvements in the present work could be due to the association between IPA and

autonomy, autotelic experience, and the balance between challenge and skills (Franco & Coterón, 2017).

In this study, the TGfU pedagogical features emphasised during the coaches' training and mentoring were key to promote the results (Figure 2), as emerged in the participants' comments (Figure 3). These coincided with the non-negotiable features proposed for TGfU by Kirk (2017), together with aligned tasks based on the principles of play: player-centred pedagogy, the use of modified games, and the setting of problems to be solved. Our findings are supported by recent research that suggests the importance of the pedagogical coach education to create environments that promote players' tactical awareness, success, autonomy, and motivation (e.g., Gjesdal et al., 2019; Morales-Belando et al., 2018; Stonebridge & Cushion, 2018; Wang & Wang, 2018). Using TGfU, the coaches must hand over the protagonism of the training sessions to the players, even while being aware that this is not simple, given the nature of the dilemmas shown by coaches (e.g., Harvey, Cushion, & Sammon, 2015). The coaches must be protagonists during the planning of the training sessions, as well as during the process of guidance and organisation of the players' experiences during the sessions, using questions and feedback. Before that, coaches should possess deep football tactical knowledge and be educated in the TGfU pedagogical features. The governing bodies of football federations should invest in youth coaches' education in teaching-learning approaches, as shown in the present work, if they really want to contribute to reducing the dropout rate in organised youth football.

Limitations

The results should be interpreted with caution due to the quasi-experimental nature of the design and the lack of a control group. Consequently, there are many potential intervening variables that might influence the results. For example, players were enrolled in a more intensive regimen (8 sessions in 5 days vs. 3.65 sessions in 7 days), in a new venue (summer camp) with a new coach and were not at risk of dropout. In addition, the measures of DM, SE,

SGP, NDM and NGI only referred to in possession, which are a minority of game involvements. A better design might be with participants who dropped out and including a control group coached following a motor learning approach (McMorris, 1998). Such players should be identified according to their low scores in psychological questionnaires related to motivation, enjoyment, and intention to continue playing football in the future. Specifically, the control group should use more structured exercises, with isolated activities of skill training, without defensive players, omitting the TGfU pedagogical features.

Conclusion

This work is the first pre-test-post-test, TGfU intervention study using a multi-method approach, conducted in an organised youth football context, recruiting participants with similar features. From this experimental set-up, improvements were obtained in variables related to tactical-technical awareness, success, autonomy, and intention to be physically active in the future (pointed out as key reasons to deal with dropout). Based on these positive results, from players who were not at risk of dropout and taking into account the reasons for dropout, TGfU could be a useful pedagogical approach for teaching-learning organised youth football. The TGfU pedagogical features emphasised during coaches' training and mentoring could be crucial to obtain these results due to they were the sub-themes highlighted during the focus groups (Figures 2 and 3). Consequently, this study yields specific scientific knowledge on how to design training sessions based on the TGfU approach, which can help coaches to contribute to players' continued practising in organised under-11 football.

What does this Study Add?

This article is significant in that it is the first pre-test-post-test study using a multi-method approach conducted in an organised youth football context that aimed to determine whether a TGfU intervention during a youth football programme led players to improve in variables related to dropout. In addition, players and coaches were screened on purpose and they were randomly assigned to two practice groups. Simple randomization was carried out by randomly

assigning each player to a different practice group and coach for each session allowing minimizing the clustering effects associated with a player having the same coach and practice group in every session throughout the program. The design of this study is also unique in that it: (a) examined variables not tested until now, (b) in an organised youth football context, (c) during eight sessions, (d) involved more than one coach, (e) used a multi-method, quantitative and qualitative, approach in order to strengthen the validity of the findings, (f) provided detailed training in TGfU to the coaches, and (g) followed a perspective that contemplates that TGfU, as a teaching-learning approach, could be useful to deal with reasons for dropout in under-11 football, what has not been faced previously.

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Table 1

Criteria Used to Assess Decision-making and Skill Execution on the Game Performance Assessment Instrument

Game component and game action		Criteria	
		Appropriate or correct	Inappropriate or incorrect
Decision-making	Shot/Pass	- When attacker on-the-ball is close to the target and there are no opponents in-between.	- When attacker on-the-ball is far from the target and/or there are opponents in-between.
	Dribbling	- Attacking the goal when there are no opponents. - Placing oneself in a better position to pass/shoot.	- Attacking the goal when there is more than one opponent. - Placing oneself in a bad position that does not allow attacker on-the-ball to pass/shoot.
	Clearance	- Intercepting a shot. - Intercepting a pass when attackers are attacking the goal.	- When there is no pressure in the game situation.
	Tackle	- Removing ball possession or challenging the attacker on-the-ball when attacker on-the-ball is attacking the goal.	- Removing ball possession when the attacker on-the-ball is not attacking the goal and close to the attacker off-the-ball.
Skill execution	Shot/Pass	- Pushing the ball using the inside of foot and the foot's sole facing the target and reaching the target with the ball.	- Not pushing the ball using the inside of foot and the foot's sole facing the target and not reaching the target with the ball.

Dribbling	- Keeping the ball close to the feet.	- Separating the ball from the feet, exposing it to the opponents.
Clearance	- Hitting the ball with enough force to place it far from dangerous areas and free from attackers.	- Making a poor hit that does not allow one to place the ball far from dangerous areas. - Placing the ball in a dangerous area with many opponents.
Tackle	- Sliding the leg and contacting the ball to challenge the opponent's progression.	- Contacting strongly and directly with the opponent and not with the ball.

Decision-making = appropriate decision-making / inappropriate decision-making

Skill execution = correct skill execution / incorrect skill execution

Successful game performance = [decision-making + skill execution] / 2

Number of decisions made = appropriate decision-making + inappropriate decision-making

Number of game involvements = appropriate decision-making + inappropriate decision-making + correct skill execution + incorrect skill execution

Note. Decision-making was appropriate when it met at least one of the criteria. Skill execution was correct when it met all the criteria.

Table 2

Means, Standard Deviations, Coefficient of Variation, Significant Differences and Effect Size of the Variables at Pre-Test-Post-Test Assessments

Variable	Pre-test			Post-test			*t*	*p*	*d*
	M	*SD*	*CV*	*M*	*SD*	*CV*			
Decision-making	.28	.15	.54	.47	.12	.26	-4.77	.000**	1.625
Skill-execution	.27	.15	.56	.42	.09	.21	-3.24	.004*	1.443
Successful game performance	.27	.15	.56	.44	.10	.23	-4.02	.000**	1.570
Number of decisions made	11.88	1.99	.17	17.05	2.20	.13	-9.89	.000**	2.850
Number of game involvements	23.65	3.96	.17	34.02	4.43	.13	-9.92	.000**	2.848
Enjoyment	4.78	.46	.10	4.96	.09	.02	-1.62	.124	.756
Intention to be physically active	4.56	.40	.09	4.89	.03	.01	-1.72	.050*	1.772

Note. *M*: mean, *SD*: standard deviation, *CV*: coefficient of variation, *$p < .05$, **$p < .001$.

Figure 1. Features of the TGfU sessions. *The questions used in 'teaching for understanding' can be repeated if necessary.

Day/ Time	Session/ Principle of play	Tactical-technical content	1. Game form	2. Teaching for understanding	3. Drills for skill development	4. Return to game form	5. Review and closure*
1. AM	1. Pre-test	-	5 vs. 5; 45x25 m.	-	-	-	-
2. AM	2. Maintaining possession of the ball	- When and to whom passing. Game action after passing. - Feet position to be accurate.	3 vs. 2; 20x15 m; double score if the attacker on-the-ball passes to a teammate, then progresses to goal, and finally gets back the ball for a shot to the goal; compulsory man-to-man defence; forbidden to dribble.	What should you do after passing to a teammate? Should you stand still or should you move? Why?	Passing the ball using the inside of the foot and the foot's sole facing the target.	3 vs. 2; 25x20 m; triple score if the attacker on-the-ball passes to a teammate, then progresses to goal, and finally gets back the ball for a shot to the goal.	When should you pass to a teammate? Why? How should your feet face the target? Why?
2. PM	3. Winning the ball	- Distribution in the pitch to defend the passer and receiver. - Body position to react quickly.	2 vs. 3; 20x10 m; compulsory man-to-man defence and defensive help from the attacker on-the-ball; forbidden to pass to the nearest player or to the one who just made the pass.	Where should you be placed for defence from the attacker on-the-ball? And for defence from the attacker off-the-ball? Why?	Trying to intercept passes bending the knees to react quickly.	2 vs. 3; 20x10 m; double score if defenders intercept a pass.	Where should you be placed to win ball possession? How should your legs be positioned to react quickly? Why?
3. AM	4. Shooting on goal	- When and where shooting on goal. - Foot points of contact to be accurate.	3 vs. 2; 20x10 m; double score if the attacker on-the-ball shoots from a central pitch area; compulsory man-to-man defence; forbidden to steal the ball from the attacker on-the-ball on the centre.	What is the best area of the pitch to shoot on goal? Why?	Shooting using the inside of the foot and the foot's sole facing the target.	3 vs. 2; 25x10 m; triple score if the attacker on-the-ball shoots from the central pitch area.	When should you shoot on goal? How should you kick to score? Why?
3. PM	5. Defending the goal	- Placement in the pitch to defend the goal. - Body position to intercept shooting. Foot points of contact to clear.	5 vs. 5; 40x20 m; compulsory man-to-man defence; forbidden to pass to the player who just made the pass.	How close to the attacker on-the-ball should you be when he/she is going to shoot on goal? Why?	Trying to intercept shots facing the attacker on-the-ball. Hitting using the outside of the foot.	5 vs. 5; 30x20 m; double score if defenders intercept a shot.	Where should you be placed to defend the goal? How should you hit to clear? How should your body be positioned to defend the goal? And the points of contact to clear? Why?
4. AM	6. Attacking the goal	- When and where dribbling. - Kind of steps to dribble with close control.	6 vs. 4; 50x20 m; compulsory dribbling on the pitch sides; forbidden to steal the ball from the attacker on-the-ball on the pitch sides.	- On what area of the pitch should you dribble? Why?	Dribbling taking quick and small steps.	6 vs. 4; 55x20 m; triple score if the attacker on-the-ball shoots to the goal after dribbling on the pitch sides.	When should you dribble to attack the goal? What kind of steps should you take to dribble? Why?
4. PM	7. Challenging the opponents' progression	- Placement in the pitch to defend the opponents'	4 vs. 6; 35x10 m; compulsory man-to-man defence and defensive help from the attacker on-the-ball;	Where should you direct the attacker on-the-ball when he/she is	Trying to steal the ball making a slide tackling	4 vs. 6; 30x10 m; double score if defenders steal the ball from the	What should you do to hinder the opponent's progression?

		progression. When tackling. - Body position in tackling to steal the ball.	compulsory dribbling on the pitch sides; compulsory to steal the ball from the attacker on-the-ball on the pitch sides.	dribbling? Why?	with only one leg extended.	attacker on-the-ball on the pitch sides.	How should you tackle to challenge the attacker on-the-ball's progression? Why?
5. AM	8. Post-test	-	5 vs. 5; 45x25 m.	-	-	-	-

Figure 2. Pedagogical features of TGfU highlighted during coaches' training.

TGfU feature implemented
Structuring sessions tasks (game form adapted from real game, teaching for understanding, drills for skill development, return to game form, review and closure) to provide a direct bridge between tasks and full games.
Contextualising each session in one principle of play as the organising centre for learning tasks (maintaining possession of the ball, winning the ball, shooting on goal, defending the goal, attacking the goal, challenging the opponents' progression) to be skilful-into-the-game players with tactical sense.
Establishing technical and tactical aims and contents aligned according to the principles of play to develop players' tactical awareness and skills needed to perform in the game.
Playing small-sided games to improve players' involvement and enable appropriate decision-making.
Balancing between session task challenge and players' skill level to enable all the players to be successful.
Introducing rule modifications to promote the players' expected behaviours.
Using questions based on players' experiences in previous sessions' tasks to make players aware of their knowledge and foster their understanding.
Posing problems and setting exploratory tasks to allow players to wrestle with problems, explore and propose solutions.
Leading through guided discovery, using questions and game modification instead of direct instruction to help players become active and independent learners.

Figure 3. Example of players' and coaches' responses on each variable in the focus groups.

Variable	Participant/Perceptions
Decision-making	Players: 1. 'I have learned to observe where my teammates were placed because I practised it in the tasks and then the coach asked us about it'. 2. 'The coach did not tell us what we all should do in the game'. 3. 'It was easier to play than when there are more players'. Coaches: 4. 'The players had learned that they had to observe to which player to pass before doing so because they practised it in game forms and then they had to know how to answer the questions'. 5. 'There was considerable difference between the initial and the final answers because the order of the tasks allowed them to become more aware'. 6. 'Their decisions improved because there were fewer players in the game forms'.
Skill execution	Players: 7. 'At the end of the questions, I knew that if I crouch, I can run faster to intercept passes'. 8. 'We've learned because the coaches asked us how we had to do things, and we told them'. Coaches: 9. 'The passes were more effective because their body was oriented toward the teammate, and this is because they understood that they had to keep the ball'. 10. 'They have improved the technique and, more importantly, playing and understanding why to use these techniques, for example, when dribbling with small steps to progress'. 11. 'Through the questions at the end of the session, they understood why to perform the technique they practised'.
Successful game performance	Players: 12. 'The rule of the triangle helped me to learn how to defend'. 13. 'I place myself differently, depending on whether the player whom I am defending is carrying the ball or not'. 14. 'If we wanted to add more points, we had to run after passing and thus, we scored more goals'. 15. 'When I was dribbling the ball on the side, they did not take it from me'. Coaches: 16. 'They knew where to go in the field to steal the ball because there was a rule'. 17. 'They were successful because the rules favoured the attackers or the defenders depending on the purpose of each task'. 18. 'We made a great effort so that the tasks would be suitable to the players' level'.
Player autonomy	Players: 19. 'The coaches did not tell us what to do because they asked us what we had done after playing'. 20. 'Here, it was different because we always played in small teams. In my club, we work in pairs and we pass the ball to each other'. 21. 'According to the game, I must shoot, pass or dribble with the ball, and I have to do so without the coach telling me'. Coaches: 22. 'I think that they were autonomous because we did not tell them what to do. They needed to experiment and decide'. 23. 'The rules that were established helped them make better decisions freely'. 24. 'They were very autonomous. This has been a great effort for me because I'm used to always telling them what to do'. 25. 'Really, with the rules, the questions, and the challenges proposed during our training, it was not necessary to tell them any more'.
Player participation	Players: 26. 'We practised more than on other occasions. We always played a game with few players'. 27. 'I participated a lot because there were few of us on the team'. Coaches: 28. 'The players were always playing'. 29. 'I would say that, with TGfU, the players participate more than in my training sessions in my habitual team, because they played small games'. 30. 'We designed the tasks with few players so the players will practise autonomously and be engaged'.
Enjoyment	Players: 31. 'I had fun [enjoyed] because we were always playing, and I played with the ball'. 32. 'In my club, we never play so many games, and here, it was different. We need to train more'. 33. 'I had fun [enjoyed] because we played football, but I also learned that I have to think when to pass or shoot'. Coaches: 34. 'I saw they were happy and enjoying the game, but they have to keep practising in the game more to know how to play'. 35. 'This kind of training is fun [enjoyable], and that's what the children said'. 36. 'I think that they had fun [enjoyed], but it is as if this way of training makes them to realise that they have to improve'.
Intention to be physically active	Players: 37. 'Of course I want to keep on playing football, because I have a lot of fun'. 38. 'I have to keep on training to improve everything that we have learned on this programme'. 39. 'In my club, we train differently from how we trained here, but I want to keep on playing'. Coaches: 40. 'I think that everyone will go on training. They like football and here, they were very motivated'. 41. 'If football were trained like we've learned here, I'm sure that more children would practise football because, normally, they are not successful'.

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