

THE ROLE OF SMALL-SIDED GAMES IN MODERN SOCCER AND THE ISSUE OF THEIR HOLISM

Miloš TUL¹, Zdenko VERDENIK², Matija MARŠIČ³, Matjaž MULEJ⁴

¹Znanstveni licej F. Prešeren, Trst

²Fakulteta za šport, Univerza v Ljubljani

³Fakulteta za matematiko, naravoslovje in informacijske tehnologije, Aplikativna kineziologija,
Univerza na Primorskem

⁴Ekonomsko-poslovna fakulteta, Univerza v Mariboru

Corresponding author:

Miloš TUL

Znanstveni licej France Prešeren,
Vrdelska cesta, 13/1, 34100 Trst, Italy
e-mail: tul.milos@gmail.com

ABSTRACT

In the modern soccer, small-sided games (SSG) present a significant proportion of the whole training process. SSG are introduced regularly and with different emphases, depending on the players' basic technical skills and on the training objectives, but also according to different (sports) cultural contexts. SSG immersed into the wider soccer area at different speeds and with different emphases, often with rather modified designs. Due to their extraordinary adaptability and efficiency, SSG as a working method have undergone a great expansion. Their design and (possible) versatility are explained in this paper from a somewhat unusual perspective of the systemic theories as the theories of achieving the greatest possible holism of our reflections and actions. In the foreground of this paper there is the question of SSG integrity (as the prevailing practical methods of work in modern football practice), through the analysis of the conditions required in order to classify the use and further development of SSG in practice as an innovation, taking into account the laws of requisite holism and innovation.

Keywords: soccer, small-sided games, requisite holism, innovation, innovative working.

VLOGA IGRALNIH OBLIK V SODOBNEM NOGOMETU IN VPRAŠANJE NJIHOVE CELOVITOSTI

IZVLEČEK

Igralne oblike (IO) tvorijo v sodobnem nogometu precejšen delež celotnega procesa vadbe. Vanj se IO vnašajo redno in z različnimi poudarki, glede na osnovno tehnično znanje igralcev in na cilje treninga, vendar tudi glede na različne (športno)kulturne kontekste. Igralne oblike so se z različno hitrostjo in z različnimi poudarki vsidrle v širši nogometni prostor, pogostokrat tudi s precej spremenjeno zasnovo. Zaradi izjemne prilagodljivosti in učinkovitosti so igralne oblike, kot metoda dela, doživele velik razmah. Njihova zasnova in (možna) vsestranskost bo v tem prispevku pojasnjena z nekoliko bolj neobičajnega vidika, to je z vidika sistemskih teorij kot teorij o doseganju čim večje celovitosti razmisleka in ravnanja. V prispevku je v ospredju vprašanje celovitosti igralnih oblik (kot prevladujoče praktične metode dela v sodobni nogometni praksi), preko analize pogojev, ki so potrebni zato, da uvrščamo uporabo in nadaljnji razvoj igralnih oblik v praksi kot inovacijo, ob upoštevanju zakonov o potrebni in zadostni celovitosti ter inovativnosti.

Ključne besede: nogomet, igralne oblike, potrebna in zadostna celovitost, inovativnost, inovativno poslovanje.

INTRODUCTION

SSG as a special segment of the practical methods of work and methods of the game (Elsner, 1997) are an extremely widespread and efficient method of work in modern football. This methodical approach appears regularly in all football-developed countries in the world. Although with different emphases and repeatedly revised baselines and at different time sequences, they were successfully anchored almost anywhere. In Europe, the beginnings of SSG occur in the late sixties and early seventies in Germany where this approach was apparently established thanks to Horst Wein (<http://www.ydsoccera-cademy.com/index.php/articles/35-history-of-the-small-sided-games>).

A brief description of the developmental path of SSG in Europe

The beginnings of SSG, for instance, appeared slightly later in Italy, only in the late 1980s. Of great importance at that time was the article of the Frenchman Christian Bourrel, who, in cooperation with the Italian federal coach Maurizio Seno (1989), wrote *Allenare i dilettanti* (Amateur footballers training) and defined the general theo-

retical and methodological bases. The visible effects of the then-prevailing pedagogical thinking are notable, in particular the famous French pedagogue Bernard Aucouturier. "Active pedagogy", as a basis of teaching the sports elements, therefore entered the Italian soccer space, that mostly still did not know this approach at the time (Costantini, personal communication, 08 May 2015; Seno, personal communication, 05 May 2015). The Italian version of SSG was literally called the thematic game, games on the (selected) theme (It. Giochi / partitelle a tema).

In Slovenia, in fact, in the former Yugoslavia, they got to know the SSG as a result of the academic exchanges that were maintained by some of the professors from the Faculty of Sport, University of Ljubljana, in particular with the major European football/soccer centers in Germany. The Slovenian pioneers in the field were Branko Elsner, Ph.D., and then Zdenko Verdenik, Ph.D. Their simultaneous engagement in the academia of the former College of Physical Education (later the Faculty of Sport), University of Ljubljana, and in the circles of the former Football Association of Yugoslavia facilitated the transition of this new methodical basis into the learning process of the Soccer courses at the College and into the content of compulsory licensing of soccer coaches at the Football Association of Yugoslavia.

At the same time, the "new" approach to training covered all republican soccer centers in Yugoslavia, where it immersed very specifically. The Belgrade soccer profession, for example, probably accepted the professional challenge without the necessary systematization and contextualization; so, the already established school of teaching the soccer elements without this innovation ultimately prevailed there. The reason for this was mainly in the fact that, at the time, the "Balkan soccer school" was a widely acknowledged superpower in world soccer area; the Yugoslav coaches were greatly appreciated in the world; the Yugoslav national team did not lag behind the best ones in its results. Therefore, they felt that changes in the training process are not needed. SSG were in this area implemented only because of personal beliefs of individual coaches (especially Ivica Osim and Tomislav Ivić), and not as a specific feature of the local soccer school, which, in the design of the game, was still based on teaching the techniques and situational methods.

The Slovenian "path" to the enforcement of SSG was based on a more consistent and coherent development of SSG's initial methodological and substantive assumptions within the Soccer study course at the mentioned College. Transfer of the acquired knowledge and experience in the field of SSG in the program of teaching contents for the licensing of trainers was natural; that was also one of the reasons for the creation of the substantively and methodologically regulated basis to confirm the Slovenian route to the licensing of trainers that was approved by UEFA (in the first years after the independence of Slovenia) as an independent school for the education of coaches. It is worth mentioning that the method of the game was studied; in addition to the aforementioned Elsner and Verdenik, SSG's actual benefit/performance was somewhat later also studied by Pišot (1994). The then-magazine *Trener*, in which the two authors actually introduced the whole concept of work, also made a big contribution to raising the awareness and promoting the knowledge about SSG.

The FC Barcelona takes great credit for the overall implementation of SSG (also in terms of promotion) in the modern soccer. The incipients of SSG in Spain (Catalonia) are said to have been established already by Laureano Ruiz (Balague, 2013), who, as the first person in charge of Barcelona's youth groups in the early 1970s, introduced the most elementary forms of "tora" (the version we know in Slovenia as "pepček") in the training process in Spanish soccer; he argues that he has not yet known such exercises. Barcelona's modern SSG undoubtedly present a step forward to an even greater "coming closer" of the SSG to the universal demands of the game. The so-called "positional playing" appeared in consolidating the legality of the game of this team, this time even at the level of the team tactics, which currently presents the highest level of complexity of the traditional SSG.

Multilateral purpose of SSG

SSG are means of socialization of soccer in society that needs orderly and cultural soccer player's personality; the socialization in the game is achieved indeed only through the most appropriate collective/team-effect, with discipline in the game, liability and psychological balance of the players (Verdenik, 1983, 2003). SSG that have actually replaced the so-called "ancillary games" ensure "(...) *the joy, relaxation, emotional experience; motivation is greater, individuality is sufficiently emphasized, the diversity of solving the game situations is abundant and the like*" (Elsner, 1997). It is also important to take into account the consequences of the potential dominance of that working method. Elsner (1997) notes, for example, that there may be "(...) *excessive individuality, automation of faulty execution of technical elements and indirectly an improper development of specific football/soccer motor elements, improper design of mutual communication and structural situations and the like.*"

Because of clear freedom in the design (creating, structuring) that is allowed by SSG in the pursuit of the objectives, in the period from 1980 to 1990 in Italy, the application of SSG prevailed more for the development of motor abilities than for the development of technical/tactical skills of the players. *Games on the theme*, therefore became, in the modified form, the games "under pressure" (It. "giochi a pressione"). Their main objective was to develop particular energy components (endurance and strength). The application of SSG in this direction marked a whole decade of Italian soccer reality, while in principle, the situational method of work dominated as the basic method of work in the designing of the game (Costantini, Personal communication, 08 May 2015).

The use of SSG with the purpose of development of motor skills was specially exposed by several researchers across Europe and the world. They published the first prominent surveys (Bangsbo, 1998), which substantiate the use of SSG for the development of motor abilities as functional abilities of soccer players. It should be mentioned that the authors agree that a properly adjusted SSG has a very large fitness potential (Aguiar, Botelho, Lago, Macas, & Sampaio, 2012; Athanasios & Eleftherios, 2009;

Bangsbo & Lindquist, 1992; D'Ottavio, Colli, Bosco, & Tranquilli, 1997; Rampinini et al., 2007).

The aim of this paper is, *inter alia*, to explain the dilemma of the approach to SSG depending on a too narrow or as wide as possible (holistic?) definition, given the constant presence of dualism, which stems from practice: on the one hand, the prevailing reductionist theories and conservative and analytical approach to the training process and, consequently, also to the use of SSG, on the other hand, a more systemic approach (Cano, 2012, 2015). At the same time, the purpose of contribution to the analysis of the conditions that are necessary for the adoption of any new potential novelties in the working practices of innovation, which include, in particular, the law of the requisite holism and innovativeness.

METHOD

When examining the characteristics of SSG and their developmental path, the historical method and a case study was used. The findings of the qualitative approach to research have been complemented by views of two football experts with extensive experience in coaching from Italy (M. Seno and M. Costantini) and renowned Italian researcher in the field of conditioning (R. Colli).

When examining the conditions for the adoption of SSG as an innovation in football practice, the method of dialectical systems theory was used, which includes the law of requisite (i.e. appropriate) holism and the law of hierarchy of sequence and interdependence (Mulej, 1979; Mulej et al., 2013). In the treatment of the chosen theme, the law of entropy was incorporated (Mulej, 1979; Mulej et al., 2013). Using USOMID (Methodology for creative collaboration of many for innovative work) as applied methods for innovation in the work, we have studied the possibilities of success, which depend on the guidelines for appropriate comprehensive definition of objectives and guidelines for appropriate overall achievement (Mulej, 1979; Mulej et al., 2013).

DISCUSSION

The coach's experience and competence, the consideration of the local dynamics (including the social ones) and the general requirements permit the construction of more specific SSG, which are, according to the organization, selected topics and emphases specific to a given environment and (sport) context. The pronounced flexibility of SSG allows the manipulation of basic exercise parameters (number of players, size of the field, tasks in the game, the auxiliary players, etc.); therefore, it indirectly requires the coach's creativity, which can be indicated by the introduction of new, different organizational and substantive legalities, but also completely different ways of integration of these factors with the purpose of achieving the biggest effect possible.

The first condition: the requisite holism of SSG

The noted findings show that even in SSG one-sidedness is possible, but in reality – in order to utilize the most of their potential – the biggest possible holism is necessary. Holism as a word is easy to use, but difficult to precisely define. Different authors have different definitions (detailed in Mulej et al., 2013), either explicitly or implicitly. Literally speaking, it contains everything: *all the components and all their relationships (links, relations) and caused synergistic properties* that characterize this phenomenon. But: what is – all? Experience has shown that people – due to natural causes – cannot and do not want to think and act with such a width to cover *absolutely everything*, as required by the concept and demanded by Bertalanffy (1979), when he created his “General systems theory” “against over-specialization”, i.e. against the common and dangerous one-sidedness of specialists. It turns out that, in fact, *everyone feels entitled to define what counts as a whole, according to their own criteria*. This also happens in soccer practice.

The mathematically generalized basis for the definition of a whole, with which the first authors of the systems theory have helped themselves (and achieved the overall impact), said that the whole (= a system, network) is *everything that is composed of a set of components and a set of connections, relationships between them*. In a strict soccer sense, this would mean that the whole covers all players with their abilities (also their opponents), the relationships between them (both in the defense and attack), results, strategy and chosen tactics, playing conditions, the spectators, coaches, other collaborators etc. It is generally a valid **isomorphism** (= similarity), which serves us well enough as long as the *substantive* aspect is less important than the *mathematical* basis for the description of the phenomenon on a general level. When we are interested in **substantive aspect**, we notice that the same reality, the same phenomenon can be described with many different *systems*, i.e. as a variety of wholes, because we look from various angles and, therefore, we observe and consider essential the different parts (!) of the actual characteristics of the phenomenon.

According to the chosen problem (the importance and role of SSG in soccer training), we can easily figure out already from everyday practices that the direction of using SSG can be very different in the forefront. It can be the methodical aspect (learning/teaching the soccer elements), economic aspects (certain game tasks performed by all the lower energy input, rationality), aspects of productivity (the actual usefulness of the selected SSG), organizational, aesthetic aspect, etc. Last but not least, we must also put the question of *the relationship and interaction between these aspects* and their integration into *emergent synergies*, for example, in working or in a match as the new system. In soccer, this means to take into account the interactions e.g. of a selected organization of SSG to actually teach the game element, i.e. the actual usefulness of the selected SSG, and vice versa, for example, the impact of the learning/teaching process on the selection of the organization, etc. Due to the interaction with the selected aspects, the game design appears quite specific (*emergent synergies*) and typical for it at a given training process.

So, if the so-called wholes can be so numerous and so different in their actual contents, when is the dealing holistic, attaining wholeness, systemicity and when it is one-sided? And also: if Bertalanffy's idea has not taken root into the practice of modern humanity, which one has, while the specialization is necessary and dangerous at the same time?

Conferences about systems theory show that in fact no **definition of holism** was accepted as a completely general. Specialization is too important and powerful, making the vast majority to not restrict the use of system concepts, holism etc. **within** their individual disciplines. They are not willing to give *priority to holism*; and push (their own!) specialization aside. However, the experience shows that *specialization, even if necessary, is not enough*, because it causes too many oversights until it poorly cooperates with others. Therefore, the will and the ability to work interdisciplinarily are necessary and one must take this as a starting point: "whoever disagrees with me, is useful, because it helps me to strengthen the holism; we share our differences, by linking them we create synergies, therefore I listen, but think about it, not only obey nor reject in advance, in order to hear more of the meaningful ideas." (See e.g. Mulej et al., 2013).

The consequence of the dilemma between specialization (focus on a selected aspect, e.g. SSG only for the development of special endurance) and holism (focus on several aspects at the same time and in synergy, e.g. some technical/tactical elements of the game and special endurance) is therefore a dilemma, because of which we choose whether we will have **a complex or a simple approach**.

A complex approach requires a lot of work to gain a fairly holistic insight and action. The approach is difficult, but the outcome are the results, that are probably holistic enough, so that at the end there will be no unpleasant surprise waiting for us as side-effects. In short: *a complex and complicated work leads away from oversights and therefore to simple (more manageable) consequences*.

Another option is to choose a **simple approach** that requires little work, but gives no real holistic insight and action. It is pleasant, causing less burden, but the results can easily happen to be not requisitely holistic: unpleasant surprises are 'secondary' effects. In short: over-simplified work leads to oversights and, therefore, to complicated consequences.

But a complete (=total) holism is not feasible, and certainly not in the work and thinking of people as individuals without (interdisciplinary) cooperation; at the same time this causes an excessive burden. Apparently, at the first this requires a decision of *what level of holism is requisite, i.e. sufficient and necessary at the same time* and, therefore, good enough or adequate ('just right') for the present case.

Therefore, it is about an intermediate path between the two extremes. With *total* (= full, comprising everything) *holism* we would try to cover absolutely everything with every aspect and connection between them, and to connect all into the total system, without any selection and elimination.

The outcome would eliminate any focus on anything and would not allow any response to the question which insights and actions are essential, or resulting *fictitious* (= one-sided, limited to a specific selected aspect) *holism*; it would be too narrow, too

selective, otherwise well focused, but giving a way for information and knowledge only about a fragment of reality. This is enough and important for the individual stages of work or individual specialists in an interdisciplinary group of participants, but not to manage the entire life reality!

The intermediate path between the two extremes must be sufficiently close to reality, both in terms of the needs and of the options/possibilities. Such a choice of holism was named *requisite holism* (Mulej & Kajzer, 1998). Successful people live more in accordance with it - **the law of requisite holism**, than the others do (of course, probably silently, unconsciously, naturally - simply under the influence of specialization and life circumstances).

The decision on the level of *requisite holism* is thus in hands of a human: what to consider and what to omit. Therefore, it also requires human **responsibility** and complete **clarity** of definition, *which system* (network, not a mental picture) of *aspects/viewpoints* one chooses in a given case. It is a dilemma, whether we choose a complex treatment and achieve simple consequences, because nothing substantial is omitted, or select a simple treatment and achieve complex consequences, because something essential is omitted and therefore we experience some possible side-effects in addition to anticipated ones, too.

Holism includes reflection, decision or action that at the same time includes four concepts that are exposed below (Figure 1) and the phenomenon is considered as a system, i.e. a network, covering all at the same time and intertwined, interdependent and with interactions.

Therefore, we do consider, that the *specialization* is inevitable, and *holism* too. Indeed, to specialists (e.g. the coach, fitness coach, physiotherapist, etc.) systematicity (2 in figure 1) is closer than sistemicity (1 in figure 1). Cooperation between mutually different specialists who deal with the same subject from different perspectives and are therefore interdependent, (3 in figure 1) provides, that on the basis of relations interactions result that allow sistemicity (1 in figure 1). If in this case they succeed to properly take into consideration the law of requisite holism to get to know the essence, not to get lost in irrelevant details and do not even reduce the whole to over-simplified image, they also reach the realism (4 in figure 1). Therefore, it is about the question, how capable are the members of the expert team to be holistic in their thinking, decision-making and functioning, especially in the design stage of the training process, but also in its practical implementation, so that the plan would not remain a dead letter. Therefore, the term “neighboring knowledge” is getting more important than “space”, where the communication between the members of the expert team is implemented. Here the opinion of the renowned Italian training researcher is significant (Colli, personal communication, 20 May 2015), who believes that e.g. the fitness coach is needed, but even more necessary is that the head coach is able to grasp the meaning and purpose of the exercise, suggested by the fitness coach, and transfer it into more “soccer-type frames” or vice versa.

Figure 1: Definition of holism in the Dialectical Systems Theory. The cases from football/ soccer practice are selected purely indicatively. SSG=small sided games.

<p>(1) The whole (sistemicity)</p>	<p>In thinking at the same time we capture the synergy of all the elements that make up the game (match) in its widest sense: e.g. the number of players, the game tasks, individual, group and team tactics, the result, conditions etc. Legality of the game is reflected correctly in the time, space and energy. The individual elements are not the central theme.</p>	<p>- SSG involve simultaneously e.g. developing all possible essential technical/tactical elements at the level of team tactics in the phase of attack and defense, and fulfill the respective energy requirements.</p>
<p>(2) Parts (systematicity)</p>	<p>Each part of the game is treated separately (match, the training process ...): e.g. defensive line, midfield, attack, individual technical/tactical behavior of the player, physical fitness, individual tactical choices, etc. as separate topics.</p>	<p>- SSG cover, for example, essential technical/tactical elements of group tactics in both phases of the game (e.g. defensive line with or without ball possession).</p>
<p>(3) Relationships (correlation, dialecticness, interdependence)</p>	<p>We are dealing with connections that are formed between the individual parts of the whole; e.g. relations between the goalkeeper and the defensive line, the relationship between the defense and the midfield, relationships that are developed according to the opponent, in both phases of the game in the interaction between them.</p>	<p>- SSG has at the forefront for example the aspect of cooperation between players (individual, group and team tactics).</p>
<p>(4) realism (reality proximity, materialism)</p>	<p>We consider how the selected content is actually realized in practice and whether the SSG in its apparent shape is sufficiently similar to reality from the technical/tactical and energetical point of view.</p>	<p>- SSG consistently illustrate the legality of the game in the temporal-spatial and energetical sense.</p>

It is therefore essential to move from a **one-profession** (e.g. only the aspect of the coach is dominating) to **inter-professional** creative cooperation (e.g. the coach and fitness coach), whenever it appears that the individual profession probably does not provide the *requisite holism* and the wider definition of holism is needed; therefore, a trans-disciplinary approach becomes one of the values, because it is preparing them for the starting point: “*My specialization does matter, but not as the only one. It makes me needed by the others, and I need them. We are therefore interdependent, not independent, nor unidirectionally /one-way dependent.*” (Mulej & Kajzer, 1998).

Figure 2: A summary of the basic characteristics of systemic thinking. Cases are selected purely indicatively.

Systemic / holistic way of thinking	Non-systemic / unilateral thinking
<i>Interdependence/s, the relationship/s, openness, dialectical system of aspects</i>	Independence, dependence, closed-in behavior, individual aspect.
- The thinking covers all the essential aspects of the soccer game at the same time (e.g. technical/tactical aspect, aspect of physical preparation, importance of the result, economics, aesthetics, etc.).	- Analysis of the performance of a player is limited e.g. only to the aspect of his physical fitness.
The complexity (and also complication)	Simplicity, the complication, the parts alone
- The game includes many technical/tactical elements that form a meaningful and coherent complex of technical/tactical knowledge	- From the complex of technical/tactical knowledge we expose only some specific knowledge (e.g. Individual can properly receive the ball)
Attractors, influential forces (à relations)	Isolation, no influential forces (à no relations)
- Between the different parts of the team (e.g. defence and midfield) there are relationships that contribute to the teams' functioning like coherency, coordination and maintaining the balance of the game.	- The relationship between e.g. defence and midfield are not considered, we do not perceive them; parts of the team are considered separately; e.g. goalie coach is the only one for them.
Emergence, emerging (à synergy)	No processes that create new properties
- Mentioned relationships between the parts of the team create new features of the game. New opportunities are offered for their development in a more efficient and creative game. Many coaches observe some "solutions" of the players and trying to fit them into the concept of the game.	- Because they do not perceive or do not take into account the relationships, there are no ways to new features, e.g. team did not kick in.
<i>Synergy, system, a hierarchy of systems</i>	<i>No new features based on relationships</i>
- Team is well-coordinated, functioning as a whole, without misunderstandings.	No cooperation of players in the game instead of individualism.
Whole and holism, the interdisciplinary approach	<i>Only parts and characteristics of components, single-professionalism</i>
- Team is well-coordinated, functions as a whole without misunderstandings, the players are in fitness, technical and tactical training, which also takes health into account, etc., the specificities of the opponent and conditions in the next match, etc.	In consideration we cover only one aspect that is prevailing (e.g. aspect of physical fitness) and on the match we look only from this perspective. We interpret problems exclusively from this aspect.

<i>Network, interactions (of professions , ..)</i>	<i>No interactions (of professions , ..)</i>
- Team is well-coordinated, it functions as a whole, without misunderstandings, because the coaches/trainers interact with each other and with doctors and others; they also listen to the players, not only themselves, etc.	Trainer's analysis of the game does not take into account (or does not detect) other aspects (e.g. the aspect of physical fitness, psychological aspect, ambitions, etc. are excluded from the analysis).

The final thought on the question of which approach to the search for holism is correct, is: this is crucially dependent from the *subjective positions/starting points*, that means, from the human personality – values, emotions, talents, knowledge and skills, from the bases of thinking, decision-making, functioning and behavior. On the way from the *coach of individual shot* to *strategy coach of the team*, the individual must therefore increasingly phase out the focus on (only) many details. It must be the characteristic of a narrowly specialized trainer/coach who is interested only in individual segment of the topic. Therefore, high on the scale of complexity, the coaches' look at the work must be wider, work less detailed and more cohesive, width of the requisite holism larger and less deepened in details and currently important features, more into the long-term essence. Input and output information are less detailed, more global, less tactical and operational, more strategic, political, visionary. Selection of dialectical system of aspects (DSA) has to be adapted to reality and tasks.

It depends on DSA which *style of thinking* is used by who. Consideration of the reality, not only of ideas and dreams (what often occurs in novice trainers/coaches), is an essential base of the coach's work. Therefore, the formal education process of trainers/coaches has an important role to draw attention to these facts. Separate treatment of the segments of trainer's expertise (competence areas) namely exists due to requests for simplification and in a single phase of qualification.

Figure 3: The difference between (1) apparent, (2) requisite and (3) total holism.

←-----→		
One-sidedness with limitation to a single chosen aspect - the mental image	Dialectical system (= network), which combines all of essential and only essential aspects in a mental and/or emotional picture of this phenomenon, which corresponds to the law of requisite holism and therefore sufficiently reduces reductionism, so that it allows enough realistic hearing.	Total holism with the network of completely all aspects - mental images
SSG with a focus on a single aspect chosen. Example: SSG focusing exclusively on the development of special endurance	SSG, which include neither one individual selected aspect, except for the individual exercise phase, nor all of them at the same time, but on the basis of requisitely holistic analysis; it covers what we consider the most essential aspects and their interactions; it could also differ for every exercising individual separately according to his/her advantages and weaknesses as an individual and as a team member.	SSG which simultaneously cover technical/tactical aspects of the game (at the level of the individual, group and team) and enable concurrent development (maintenance) of all aspects of the game in synergy.

The second condition: innovativeness, not only routine, nor only creativity.

Previously it has been shown that some specially organized forms of SSG in some cases and at any given moment have become innovations (e.g. “positional games” of Barcelona), but not in others, because there they did not give new benefits to users. “The position game” therefore presents an upgrade of traditional SSG since in a more complex form of playing the team aspect of the tactic, which presents a special, in practice useful (!) feature. In general, we can say that especially at the lower levels of competition, in principle the old established routine is prevailing, although it is of course necessary to consider the legality of the planning of exercise process, the general requirements of the period of training, etc. Certain SSG are therefore deliberately “impoverished” in order to pursue a single, priority, specific goal (e.g. SSG with an emphasis on aerobic endurance components are often the content in the preparatory period) in a given stage. It raises the question about trainer's creativity, which shows the will and the ability to create something new; by definition it is different from innovation, which also contains the will and ability to change a created novelty in the new benefit, achieved in practice of the users of novelties. What is shown in Figures 4 and 5, has prevailed considerably more in the innovative environment, than in environments, over-addicted to routines.

The new idea, which was for example the idea of SSG succeeded, where the conditions for the formation of innovation from the 'Figure 4' were fulfilled. In soccer clubs mentioned in the introductory part, the ability and willingness to innovate is likely significantly higher than in others; probably the similar assessment applies to their social environment (the Netherlands is better known for their support of innovation than Serbia, e.g.). But, this capacity is the biggest in clubs, able to give additional content to SSG (e.g. some time ago "the pace games" in Germany, SSG at the level of team tactics in Barcelona etc.); thus, they carried out most consistently the invention-innovation-diffusion process, summarized in the Figure 5. At the same time, more than others, they fulfilled the conditions for innovative business.¹

¹ General characterization of the features of innovative business covers several aspects and assumptions, and no longer refers only to the manufacturing part of the organization, but to all activities and all parts of life in all organizations, including the football clubs. The definition includes the knowledge about the costs, mistakes and failures (in principle are unnecessary), and that any product, process or organization sooner or later becomes obsolete. Survival, and therefore good (or bad) business concerns everyone, and so we should purposely search for possible innovations everywhere (within ourselves and elsewhere) and continuously. The definition also covers the attitude about work (let us work as smart, not like crazy) and the attainment of requisite holism with the practice and ethics of interdependence (e.g. by use of ISO 26000, the international counselling standard on social responsibility). Because of the constant pressure from competitors, the innovating must cover everything and constantly, and the quality of competitive ability must be systemic, which includes proper price for customers, quality, flexibility, uniqueness, care for the natural environment and social responsibility, all interrelated. This is a condition for (business) excellence. Therefore, from the assesment that the present product/process/service is perfect, the order necessarily follows: "Let's innovate it immediately, because it is perfect under the existing criteria, which may be changed at any moment by the customers and competitors and, therefore, they may withdraw their money away from us." (cf.: Mulej et al., 2013).

Figure 4: The equation of the conditions for the emergence of innovation = in practice of the users of beneficial novelties. Legend: X = factor relationship; all the conditions are necessary for success.

Invention - suggestion	A new idea on SSG, new organization, a new process of learning or designing the game, new methods in the development of motor skills, etc.
X	
Enterprise and entrepreneurship	How present is the enterprise/entrepreneurial approach in the way of thinking and functioning in the club management? How much risks are the coaches and players willing to take? How do they overcome their fear and exaggerated respect for the opponent? How do they overcome their conceit, which is stifling their imagination? How bravely and wisely at the same time the trainers compose and enforce their long-term views on the development of the team and the effort for its achievement?
X	
Management	How do coaches compose short-term programs and enforce them into learning-training process (trainings, matches)?
X	
Holism	How and how much do coaches attain sufficient holism for the players to come to practice with pleasure and work extremely hard and ambitiously, because there is no boredom, workload and demands are placed slightly above capacity, which consequently rise?
X	
Coleagues	How much is the experts team receptive to learning, the development and introduction of novelties into practice? How much are they willing and able to take into account each other due to mutual differences, making them complementarity?
X	
Culture	Sports culture is associated with the characteristics of the society. Question: would a soccer environment where the skipping of midfield with long passing “traditionally” dominates, allow the development of SSG that are based on ball possession (e.g. position games) and on a continuous form of attack at all?
X	
Suppliers	Are the members of the professional staff (sports leader, the leader of the youth groups, coaches, fitness trainers, physiotherapists, ..., caretakers of the soccer field and equipment) receptive to implementation of innovations in the working practice? From whom do they learn?
X	

<i>Customers</i>	Spectators, sponsors, donors, parents of young players, their schools, clubs in higher leagues, to which the players of adequate quality could be sold to help maintaining the favorable conditions for the growth of new ones. And the like.
<i>X</i>	
<i>Competitors</i>	More successful clubs are generally more receptive to innovations that bring benefits at all levels of functioning (vision, organizational level, content selection, procedures of trainers selection) ... Competitors are also all the other contents of leisure time and all other ambitions and habits of the players and professional staff outside their own competition process.
<i>X</i>	
<i>Natural environment</i>	How healthy is the playing surface maintained (environment, changing rooms, immediate surroundings) so that the participants do not inhale anything dangerous for health, in terms of the location of the playing field, on traffic and climate, seasons, etc.
<i>X</i>	
<i>Broader social conditions</i>	The city conditions, opportunities to get support from citizens, schools, other organizations and the local management to the team/club, 'viole' and similar fan clubs and their harmful behavior (Večer, 19 Dec. 2015, reported that the penalty that was prescribed by the NZS in 2015, due to the behavior of only "viole" amounts over 33,000 euros.)
<i>X</i>	
<i>Random influences happiness</i>	Effect of referee's mistakes, poor game conditions, injuries, shots in the post, etc.

Figure 5: Likely providers (e.g. the Faculty and Institute of Sport) and customers (e.g. soccer clubs) by the footsteps of perfection of innovations, simultaneously probable users.

The degree of perfection of (possible) novelty	Likely offerers (in general)	Likely offerers (in soccer)	Likely customers (in general)	Likely customers (in soccer)
The new idea (any)	anyone	e.g. the authors of the idea of SSG	who senses promising ideas	e.g. who appreciates the idea of a new SSG
The invention (= a promising new idea)	anyone who suspects that the new idea is promising	e.g. authors who suspect that the idea of a new SSG is promising	no one unless it becomes a suggestion, because it disappears into oblivion and it is not in the offer	e.g. club that is willing to support the idea of a new SSG because it is considering it promising
Suggestion (= recorded promising new idea)	inventors and (research) organizations without a lot of will and knowledge for the technical development, production, marketing and trading of the invention	e.g. authors who know just how to record and show the idea of a new SSG to the others	entrepreneurs, prepared to take high risk and low compensation to the owner – inventor or the organization of the invention	e.g. club that gets enough convinced by the record of the idea on a new SSG, so it begins to explore and develop the potential innovation
Potential innovation (= usable but not yet beneficially used novelty)	inventors and research and developmental organizations with the knowledge and will for technical development, less so for production, marketing and trading of the invention, researched till the potential innovation	e.g. authors who are able and want to develop the idea of a new SSG till the practical usefulness, but not to trade it or practically use it otherwise	entrepreneurs ready for production and marketing, but less so for technical- technological and other exploratory and developmental risks	e.g. club which supports the development of the idea of a new SSG till practical use, but is not using it yet in practice or marketing

Innovation (= proven useful novelty; this is decided by customers, not the owners)	development and manufacturing organizations with a desire of rental benefits and indirect spread of its market (rarely individual inventors)	e.g. research organization or club that developed the idea of a new SSG, it is using it with new benefit and/or trades it	entrepreneurs and managers less willing to take production and market risk than to take the risk of obsolescence and dependence	e.g. club which has used the idea of a new SSG for itself with benefit
Former innovation - now beneficial routine	practitioners who use the established novelty in everyday practice and are the role models	e.g. club which uses the established idea of a new SSG and is a role model	practitioners who imitate the established novelty	e.g. club which imitates the established idea of a new SSG
Former innovation - now abandoned	authors of substitutional new ideas	e.g. authors of a new SSG that promises more than the existing one	supporters of alternative new ideas	e.g. clubs who support the ideas of a new SSG, that promises more than the existing one

Figure 6: *Invention-innovation-diffusion process (IIDP)*.

Stage of IIDP	The main inputs	The usual outcomes	The usual creators of the outcomes	The usual economic status
<i>Generating ideas, especially inventions</i>	Creative thought, time and resources for research	Promising brainchild from a piece of research, hidden information/knowledge	Imaginative, professional people and groups - researchers, professional and/or amateurs	Labor costs and research funds, no revenue/profit from the market
<i>Creating suggestions from inventions</i>	Written etc. expression of invention	Recorded promising brainchild/idea	The authors of the inventions and consultants for the recording process	The costs of preparing the record, no revenue/profit
<i>A potential diffusion of suggestions</i>	Offer on the market of inventions/ suggestions within and/or outside organizations	Partial sale, partial omission, partial transition to one's own development of the suggestion	Owners of the suggestions (authors and/or other) with co-workers	Offer costs, revenue/profit from sold suggestions
<i>Creating potential innovations from suggestions</i>	Creative thought, time and resources for development of the suggestion into a potential innovation	Utilizing new product/method/ procedure/ management style/ potential market/ organization/business object	Imaginative, professional people and groups - developers, professional and/or amateur	The cost of labor and resources for developing, no revenue/profit
<i>A potential diffusion of potential innovation</i>	Offer on the market of potential innovations within and/or outside the organization	Partial sale, partial omission, partial transition to one's own use of the potential innovation	Owners of the potential innovations (authors and/or others) and their (marketing) co-workers	Offer costs, revenue/profit from sold potential innovations

<p><i>Creating innovations from potential innovations</i></p>	<p>Creative thoughts, time and resources for the development of potential innovation into the innovation, including all operations</p>	<p>Beneficially applied new market/product/ method/procedure/ management style/ potential market/ organization - in users' organizations</p>	<p>Imaginative, professional people and groups - developers of novelties and market for them, professionals and/or amateurs, including all operations</p>	<p>Offer costs, revenue/profit from sold innovation (inside and/or outside the organization)</p>
<p><i>Any potential diffusion of innovations</i></p>	<p>Offer on the market of innovations within and/or outside the organization, in particular to the extra customers/clients (after the first ones)</p>	<p>In wider circles usefully applied new market/product/method/ procedure/ management style/ potential market/ organization</p>	<p>Owners of the innovation (authors and/or others) and their marketing co-workers</p>	<p>Offer costs, revenue/profit from additionally sold innovations (inside and/or outside the organization)</p>

Where the innovative business is practiced – also in the soccer clubs, because the top-quality soccer is a big, expensive and profitable business process, not just a sport – usually a process summarized in Figure 6 takes place. Under their influence, the novelties also spread to other clubs. Thus, the entire sports discipline is progressing in which such a process is happening. Of course, this does not take place automatically, because the human brain is designed for routine and people are – completely naturally – resisting to innovations, particularly the intrusive ones. In order to accept the novelties, they have to be either coauthors of the innovation or have great trust in their authors. But both should be capable of requisite holism of their conduct, not only of thinking, but of the entire practice.

Limitations and suggestions

The analysis included only the football realities of the countries in which the authors of the article have multiannual work experience. Reliably, with the analysis of other football realities (e.g. Northern European, South American, North American, Central Asian, etc.) we would get a more detailed description of the developmental path of SSG and their versatile use, but that was not the core purpose of the article, while considering SSG only in terms of the learning potential and usefulness offered by this practical work methods in terms of holism.

An important factor is also the contribution of foreign coaches, who, by entering the various elements and sporting habits and vision, contributed to the development of the profession in each country. This aspect is very difficult to assess at the systemic level, despite the known examples of historically successful connections like e.g. between the Dutch and Spanish/Catalan football and the like.

In terms of increasing the learning potential of SSG, we find, that each federation should already on the systemic level take care of a greater emphasis on pedagogical and particularly on narrower didactical competences of football coaches, and particularly on the harmonization of standards of knowledge (UEFA 2015), especially for coaches on youth level and of encouraging a more creative approach. Despite the efforts at the institutional level (UEFA 2015), the quality of education in the individual members of UEFA remains very different (Sedej, 2016).

A particularly important factor is also the way of transmission of knowledge in courses for licensing. Higher quality methods of transmission of knowledge are going more towards practical knowledge, project and problem learning and the need to create relevant learning situations during education and the concomitant need for contextualization of the acquired knowledge (Pavlin, 2012; Vannini & Mantovani, 2007; Zecca, 2014). In general, one should avoid increasing the accumulation of isolated information and promote a holistic, systemic approach, sample thinking, with greater emphasis on the processes and connections and less on data and state (Marentič Požarnik, 1995). Precisely this aspect is, at the licensing procedures, very different from federation to federation (Sedej, 2016). Also, the above-mentioned creation of relevant learning situ-

ations (hosting traineeship, internships, etc.), as a necessary precondition for the quality of qualification of coaches (UEFA 2015), presents a significant problem for individual coaches, since the visit of elite sports centers and the exchange of detailed information on the characteristics of the training process in fact, is difficult to achieve.

CONCLUSION

SSG are very common methods in the process of soccer training and are used for very different purposes. Despite the irrefutable prevalence and effectiveness of this approach, there are still very large reserves for their upgrade in the direction to even greater holism. In this sense, the coach's methodical/didactical ability is shown as a very important competence, which should be further developed within the process of education of coaches, which is unfortunately not unified in European area. Greater emphasis should therefore take place not only on creativity but also on the actual will to innovate the existing football practices.

In this paper, we have tried to present the possible developmental guidelines, in particular, for overcoming of the typical dualism that prevails in the modern soccer world, i.e. fight between highly specialized/analytical and the routine-addicted approach and those broader, more holistic approaches. This aspect is also directly connected with the (sports) cultural stereotypes, which are typical for every football reality and are its most important component at the same time.

In the foreground there is the question of the approach to SSG, which would avoid one-sidedness and routine in favor of increasingly interdisciplinary and holistic approach. One should encourage the introduction of the new ideas (innovations) beside the need for increasingly innovative operations of the soccer clubs. With the use of USOMID method, the conditions for the admission of SSG were analysed in football practice as a real innovation at work.

REFERENCES

- Athanasios, K., & Eleftherios, K. (2009).** Effects of small-sided games on physical conditioning and performance in young soccer players. *Journal of Sports Science and Medicine*, 8, 374-380. [VIEW ITEM](#)
- Aguiar, M., Botelho, G., Lago, C., Macas, V., & Sampaio, J. (2012).** A review on the effects of soccer small-sided games. *Journal of Human Kinetics*, 33, 103-113. [VIEW ITEM](#)
- Bangsbo, J. (1998).** The physiological profile of soccer players. *Sport Exercise Injury*, 4, 144-150.
- Bangsbo, J., & Lindquist, F. (1992).** Comparison of various exercise tests with endurance performance during soccer in professional players. *International Journal of Sports Medicine*, 13(2), 125-132. [VIEW ITEM](#)

- Balague, G. (2013).** Pep Guardiola, drugačen način razmišljanja [Pep Guardiola, Another Way of Winning]. Ljubljana: Osminka & Co.
- Bertalanffy, L. (1979).** General systems theory. Foundations, Development, Applications. Revised Edition. Sixth Printing. Braziller, New York.
- Cano, O. (2012).** El juego de posición del F.C. Barcelona. Concepto y entrenamiento [Positional games at FC Barcelona. Concept and training]. Vigo: MCSports.
- Cano, O. (2015).** Allenare i concetti del gioco di posizione [Training the concepts of positional games]. L'allenatore [The Coach], (5), 29-33.
- D'Ottavio S., Colli, R., Bosco, C., & Tranquilli, C. (1997).** Considerazioni fisiologiche su alcuni mezzi specifici nel gioco del calcio [Physiological considerations on specific soccer means]. Coaching and sport science journal, 2(2), 56-64.
- Elsner, B. (1997).** Nogomet [Football]. Teorija igre. Ljubljana: Fakulteta za šport, Inštitut za šport.
- ISO 26000 (2010).** Guidance on social responsibility. Retrieved: http://www.iso.org/iso/discovering_iso_26000.pdf.
- Marentič Požarnik, B. (1995).** Vzgoja/pedagogika za nizkoentropično družbo [Education/pedagogy for low entropic society]. In F. Pediček (ed.), Današnja identiteta pedagoških znanosti (pp 104–105). Ljubljana: Pedagoški inštitut.
- Mulej, M. (1979).** Ustvarjalno delo in dialektična teorija sistemov [Creative work and Dialectic System Theory]. Razvojni center Celje.
- Mulej, M., & Kajzer, S. (1998).** Ethics of interdependence and the law of requisite holism. In M. Rebernik, & M. Mulej (Eds.), STIQE '98, proceedings of the 4th International Conference on Linking Systems Thinking, Innovation, Quality, Entrepreneurship and Environment (pp 56–67), Maribor: Institute for Entrepreneurship at Faculty of Business Economics.
- Mulej, M., Božičnik, S., Čančer, V., Hrast, A., Jere Lazanski, T., Jurše, K. et al. (2013).** Dialectical Systems Thinking and the Law of Requisite Holism concerning Innovation. Emergent Publications, Litchfield Park, Arizona.
- Pavlin, S. (2012).** Slovensko visoko šolstvo s perspektive zaposljivosti diplomantov [The Slovene University Studies from the perspective of the graduated students' employability]. Ljubljana: Fakulteta za družbene vede. [VIEW ITEM](#)
- Pišot, R. (1994).** Vpliv različnih metod dela na razvoj psihosomatičnih dimenzij enajstletnih učencev [Impact of various methods of work on the development of psychosomatic dimensions of 11 year old pupils]. Ljubljana: Magistrska naloga, Fakulteta za šport.
- Rampinini, E., Impellizzeri, F. M., Castagna, C., Abt, G. A., Chamari, K., Sassi, A., & Marcora, S. M. (2007).** Factors influencing physiological responses to small-sided soccer games. Journal of Sports Sciences, 25(6), 659-666. [VIEW ITEM](#)
- Sedej, E. (2016).** Analiza kakovosti trenerskega izobraževanja v državah pod okriljem evropske nogometne zveze (UEFA) [Analysis of the quality of football coaching educational program under Union of European Football Association (UEFA)]. Maribor: Diplomsko delo, Univerza v Mariboru: Fakulteta za organizacijske vede. [VIEW ITEM](#)
- Seno, M., & Bourrel, C. (1989).** Allenare i dilettanti [Training amateur soccer players]. Bergamo: Juvenilia Editrice S.r.l.
- UEFA. (2015).** UEFA Coaching Convention 2015. Retrieved from: http://www.uefa.org/MultimediaFiles/Download/uefaorg/CoachingCoachedu/02/29/42/76/2294276_DOWNLOAD.pdf

- Vannini, I. & Mantovani, L. (2007).** I giovani insegnanti laureati in Scienze della Formazione primaria. Un'indagine empirica tra gli abilitati del Corso di Laurea di Bologna [Young teachers graduating from the Education Department of Bologna University. An empirical study of graduates]. *Ricerche di pedagogia e didattica*, 2, 1-55. [VIEW ITEM](#)
- Verdenik, Z. (1983).** Igralne oblike kot sredstvo socializacije igre [Small sided games as means of the play socialization]. *Teze za predavanje visokošolskim učiteljem (osebno gradivo)*. Ljubljana: Visoka šola za telesno kulturo.
- Verdenik, Z. (2003).** Z Jefom navzgor - skupaj do zmage ("Win by all"): značilnosti procesa treniranja in tekmovanja nogometnega moštva Jef United Ičihara v J-ligi 2001 [Climbing with Jef- together towards success (Win by all): training and competition process characteristics of the Jef United Ichihara football team in J-league, year 2001]. Ljubljana: Fakulteta za šport, Inštitut za šport.
- YDSA, (2016).** History of Small sided games. Retrieved from: <http://www.ydsocceracademy.com/index.php/articles/35-history-of-small-sided-games>.
- Zecca, L. (2014).** Tra "teorie" e "pratiche": studio di caso sui Laboratori di scienza della Formazione primaria all'Università di Milano Bicocca [Between Theories and Practices: study case about on-campus laboratories (LPD pedagogical-didactical laboratories) in Primary Teacher Education program at Milano – Bicocca University]. *Giornale italiano di Ricerca Educativa*, 7(13), 215-229. [VIEW ITEM](#)
- Colli Roberto**, personal communication, May 20th 2015
- Costantini Maurizio**, personal communication, May 8th 2015
- Seno Maurizio**, personal communication, May 5th 2015