

DUTCH ELITE YOUTH SOCCER PLAYERS' PERCEPTIONS OF A *TGFU*-MODIFIED GAME PRACTICE

PERCEPCIONES DE JÓVENES FUTBOLISTAS DE ÉLITE HOLANDESES SOBRE LA PRÁCTICA DE JUEGOS MODIFICADOS
ECD

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ABSTRACT

A game-based approach in physical education and sport settings focuses on the players' learning of tactical decision making. TGFU pedagogical principles provide teachers and coaches method to structure their players' decision making practices by reducing the demands of a complex game. The purposes of this study were (1) to examine youth elite soccer players' perceptions of practicing in a small sided game, and (2) to describe the process of implementation of a pedagogical intervention tool (Game Balance Analysis, GBA) and how it provides guidelines for the design of modified game practices. Two Dutch coaches and youth elite soccer players (N=17) of one team participated in the study. The draw, write, and tell method was used to elicit players' perceptions of learning of tactical decision making. During one soccer season, GBA was used to design learning objectives, playing scenarios, and constraints in small sided games. The results showed that the players were fully aware of what tactically can be learned in small sided games, but they also had contradictory perspectives to what they think that is important to learn.

ABSTRACT

El enfoque basado en el juego en Educación Física y en contextos deportivos se centra en el aprendizaje de la toma de decisión por parte de los jugadores. Los principios pedagógicos del modelo TGFU aportan a docentes y entrenadores las claves para estructurar las prácticas de toma de decisión a partir de la reducción de la complejidad de los juegos. Los objetivos del presente estudio fueron: (1) examinar las

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percepciones de jóvenes jugadores de fútbol de nivel élite, sobre sus experiencias en la práctica de juegos reducidos y (2) describir el proceso de implementación de una herramienta de intervención pedagógica (*Game Balance Analysis*, GBA) y las directrices aportadas a partir del uso de esta herramienta para el diseño de sesiones de entrenamiento mediante juegos modificados. Dos entrenadores holandeses y jóvenes futbolistas de nivel élite (N=17) de un mismo equipo participaron en el estudio. El método de dibujar, escribir y contar se utilizó para obtener las percepciones de aprendizaje de toma de decisiones tácticas de los jugadores. Durante una temporada, la GBA se utilizó para diseñar los objetivos de aprendizaje, los escenarios de juego, y las características de los juegos reducidos. Los resultados mostraron que los jugadores eran plenamente conscientes de lo que tácticamente se puede aprender en juegos reducidos, pero también mostraron puntos de vista contradictorios sobre lo que ellos piensan que es importante aprender.

KEYWORDS. TGFU; perceptions; soccer; nonlinear pedagogy; constraining games.

PALABRAS CLAVE. Enseñanza Comprensiva del Deporte (ECD); fútbol; pedagogía no lineal; modificación de los juegos.

1. INTRODUCTION

In the last ten years, there has been a mounting interest in nonlinear pedagogical approaches to enhance learning games in physical education (PE) and sport, in particular with regard to tactical decision making (e.g., Chow et al., 2007; Davids, Button, & Bennet, 2008). An important reason for this increasing awareness is that nonlinear pedagogical approaches emphasize that learners should search or explore solutions themselves, rather than teachers or coaches being overly prescriptive about what and how they must learn. Evidently, nonlinear pedagogy is becoming more relevant because it enhances intrinsic motivation and results of meaningful improvements in tactical skills (Renshaw, Oldham, & Bawden, 2012; Tan, Chow, & Davids, 2012). The nonlinear pedagogical approach provides insights that support teachers and coaches in how game practices can be structured for acquisition of tactical skills (Gréhaigne, Bouthier, David, 1997; Renshaw, Chow, Davids, & Hammond, 2010). It helps teachers and coaches to choose and use relevant pedagogical tools that, from a methodological viewpoint, contribute to curriculum development, adapted lesson plans, and long-term improvement of tactical complexity (Tan et al., 2012).

One nonlinear pedagogical tool is to tinker the practice constraints. In this constraints-led approach the acquisition of tactical skills is conceived as arising from the (interactive) influences of individual, environmental, and task constraints on the game (Davids et al., 2008, p. 114). This provides many ideas for designing rich learning environments in PE lessons and sport practices for manipulating constraints (e.g., adjustments in task, rules, field size and equipment) that benefits tactical learning. Yet, there is a paucity of research that examines how manipulating these constraints channel tactical learning without the teacher or coach being prescriptive. It is therefore difficult for practitioners to translate the theoretical nonlinear pedagogical

concepts into actual game practice, because there is a lack of knowledge about their application in the gym or on the playing field.

One possible application is the Teaching Games for Understanding (TGfU) model. TGfU provides operable concepts for developing game settings that are adapted to the players' learning needs (Bunker & Thorpe, 1986; Kirk & MacPhail, 2002; Oslin & Mitchell, 2006). One key aspect is the design of well-structured games (often reduced in game complexity) in which players have a considerable chance of making appropriate decisions (Harvey & Jarret, 2013; Oslin & Mitchell, 2006). In general, TGfU settings centralize decision making learning by using pedagogical principles such as game sampling (i.e., transfer of learning across games), representation (i.e., playing games with a comparable tactical structure), exaggeration (i.e., practice adjustments that emphasize a tactical problem), and tactical complexity (Griffin & Patton, 2005). Because of its focus on the learners' needs, it is important that teachers and coaches are aware of the learners' personal reference models (Gréhaigne, Richard, & Griffin, 2005). These include motivation, affect, and tactical knowledge. Accordingly, tactical decision making in small sided games (by which the complexity of the regular game is reduced) entails of asking players to make appropriate action choices by focusing on both (1) what to do, and (2) how to do in the game situation. Consequently, learners become fully engaged in solving tactical problems instead of focusing only on the learning of techniques or motor skills. The TGfU pedagogical principles, such as small sided games, provide learners a more constrained workspace for exploring tactical solutions in the game (Richardson, Sheehy, & Hopper, 2013). However, it is pertinent to also assess the learners' perception of the learning process, because their experiences may be a crucial aspect for achieving positive learning outcomes. Hence, this issue is important if players' perceptions (i.e., what they think and feel about their learning) influence this process as well (Koekoek & Knoppers, 2013). This presumes that players' perceptions in game learning are an invaluable source of information that should have consequences for the designing of the learning environments. We therefore address on players' perceptions and specifically focus on players' views and voices in a team sport and how they influence the learning of tactical skills.

2. THE ROLE OF PLAYERS' PERCEPTIONS IN LEARNING TACTICAL SKILLS

For several years, an important role has been given to players' perceptions of learning in PE and sports with a focus on engagement, meanings, and authenticity (Dyson, 2006; O'Sullivan & MacPhail, 2010). Particularly, the meanings of players about their own learning are preferentially and more widely being valued as an important indication for arranging effective learning environments (Brooker & Macdonald, 1999; Koekoek, Knoppers, & Stegeman, 2009; Lee, 2010; Rikard & Banville, 2006). For example, Streat and Holt (2000) asked youth soccer and hockey players as well as their coaches what they thought about the practices. The coaches had a preference for teaching isolated techniques instead of improving players' tactical understanding. The players, however, wanted to have fun by playing games instead performing of drills. The authors emphasized the discourse of coaches who think their players need to learn technical

skills (e.g., to improve their confidence) rather than give them space to learn in game contexts. The study also suggested that a TGfU approach may help children to become more involved in the game and increase feelings of control. Rather than a focus on drills, providing children the opportunity to restructure games may optimize the balance between motivational challenge and skill learning.

Only a few studies within the field of game-centered approaches have paid attention to the role of children's perceptions in learning. Pope (2005) found that feelings and emotions may shape decision-making skills. He contended that learning is guided by these affective elements, and that they often pilot the learner's decisions. It follows that in designing practice, children need to have a voice in participating, making decisions, and the possibility of learning from tactical views of the game by themselves. Perceptions of peers and social interactions also play a decisive role in learning games. Koekoek and Knoppers (2013) found that perceptions of children, who learned a modified baseball game in PE, changed through influences within the social context that depended on the composition of teams, the presence of recognizable performance goals in the game, and with whom they wanted to play. In a similar study, Light (2006) stimulated dialogue between children about their learning experiences by using drawings. This showed that the children perceived and valued interactions as an important part of learning. Although these aforementioned studies demonstrate the important influence of the social context, the learning objectives, and feelings of involvement, still relatively little is known about its role in TGfU modified game settings. The current investigation, therefore, is aimed to increase the knowledge base to better explain how players perceive learning in modified game settings and how this affect learning of tactical decision-making.

From this perspective, it is important that players' learning needs and perceptions guide to the design of rich learning environments. Accordingly, in modifying game structures coaches need to be creative in adjusting constraints that match the player's perceptions and tactical skill levels. *Game Balance Analysis* (GBA), which is fully consistent with a TGfU approach, is proposed as an appropriate pedagogical tool to achieve this. In GBA, the teacher or coach must modify a game such that it (1) provides insights in game play, (2) is appropriate to adjust game constraints, and (3) supports in adapting games to the players' tactical skill levels (Koekoek, Dokman & Walinga, 2014). Through exaggeration of the game particular tactical problems during play are emphasized, while the complexity of the game gradually increases. This aspect is useful in game centered approaches because it ensures that coaches modify the games according to the players' need in learning to make decisions. However, a difficulty in adjusting game forms is that coaches tend to make tactical instructions very prescriptive. These tactical instructions are often not aligned with the player's individual capacity. For example, the modification of small sided soccer games (e.g., overload 3 vs. 2) would not automatically enhance the tactical skills of all players (Holt, Ward, & Wallhead, 2006). Hence, the purpose of this study was (1) to explore youth elite soccer players' perceptions of practicing in a modified game (i.e., when they learn tactical skills) , and (2) to describe how GBA provides guidelines for the design and implementation of modified game practices that take the players' learning needs into

account. In particular, our exploration focuses on players' observations of how they think they learn decision making skills. Furthermore, we describe the process of experimenting with game constraints and gathering tactical learning objectives using GBA. Hence, these insights might expose trends in game practice modifications and accompanying instructions. As noted earlier, the non-linear pedagogy approach assumes a learner centered position in the acquisition of tactical skills. Consequently, through adjusting game constraints tactical learning occurs rather through self-organization and independent from the coach's verbal instructions.

3. METHODOLOGY

Context of the study

Most of the Dutch professional soccer clubs in the Netherlands have established a youth academy. PEC Zwolle is a professional soccer club that currently plays in the first national league ("Eredivisie"). The main purpose of the PEC Zwolle Youth Academy is to prepare young boys for being professional soccer players. Through facilitating practice and by working with high-skilled coaches, these players develop a broad spectrum of skills they will need as a professional player. Since an important goal of the club is to play soccer with a recognizable style, players are taught defensive and offensive game concepts that fits the club's playing philosophy.

The Youth Academy has nine youth soccer teams with children between seven to eighteen years. At the age of seven, children are selected from the regional partner soccer clubs or through regional youth tournaments to participate at one club practice session each week. After the children are nine years of age, they are selected and actually start playing until they are 18-19 years old. Once selected and 12 years old, the children take lessons at the same secondary school. This school facilitates an adapted educational program that support talented players in organizing their busy life. They adjust school schedules to fit soccer practice and matches. Furthermore, the school lessons are tailor-made to the players cognitive learning capacities. The staff of the Youth Academy monitors players' development on more than only soccer skills. Their support fits with a broader pedagogical perspective and ensures that the children are balanced with respect to school work and performance, soccer practice and matches, and physical load, and the private situation at home. Each youth team has a staff that consists of two coaches supplemented with a physiotherapist, team manager, and a team assistant.

Participants

Children of one youth team (N=17) participated in the study. They (boys, aged 11-12) played in the Dutch D-category and are club members for one to three years. At this age, the Academy increasingly emphasizes the development of players' tactical skills. Because these players already played a few years at the club, they were capable of telling in some depth about their learning experiences and feelings, and distinguish changes in game structure and concepts in the practice sessions during the season. Two soccer coaches of the Youth Academy of PEC Zwolle participated and were

member of the project group. These coaches had several years of experience as a coach of (professional) soccer youth teams.

Procedure

The project group was composed of two researchers and two coaches of the Youth Academy. This group worked together and organized meetings (approximately one meeting a week) to develop new ideas for game practices. Additionally, observations of practices and informal talks with the players, coaches, and staff members were used to support the innovations in game design.

The research included one soccer season plus a preparation period of four months. In its first stage, the two coaches were introduced to several concepts of game-centered approaches in the context of PE and sport. They also practiced with using the GBA tool to design games. In other words, the coaches were encouraged to change their custom habits in the way they structured games during practice.

Game Balance Analysis (GBA)

GBA consists of four steps that enable coaches to adjust and design several varieties of the game (Koekoek et al., 2014). Moreover, GBA allow us to describe the process of implementation of small modified games in the curriculum of the Academy. The four steps are as follows:

Step 1. Adjusting team compositions, field sizes, and rules to achieve engagement.

Coaches need to adjust the composition of teams to have similar skill levels as much as possible. At the start, the coach wants players to be engaged in the learning situation and prevent that they show a lack of motivation. For example, if a power play (overload) situation is practiced, the coach forms two equal teams and should choose the accompanying player (who plays with both teams when attacking) to have a skill level that complements the performances of the team. It is important that the introductory game meets the standards of the tactical skill levels of most of the involved players. To achieve this, the coach focuses on adjusting rules, field size, and equipment.

The central aim of this first step is initiating the game. Both teams should have the opportunity to explore several strategies and find as many tactical solutions as possible. This exploration phase is mandatory when introducing a completely new (modified) game, so that players are enabled to investigate the possible "degrees of freedom" (exploring the scope of playing strategies). At the start of the game, the coach ensures that they have chosen a good team position in the field and clarifies the game concept. Players need to understand the aim of the game and take position in the field that is appropriate to their current decision making skills. For example, the position of the midfield player compared to a winger requires different tactical skills.

Step 2. Investigating GBA between attack and defense.

The second step begins after playing a few small matches, once players get used to the rules, field sizes, the possible tactical strategies, and skill levels of their team members. Evidently, a variety of these aspects may influence how the game is played.

It is assumed that when making adjustments to the game, the coach takes these aspects into account. Coaches then investigate the strength of the attack and defense of the teams by counting the percentage of scorings with respect to the amount of ball possessions of the attack (see **Table I**). With the help of this ratio, game practices can be analyzed in terms of the potential amount of opportunities for learning for the players. The observation procedure starts with two sessions of ten ball possessions (attempts).

Table I. Game Balance Analysis (GBA). Relation between the amount of scores and conclusions for the game balance and subsequent game design

Amount of scores from number attempts (ball possessions)	Conclusion	Consequence
4 or 5 out of 10	Equal game balance	Both attack and defense roles have many chances to learn
2 or 3 out of 10 and 6 or 7 out of 10	Small imbalance	It is possible that over a period of time one of the two roles leads to a decrease in play motivation of players
0 or 1 out of 8, 9 or 10 out of 10	Imbalance	There is a unilateral power of one the two roles (attack or defense). This situation leads to a frustrated learning situation. The attack or defense is too strong within the game and the game contains few learning opportunities.

Step 3. Consequences of GBA for each phase in the game.

In the third step, the coach identifies the phase of the game (building up the attack, creating scoring chances, or utilizing scoring chances) in which the game's (im)balance occurs. In order to have an effective transfer to game design, it is necessary to draw a conclusion for GBA with respect to one of the three phases in the game. In this investigation, game design represents the balance outcome and justifies the direction of adjusting the game.

Step 4. Concluding and determining follow up (game design).

Both the game (im)balance conclusion and the particular phase of the game determines the coach's pedagogical interventions. If the coach accomplishes *game balance*, the game is well-organized and achieves rich learning environment standards. Moreover, the coach does not need to make extensive adjustments to the game. The game provides enough learning opportunities, while over a period of time, the coach searches for a small imbalance game situation for one of both teams in order to give a chance to recover the game to a balanced situation. Through continuously manipulating these balances, the game maintains a rich learning environment.

In a *small imbalance* situation, the game can be defined as near-optimally organized. This means that players need some support without modifying the rules, field sizes, or equipment. The chosen interventions focus on either individual or group tactical instructions with the purpose of recovering the game balance. Importantly, both the *game balance* and the *small imbalance* situations require adjustments. However, these

interventions focus on the team strategy with verbal instructions, giving compliments, or asking questions. If there is a large difference between players' skill levels within teams, it is proposed that the coach focuses on the players' individual learning. Instructions consist of (1) decisive decision-making skills in the game focusing on time, space, pass, and run directions, (2) exploring and assigning tactical solutions, and (3) focusing on technical skills.

By contrast, if there is strictly an *imbalance* in power of either the attacking or defending team, the game is defined as a non-learning or poor-learning game situation. Modification and adjustments of the game structure is required (e.g., field and goal sizes, playing rules, number of players, equipment).

Eliciting players' perceptions with the draw, write, and tell method

We used a draw, write, and tell method to assess players' perceptions of learning. Several studies have indicated that the use of focus groups in combination with draw and write/tell techniques provides relevant, authentic information about children's learning experiences (MacPhail, Kinchin, & Kirk, 2003; Koekoek et al., 2009). Although single analysis of drawings also provides significant information about children's perceptions we did not analyze these data. Instead, children's drawings in the current study were used as a cue to express thoughts and feelings and to stimulate meaningful dialogue (Bland, 2012; Darbyshire, MacDougall, & Schiller, 2005; Koekoek & Knoppers, 2013; Light, 2006).

We conducted the draw, write, and tell method after the second half of the season. From the start of the soccer season these players had several experiences with playing in small sided games. The players were asked to draw pictures about their practices and what they thought they learned in general. Thus, they were not specifically asked to draw pictures of small sided games. Directly after making the drawings, the players participated in a focus group. To elicit the perceptions of all players of the team, four focus groups were organized consisting of three or four players. The focus groups enabled the players to exchange a great variety of practice experiences. First, each player individually explained his drawing, and subsequently, a group discussion was started about one of these players' drawings. Two experienced moderators participated in the focus group. The group discussions were structured by the following topics: (1) the players' learning experiences, (2) what they think (in terms of motivation) about playing in small sided games, and (3) what they think about the game practice and the coach's instructions. The focus group sessions lasted between 30 and 45 minutes.

4. DATA ANALYSIS

We structured the implementation of game design by using video clips of practices and matches. For each game form, we determined children's learning opportunities on the basis of GBA results. The videos structured the process of assigning learning objectives in the real game ("match-like") and the development of small sided game modifications. Methodical steps in this game design were marked with the use of field

notes. The meetings with the coaches were used to discuss the scope of these steps, and the consequences for developing self-regulated learning interventions, learning objectives, and individual skill levels.

We analyzed the interview data from a constructionist discourse analysis perspective (Barker & Rossi, 2011). According to Barker and Rossi (2011, p. 143), "discourse analysis consists of elements that emphasize individuals' constructions of their world through the use of language in relation to others." The focus group discussions were audio recorded and transcribed. The data were analyzed with the constant comparative method (Charmaz, 2006; Glaser & Strauss, 1967). After each focus group, line-by-line coding was used to identify both implicit concerns and explicit statements (Charmaz, 2006). Together with written memos these codes were combined and analyzed. This method enables to develop and refine theoretical categories and themes during an iterative process. The following themes emerged from the data: (1) perceptions of performance and objectives in the game, (2) the coach's role in facilitating learning during practice, and (3) perceptions of practicing a small sided game as a place for learning.

5. RESULTS

Implementing GBA for game design

Determining team functions and tasks. Discussions with trainers and staff before they implemented GBA showed the different team functions identified in matches and in the development and modification of small sided games in practices (see **Table II**).

Table II. Summary of team functions with the associated team tasks that are used at the Youth Academy

Team function	Team tasks
1. Attacking	- Building up the attack through passing between players - Utilizing scoring chances
2. Defending	- Disturbing teamwork of the opposite team that try to make effective passing combinations - Trying to avoid or holding goals
3. Change over from attack to defense and vice versa	- Trying to make a fast change while preventing to make mistakes - Trying to make a change with as many players as possible in the team by making clear agreements

Since the classification of team functions and accompanying team tasks may help the coaches to design practices, we used this format as a frame of reference for the construction of learning objectives and skill levels in small-sided games. By observing practice sessions, a starting point was identified for modifying the working method of the Youth Academy. A central recurrent theme during these practices was how players learned that each team position implies a set of rules according to which to play the game. At each position in the team, a player must learn these rules with an eye for playing the match. Each practice consisted of several activities such as warming up, enhancing technical skills, strength, velocity, and developing tactical awareness

through small sided games. Most importantly (for the current purposes), at the end of each practice, a game (e.g., 9 vs. 9 instead of small sided) is played that imitates the 'Saturday'-match, during which players practice according to the tactical agreements associated with their team position. The coaches called this part of practice 'applied practice'. 'Applied practice' was typically characterized by a prescriptive way of enhancing awareness of the team goals and appropriate tactical solutions. The learning of the team goals played an important role in match preparation. Prior to the implementation of GBA, the coaches judged the learning of tactical skills as the central learning objective for practice. This first evaluation of the practice sessions also showed a connection was lacking between what had to be learned during the other parts of practices and the 'applied practice'. 'Applied practice' turned out to have learning objectives that limited the amount of solutions that players have available to solve a problem in the game. In other words, players were unable to explore new opportunities in the game. The degree of freedom to find tactical answers in the game was strongly limited by the set of rules imposed by the coach. Hence, the construction and design of practice was relatively coach-directed, even though the Academy aims to develop independent players with high awareness of the decisions they make. Hence the coach-directed approaches typically used were not in accordance with the club's policy. On the basis of these observations, the project group started to introduce GBA to design small sided games for learning tactical skills.

Introducing GBA: Objectives and design from application back to exploration. The 'applied practice' was analyzed relative to team functions and team tasks. Several general objectives in these games were recognized as potential ingredients for developing a small sided game (see **Table III**).

Table III. General learning objectives of playing a game of 3 against 1 with 1 goalkeeper

Phase of the game	General learning objectives
1. Building up the attack	<ul style="list-style-type: none"> - Passing and receiving the ball with a light resistance of defense play - Developing awareness of the position of opponent players (in front or beside) - Taking an effective position in the field in order to receive the ball from team members - The central attacking player takes position 'behind the ball' in order to receive it when the player with the ball is under pressure
2. Creating chances to score	<ul style="list-style-type: none"> - Receiving the ball at a position from which it is likely to score - 'Making space' and passing along the opponent - Dribbling in the direction of the goal in order to score or trying to attract defenders and making space for other attacking players - Translocate the attack zone in the game by changing the side of attacking and unexpectedly pass to another team member
3. Utilizing a scoring chance	<ul style="list-style-type: none"> - Shooting at the goal from a position from which it is highly likely to score - Making an appropriate decision between shooting on the goal or continuing the attack - Using space and time for technique selection that optimizes the likelihood to scoring

Taking the perspective of the team task 'building the attack', we adopted the scenarios that can occur in match play and designed a new small sided game (**Figure 1**). This game included the same tactical learning goals as in the games that were played in the 'applied practice'. However, the focus of the small sided game is on players' exploration of tactical opportunities to enhance tactical creativity instead of following the coaches' prescribed learning objectives and rules.

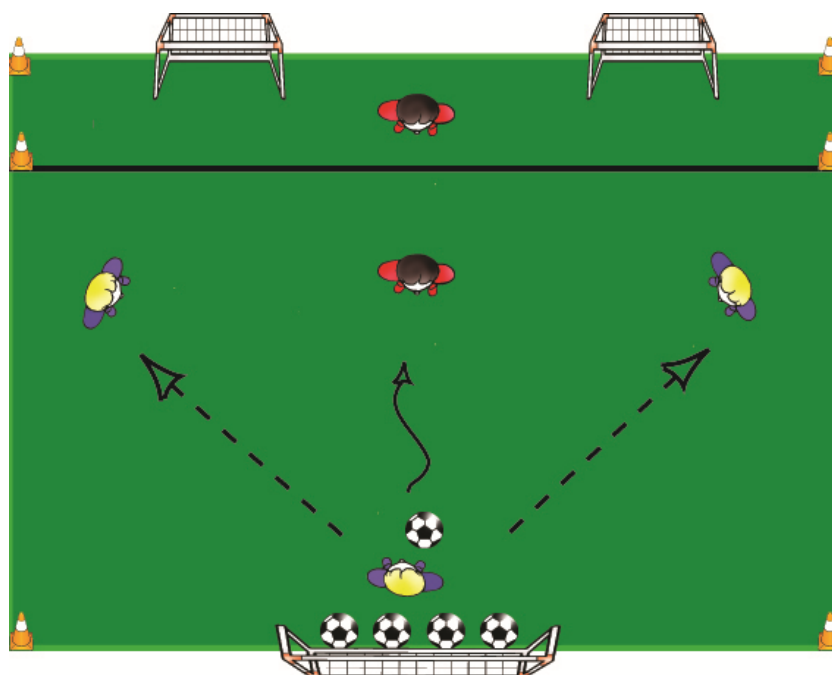


Figure 1. Design of the small sided game 3 against 1 with 1 goalkeeper (edited from Koekoek et al., 2014)

This simplified game (played on field measuring 25 by 20 meters) has been modified without amputating the central characteristics of soccer (except the offside rule). This small sided game incorporates the learning of rules that coaches typically practiced in 'applied practice', but with a greater amount of players. The aim of the game is that three attackers have five attempts to try to score in one of the two small goals. The defender tries to disturb the attack or steal the ball, while one goalkeeper behind the line tries to prevent a score. When both the defender and the goalkeeper intercept the ball they get one chance (one attack) to score on the (bigger) goal. In this game, attacking players encounter different decision making situations that correspond to the learning objectives. For example, players have to decide whether they must dribble, pass along the defender, or pass the ball to team members. Furthermore, the task of the central attacker is to keep into position in order to always be able to receive the ball from the wing players. He also changes the direction of the attack zone when needed.

Video analysis of several practices and discussions of the 3-1-1 game revealed playing scenarios that frequently occurred during the game (see **Table IV**). Both results of GBA

and the scenarios provided guidelines for making adjustments in the game. For example, adjusting the field width and number of small goals (exaggeration) can influence both the GBA results and the players' tactical skill level. The process of designing a new game form began when most of the scenarios were no longer present in the 3-1-1 version. The next step was using GBA in a small sided game with 4 attackers, 2 defenders, and 2 goalkeepers (4-2-2).

Table IV. Playing scenarios in the 3-1-1 game in order to make modifications

Playing scenarios for improvement and design (3-1-1 small-sided game)	
1	An attacking player with the ball focuses too much on his own action instead of taking the other team members' opportunities into account.
2	Passing and receiving the ball between players takes too much time. It takes too long for scoring goals.
3	Players who take too much time when having ball possession lose the ball to the defender.
4	Attacking players pass the ball through the air instead of passing the ball on the ground.
5	Attacking players take position too close to each other. The defender has a chance to intercept the ball or pressures the attackers into giving a wrong pass.
6	The central player '1' runs too far into the direction of the goals. The defender has chances to make effective passing screens.
7	Both wing players fail to make any decisions after receiving the ball.
8	The defender runs to the player with the ball but is frequently too late. He has little chance to intercept the ball or to disturb the attack.

Players' perceptions of learning in a small-sided game

Perceptions of performance and objectives in the game. The players were able to give complex and rich details of their opportunities for learning in the game during practice. In particular, the players reproduced tactical team tasks and functions of several positions mirrored from the adapted game as needed for the match they play on Saturdays. Furthermore, they showed a strong tactical awareness of how they could practice the game in relation to what they think they learned, what they were supposed to learn, and to what degree they achieved these goals. Most of the players had positive experiences with playing in the small sided games. They recognized that these games were good and appropriate for practice because they were comparable with a real match: "The game is similar with a match playing the ball on the midfield and passing to the center forward or wingers." Nevertheless, a few players criticized the game in regard to what they thought that could be learned from it:

Player 1: I like this game, but actually I think I don't learn anything. When we play three against two it would be more challenging for us.

Player 2: Yes I think so, playing this game with an extra defender in the field would be more difficult.

Players had clear ideas on how to attractively adjust the game into a rich learning environment. For example, they developed awareness about the significance of the amount of players. Furthermore, players also noticed that different functions in the game influenced their meanings:

This game is really nice but sometimes I don't like it. For example, if I have a bad day. As a defender, you constantly have to intercept balls and run through the field. Yes, being a defender is not always fun.

Players also used some details in the game and explained what they liked.

Player 1: [I like this game] simply because I have to play the ball around. Sometimes I suddenly get the ball in front of me.

Player 2: In this game, we constantly have to change position. I like this rule because then I can play in each position.

One group discussed one of the adjustments of their coach. Children were asked how the game can change when the coach keeps up the scorings by counting the amount of goals and attempts. This discussion showed how players changed their attitude:

Player 1: Through counting the scores, I play much more decent. I also have more focus on my shot on the goal. Most players want to score goals as many as possible, but then it doesn't work.

Interviewer: Would 5 scores within 5 attempts be feasible?

Player 2: 5 out of 5 is really overdone. Players would pass the ball and are then too rushed.

Interviewer: Ok, but what if your coach does not use this counting system?

Player 1: I think there will be too many shots on the goal. Yes, we will play together with more trouble and without carefully passing balls.

Moreover, players also had preference for playing the game as a match or at least at a higher complexity level:

Player 1: I don't like this game if we use the small goals. If we play this game we need to have large space between the players. Thus, with both a large field and more defenders the game becomes more difficult and attractive.

Interviewer: Why do you think with these adjustments this game would be more attractive?

Player 2: We can work together and give each other instructions.

Most of these conversations reflect what players thought what they could learn in the game and how it supported their learning for matches. This showed that the tactical goals of the adapted game (i.e., increase in tactical skills) were achieved, however, many players also indicated a preference for playing the game with more complexity (less options to score, more defenders etc.).

The coach's role in facilitating learning during practice. The players not only had clear opinions on the small sided game and the benefits for tactical decision making, but they were also aware of the coaches' role during the practice sessions. One player explained his drawing and said: "This player runs to the '10 position' so that we can block the attackers. My coach told me [this]. He explained all these things at the start

of the season.” During the conversations, many players articulated the coach's behavior, his instructions, and how he responded to the decisions and actions players made during practice: “We often play small matches during practice. Our coach stops the game and explains what we can learn. A midfield player often does not know what he must do. But after practicing you get more information.” These players were asked about the role of the coach in this situation and answered: “He shouts very loudly and said stop. Everyone must stand still. He then explains which options we have. He also gave us examples. And he tells a player from the sideline [of the field] what to do.”

The players also discussed the explicit interventions the coach used during practice of the game. A number of players commented on the feedback they received about the way they play the game as a team. The coach provided them feedback through allocating a level of performance. For example, these players explained how the allocation of playing levels works as a pedagogical tool:

Player 1: [A “level 3” game] is when we have a fast ball circulation. We pass the ball very quickly and safely. Thus, we play the ball effectively.

Interviewer: How do you know which level your team is playing?

Player 1: While playing a game, the coach tells us what kind of performance level we have.

Player 2: Yes, he notices our level and explains how we have to play better. He doesn't explain these levels for each individual player. He makes a judgment for the team.

Many players appreciated the coach's explicit judgment of team performance. These comments indicated that they clearly understood what their coach intended with allocating playing levels. Also in another focus group, some players articulated these performance requirements in detail.

Player 1: He [the coach] tells us that when we play a “level 1 game”, players need to get used to the game and watch how tactics work. A level 2 play situation consists of searching for solutions and doing things better. Level 3 is doing important things and knowing when.

Player 2: I think everyone has level 2.

Interviewer: Do you think that by yourself or did your coach tell you?

Player 1: No, my coach didn't say that. But sometimes while playing the game he said, “This is really a ‘level 3 play’.”

Interviewer: Do you know what your coach means by this?

Yes [all the players said together]. It is when you pass the ball well or take initiative.

The players often identified the coaches' verbalization as the most important source of information. Even though the coach used many visual examples during practice, it was

typically the coach's verbal explanations that the players considered. For example, a player explained his drawing:

This [he points to his drawing] goalkeeper has got the ball. The other player passes the ball to the center back and he starts to dribble forwards with the ball. After this, he passes the ball to the midfielder, and so further on to the center forward or wingers. When I'm the center back, I have to dribble with the ball, and if I am the right fullback, then I have to keep the ball to the side to look after a wide playing field.

Interviewer: How did you learn this?

Player: The coach told me.

Obviously, although this player had detailed awareness of the tactical complexity of the game, on the whole he reproduced the coach's tactical intentions for the team. In most of the discussions, players talked about learning in terms of explicitly complying with the rules. In one discussion, players talked about passing straight balls:

Player 1: If we play a match [on Saturday], we are only allowed to make actions on the middle field or near the "sixteen."

Player 2: Yes, and my coach also tells me that, as a full back, I can dribble with the ball till the center line. And when I meet an opponent, then I have to pass the ball.

Player 3: And as a winger, you must try to get the ball in the area of the goal. Most of the time the coach wants us to take these actions.

Player 1: Actually, there is always a rule for everything and each position.

Interviewer: Are you able to make actions in the back positions?

Yes [all the players together].

Player 2: Yes, only if we search for space instead of staying with an opponent.

Player 3: Indeed, together with the midfielder. He must ask for the ball from the back.

In this discussion, the players show the tension available between adherence to made agreements and exploring ("doing") opportunities that arise during the game. Remarkably, these players articulated the rules as a set of open opportunities or choices to explore. However, they frequently answered these questions with "yes, but only...", indicating that the constraints were very strict within a small workspace to explore. The coach had a mandate on the degrees of freedom that had been assigned to exploring the rules.

Evidently, the last remarks show that players seem to have explicit awareness of many rules that exist during practices and matches. They explained that the coach wanted them to use and obey the rules. In general, the players perceived a comfortable situation in establishing such a learning environment. In addition, the players' comments

show conformity with the way they think learning works in a soccer team. The next discussion also provides insight into how natural this apparently works:

Player 1: If we play in a small sided game, the coach stops the game and tells us what we can do better.

Player 2: Each practice you learn different things. It takes time but then things get automatic.

Player 3: When practicing, I am not always sure about the benefits. Mostly I ask the coach. I often have these things in my mind. When the coach explains things, after that, I do it automatically.

The players thus regulate an important part of their learning by themselves. Most of them reproduced important team positions and rules with a reference to the coaches' instructions. These perceptions indicate a significant prescriptive contribution of the coaches, and their struggle to fully implement a learner-centered-approach. At the same time, a few players explained they had learned and understood tactics by experiencing by them while playing. For a coach this may be a central aim: to get the players in a learning modus that induces them to develop creativity and the ability to think during the game. A discussion about receiving the ball in an "open" or "closed" position shows the players' perspectives on this:

Player 1:[In an "open" position] I can see what is happening around me.

Player 2: Yes. If someone is entering my back and I lose the ball, I know whether I have to bounce the ball or turn around and start to dribble.

Interviewer: How did you learn this rule?

Player 1: It is an agreement.

Player 2: Yes, but it is understandable if you think logically.

The answer of the first player shows the coach's role in facilitating learning. The second response indicates that players are aware that they also should trust their own capabilities. This short conversation also suggests that the coach facilitates learning according to TGfU principles without being too prescriptive. In a similar discussion about receiving balls in an "open" position, players articulated that they trust their own capacity to learn from playing the game:

Player 1: [Pointing on his drawing] This is a straight ball. If somebody gets between them, we lose the ball.

Interviewer: How do you know this?

Player 1: We learned this from our coach. Yes, but also by myself through trying and feeling during playing the game.

Player 2: Yes, I learned most of things here [at this club]

Player 3: Yes, me too. At the [soccer] club I was before I only learned basic things. Here [at this club] I learn to play soccer how it is supposed to be. Learning soccer to become a better player.

Perceptions of practicing a small sided game as a place for learning. In each discussion, the players were asked what they thought about learning technical and tactical skills during the small sided games. Mostly, the players felt that they had possibilities to explore new things in the game. According to their comments, learning in the game also implies making mistakes: "I try to avoid making mistakes, but my coach says you have to make mistakes. Yes, that's true, you can learn from your mistakes. But in that case, he [the coach] wants us to get ball possession as quickly as possible." Although the players explained that it was allowed to make mistakes during practice and matches, the conversations also indicated that the opportunity their coach provided for this was framed within a set of rules. The question of whether they are allowed to experiment or try new things in the game was frequently answered as follows:

Player 1: Yes, we are allowed to experiment. [But] our coach does not like it if a player doesn't pass the ball but rather does things for himself. He also tells us that we have to keep ball possession. And if we make an action, he really doesn't like that.

Player 2: Yes, he shows us that he isn't satisfied.

Interviewer: But what if you think it's a good action?

Player 1: Then the coach starts shouting. It's part of the team and the club. It is normal for us. You can learn from these things.

Player 2: Sometimes, when we are in the changing room [after a match], he gets angry if we play poorly. Some players are starting to laugh after a match. Then he gets really angry. He says, 'well now you're laughing, but you don't need to. You have lost the match, you played as badly as I said'.

Player 3: Yes indeed, the coach can be angry. Once, after a match, he said, 'Well, if you don't play well, you're out. There are hundreds of other guys who can take your place.'

Player 1: Yes, but this is also how a professional soccer club works.

Player 2: Yes, but sometimes he gets angry too much.

This conversation provides insight into the club culture, the team, the way rules are implemented, and the behavior that is expected from the players. The players articulated the opportunities for learning by exploration during a game. Yet, their constructions of the underlying intention of the coach, and the way the players explained how they practiced indicated that these opportunities could often not be grasped.

In one discussion, the players could clearly remember an example of one of the coach's exercises and the opportunity for exploring tactical skills in a game:

Player 1: [The coach said,] "I only give one example and then you must find solutions for this as a team." Sometimes, a player asked him, 'Wouldn't this [other tactical solution] work better?' We must figure out the tactical way by ourselves. And if we don't understand it, he gives us some possible solutions. Thus, through this, we learn and improve how to play well.

Player 2: Yes, we learn and understand, because through discovering things, we search for our own solutions.

Hence, the opportunity for experimenting during practice that players experience seems to be common sense. At the same time, the players were aware that their coaches put constraints on the opportunity for exploring tactical strategies. This shows the tension between (prescriptive) instruction (by the coach) and through players' self-initiatives. In this respect, the players used different wordings to explain what they meant by practicing a game. For instance, referred to (1) "game-like," (2) "match-like," or (3) "technical practice." A few players distinguished between learning and practicing soccer. Particularly, they used these terms when discussing their perceptions of practice during small sided games at the club and learning at home or on the street:

Player 1: At home I learn new tricks. If I take a ball by myself I can practice.

Interviewer: And learning tricks when playing the small sided game?

Player 1: We are not allowed during practice.

Player 2: Yes, we only need to focus on the practice.

Player 3: Yes, we do not have time for it. We have time before the practice starts.

Player 1: We have practice one and a half hours, there is no time.

Remarkably, exploring things and learning new tricks does not belong to practice at the club because of the lack of time they experience during practice. This indicates that players had different thoughts about on one hand, the status of practicing (the game of soccer) at the club and on the other, what they called "learning or acquiring" (ball) skills (tricks). The players pointed out that the context of their home situation and playing soccer on the street were the places for learning new skills:

Player 1: [We learn these skills] by practicing outside on the street.

Player 2: Yes, but also when we practice here [at the club].

Interviewer: What's the difference between practicing at the club and practice outside?

Player 3: Outside I try things. I try to learn it better.

Player 2: Sometimes I go back to my former soccer club. I'm better than these players. Then I try new things. At PEC Zwolle, I follow instructions during practice.

Player 1: When I play outside there are many players. So, it's difficult to pass the ball or make actions.

These players explained that it depended on the context in which they played whether or not they could learn soccer skills. These contexts (e.g., their neighborhood) were defined as particular opportunities to learn specific ball skills. They could also articulate the latitude of what they are allowed to practice during the small sided games. The practices at the club consisted of many rules and instructions. Hence, when they played soccer on the street or with children with lower skills, they felt challenged and encouraged to explore and improve their motor skills, while during small sided games learning focused on tactical decision making. In summary, practicing soccer seems to be interpreted by players in many different ways. They considered the practices at the club more comparable to the preparation of a competitive or as academic achievement: "You have to learn during practice. The things we learn are necessary for [the match on] Saturday. Actually, practice could be compared with having a school test."

6. DISCUSSION

The central aim of the current study was to examine youth elite soccer players' perceptions of practicing in a modified game. In particular, our exploration focused on the players' comments of how they think they learned tactical decision making skills. Secondly, the study described the process of designing and developing small sided games in order to give an idea about an actual process of implementing modified game practices with the use of GBA. Designing practices with the use of GBA is consistent with recent concepts of the nonlinear pedagogy approach (Renshaw et al., 2010; Tan et al., 2012). This approach holds that varying the constraints of the game will shape the decision making skills. In TGfU settings, decision making is the central aspect of tactical learning. Accordingly, if the game form is accurately adapted to the players' current tactical skill level, they become fully aware of what tactically can be learned in game situations (without the coach instructing them in detail).

The results indicated that youth elite soccer players indeed learned the tactical skills that intended them to be learned in the game. Although the process of game design provided players with the opportunity to explore tactical decisions by themselves, their perceptions also indicated that practice often was rather prescriptive. This finding shows the difficulty for coaches to change practice habits, even when they intend to do so. It is important for coaches to recognize that young players are very capable of perceiving such tensions (the goals/rules of the coach vs. exploring solutions).

The results also revealed that the young players had explicit views about the small sided games they played. They had ideas of what they had learned (in terms of games/matches), of what they were supposed to learn (with respect to the position in the field), and why the practice was designed in the way it was (also relative to other practices). This suggests that the small sided games were suitable for making players (more) responsible for their own learning. The players allocated the practices at the

club as the place for tactical skill learning, while playing at home was allowed for learning new technical skills. Furthermore, the interviews suggested that the players saw their coach not only as a facilitator or an important resource for tactical skill learning, but sometimes also as the person who -at the end of the day- determines the rules. They were very aware of the rules and tasks the coaches wanted them to learn for the 'Saturday match'. The players were able to concisely articulate what the game objectives were, and what kind of tactical skills are needed for an effective learning outcome. Although GBA provided guidelines for proposing and adjusting the constraints of the game, it does not generally induce self-determining decision makers and contribute to successful learning outcomes. Moreover, the players' perceptions suggested that their learning experiences may be a result of what 'significant others' (coaches) want to see that has to be learned in the game. When these players were asked whether they were able to experiment or learn new ball skills during practice, they saw other contexts (e.g., neighborhood) rather than practice at the club as the appropriate place for learning. They learned different things (and had different intentions for learning) at the club and the street. They did not consider club practice sessions as a way for learning ball skills (even though improving ball skills is what they seemed to enjoy most). Rather club practice sessions are primarily serve for learning the tactics of soccer. Obviously, these findings are in contrast with the assumptions and goals in game centered approaches. Hence, even when coaches implement a TGfU approach, such as when integrating modified games and pedagogical principles, this does not guarantee the development of self-regulated decision makers.

In this regard, one issue that the players raised concerns taking risks and making tactical mistakes during game play. This was considered as an important part for learning in practice (as also emphasized by the coach). Nevertheless, it appeared that the players felt a limited degree of freedom for exploring and experimenting during game practice. The players, however, had different perceptions of this when talking about the small-sided game. For example, some players made sense of the fact that they had to adhere to agreements about the game in perspective of the coach and the other team members. As they contended, each position in the field consisted of either defending or attacking playing rules. This shows that the adapted game form provoked explicit learning experiences (through agreements) rather than exploration and experimentation to find solutions themselves. This finding suggests that at an early stage coaches must seek (even more) for a variety of constraints (e.g., requiring the number of goals to score, counting attempts, or using a timeslot to score a certain amount of goals) to inform their players with the kind of intention, or attitude, they may play the adapted game while being reserved on advising on the best solution. Perhaps, the coaches in the current study became impatient, because the imposed constraint did suffice in enforcing a solution upon the players (or insufficiently challenged them to search the solution). Therefore the workspace for exploring solutions might be too small. Coaches may face the challenge of limiting the players' workspace, but without becoming overly verbally prescriptive. On the other hand, this suggests that for the development of rich learning environments, the coach needs to reflect on how much tactical instructions and solutions are desirable relative to the objectives of

implementing small sided games. A coach should have confidence in players finding the solution on their own.

The context in which this study has been conducted can be defined as specific and unique. Although the group of participants consisted of an elite group of high skilled soccer players, the results from this study provide relevant insights that may also be useful for amateur sports or PE. It shows that notwithstanding the intentions of coaches implementing TGfU/GBA, there is no guarantee that pedagogical aims are fully achieved. In addition, adapted games with a TGfU approach provide 'constraining structures' for all learners to understand tactical knowledge (Slade, Webb, & Martin, 2013). Hence, learning design in TGfU means that games are adapted to the skill levels of the players.

In conclusion, the players' perception reveals potential pitfalls in designing games with the aim of achieving learner centered environments. The soccer coaches want players that have learnt to act flexibly when they play similar but tactically more complex situations, but they also want to make sure that their players know the tactical rules. Therefore, practices should be arranged by taking into account both aspects. Curriculum development and construction of practice plans need to be considered within a continuum of learning tactical decision making skills from prescriptive explicit instructions and agreements (perhaps as a direct preparation for the match on Saturdays), and, on the other hand, creating opportunities for acquiring long-term flexible tactical skills.

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