Development of Physical Skills and Personality in High School Students Through Football Training as an Extracurricular Activity

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Abstract: There is a growing interest in extracurricular and out-of-school activities for pupils, given their positive effects on the development of individuals. In the present study we aimed to develop a training program for the game of football as an extracurricular activity that integrates both physical skills and personality traits in high school students. The research design assumed a pre-posttest design, with the dependent samples t-test used as the statistical method of investigation. The physical abilities tracked in the study were body mass index, body harmony, exercise endurance, fitness, body recovery after exercise and endurance running. As personality traits we looked at dominance, emotional stability, spontaneity, sensitivity, intelligence, conformity and discipline, sense of self, and refocusing on planning as a positive cognitive-emotional coping strategy. The results show that football, as an extracurricular activity, offers the possibility of harmonious physical and mental development of young people.

Keywords: football, extracurricular activities, experiential learning, personality traits.

INTRODUCTION

Physical education is an integral part of the education process and is one of the subjects with new possibilities for achieving the general objectives of education. In this context, an increased interest is being shown in extracurricular activities in physical education and sport not only by schools, but also by pupils and their parents. Extra-curricular activities refer to all educational activities organised and planned in educational institutions or other organisations with an educational purpose, but less rigorous than formal ones. Extra-curricular activities are carried out outside the school curriculum, led by qualified persons, with the aim of shaping the pupil's personality provided by formal education or developing particular aspects of the pupil's personality. Game and movement are components that help harmonise school and life. Participation of pupils in physical education and sport activities means providing them, in addition to physical training, with the development of motor skills, getting used to team spirit, group work, discipline, order and demand.

The Eurydice report of European Commission's 2013 on physical activities and sport in schools in Europe shows that, in Romania, the national curriculum includes gymnastics, athletics, sports games or those decided by the school (European Commission, 2013). Among team games, football is one of the most loved by both girls and boys (Vişan & Cojanu, 2020). Popescu and collaborators (2023) showed that football is often found in students' choice of extracurricular activities, the pupil having the right to choose the sport he/she practices (Popescu et al., 2023). The formative values of the game of football „recommend it as an effective means of school physical education, which is why it is present both in compulsory physical education lessons in grades I - XII and in other sports-recreational activities in middle schools and high schools” (Balint, 2007, p.7).

In the Romanian literature we did not find any studies investigating how extracurricular activities in the game of football contribute to the development of physical skills and personality dimensions of young people. With this in mind, the present study aims to present a training model for the game of football as an extracurricular activity that integrates both physical skills and personality traits in high school students. The research design assumed a pre-posttest design, with the dependent samples t-test used as the statistical method of investigation. The physical fitnesses tracked in the study were body mass index, body harmony, exercise endurance, fitness, body recovery after exercise and endurance running. As personality dimensions we looked at dominance, emotional stability, spontaneity, sensitivity,
intelligence, conformity and discipline, sense of self, and refocusing on planning as a positive cognitive-emotional coping strategy.

LITERATURE REVIEW

The importance of sport and physical education in the development of children and adolescents, as indeed of the entire population, is unanimously recognised, which is why they are given special attention in school and extracurricular programmes. Linking education with sport contributes to the development of the body in general, to the modelling of perseverance in learning, self-discipline, adaptive behaviours, the ability to cope with failure and, above all, to the development of a positive attitude towards school, self and others (Filipiak & Łubianka, 2020; Field, Field et al. 2001; Ferron et al., 1999). Extra-curricular physical and sports activities are organised with „the aim of making physical activities more accessible and attractive to young people, the school providing not only specially equipped spaces for this purpose, but also a safe and secure space for them to take place, an appropriate pedagogical climate (enjoyment, learning, joint effort) and the effectiveness of the intervention (skill of the physical education teachers, collaboration with coaches, co-optation of parents), so that all children and young people progress according to their level and needs” (Popescu et al., 2023, p.992). In addition, when they take the form of competitions, this type of activity mobilises young people, stimulating their interest and encouraging them to mobilise their strengths.

By definition, the organisation of extra-curricular physical education and sport activities offered to pupils by the school takes into account pupils' interests and preferences, with football enjoying great popularity. The popularity of football, unmatched in any other sport, lies in the irresistible appeal of the game, which has propelled it from generation to generation, from country to country, from continent to continent, so that today there is no place in the world where football is not known, learned and played with passion (Balint, 2007).

In the game of football it is not only skill and talent that are important, but also the physical abilities and personality of the players that determine behaviour. Sports activities, in general, involve participation, competition, communication, develop an attitude of respect and cooperation (Goncalves et al., 2010; Khudolii et al., 2020). In the game of football all these become imperative requirements. To win a match, teamwork is an absolute requirement because football is a team sport, a group sport. A team is made up of several individuals who each contribute to the common goal of winning a match (Malone & Lorimer, 2020). Furthermore, teamwork
refers to interactive and interdependent behaviour within a team (McEwan et al., 2017).

As in any other sport, the personality of the players is significant in football (Allen et al., 2013), not only in competitions but also in tactical and physical training. In addition, attributes such as conscientiousness, dominance, self-control, social skills and courage are traits that characterize football players (García-Naveira, & Ruiz-Barquín, 2013).

**METHODOLOGY**

**Participants**

The participants in the study, all boys (N=15), are students in the 11th and 12th grades at a high school in the town of Horezu, Valcea County, aged between 17 and 18 years (M=17.8; SD=0.414), who voluntarily opted for playing football as an extracurricular activity at the suggestion of the school. Student participation was based on informed parental consent.

**Instruments**

To assess the personality traits and somatic-functional characteristics of the subjects we used the following tools:

Personality traits - The High School Personality Questionnaire (HSPQ) (Cattell et al., 1958), a self-report inventory for children and adolescents ages 12-18. The questionnaire measures 14 personality characteristics identified by factor analysis: warmth (Factor A), intelligence (Factor B), emotional stability (Factor C), excitability (Factor D), dominance (Factor E), cheerfulness (Factor F), conformity (Factor G), boldness (Factor H), sensitivity (Factor I), withdrawal (Factor J), apprehension (Factor O), self-sufficiency (Factor Q2), self-discipline (Factor Q3), and tension (Factor Q4). The questionnaire contains 142 items, each factor is measured by 10 items and 2 buffer items. In this paper the raw scores obtained by the subjects were used.

Cognitive coping - Emotional Cognitive Coping Assessment Questionnaire (CERQ), Romanian version (Perțe & Țîncăș, 2010), is a multidimensional, self-assessment questionnaire that measures the cognitive coping strategies of adults and adolescents. The questionnaire has 36 items divided proportionally on nine scales: Self-blame, Acceptance, Ruminating, Positive refocusing, Refocusing on planning, Positive reassessment, Putting into perspective, Catastrophe, Blaming others. Each CERQ subscale contains 4 items. Test-retest fidelity is significant on every scale (as cited in Popescu, Mihăilescu & Ciucurel, 2023). For the present research we selected...
items that refer to the cognitive adaptive coping strategy, Refocusing on planning.

Quetelet Body Mass Index (Q.I.) - measures weight in relation to height and is a screening tool that can determine which weight group a person falls into. (underweight, overweight or obese).

Erissman Index (IE) - is the index which indicates body harmony, obtained from the difference between the thoracic perimeter measured at rest and the mid-height.

Ruffier Test (RI) - it is a fitness test that measures cardiovascular endurance at standard exercise.

Dorgo Index (DI) - aims at the body's recovery after exertion. Through the evolution of the heart rate after the cessation of physical exertion. The Dorgo index reflects the human body's ability to recover after exertion. This test highlights, through the pulse, the behaviour of the heart in exertion.

1000m endurance run (R1000m) - physical exertion test that determines the effort capacity.

**Procedure**

Training took place on the premises of the high school, either in the gymnasium, on the synthetic field, or at the sports base of the local football team, during the first semester of the current school year. The training sessions took place during the week and lasted between 70-90 minutes. The variables proposed to be analysed were measured at the beginning (pretest) and end (posttest) of the study.

A fundamental feature of the game of football is that each player occupies a tactical position on the pitch, namely the goalkeeper, whose function is to prevent goals being conceded, the forwards, whose role is to score goals, the full-backs, who defend dangerous areas and stop the opposing team from scoring, and the midfielders, whose role is to retrieve the ball from the opposing team, maintain possession and pass it to the forwards and also to score. All these positions require both good physical and tactical training and psychological dimensions such as dominance, emotional stability, spontaneity, sensitivity, intelligence, conformity and discipline, sense of self, as well as refocusing on planning as a positive cognitive-emotional coping strategy.

Using the football pitch as a framework allows us to better understand the organisation of training in order to develop the personality traits that characterise a football player. The framework integrates the development process in the areas of the football pitch, with the defensive
area being where young people start their journey in learning the game and where the focus is on building a foundation (willingness to learn-B, concentration-G, adaptability-W, goal setting, self-motivation-G, self-confidence-E). The central, middle area of the field focuses on interpersonal traits (sensitivity-W, self-control-C, communication-F, discipline-Q3), while the attack area involves a mix of traits identified as representative (decision-making and conflict resolution-Q3, problem-solving-B, self-awareness-G, self-reflection-C, spontaneity-D).

![Personality traits: pre-design phase](image)

The use of the football pitch as a working tool has also allowed us to develop flexible tactical schemes and techniques of play according to FIFA U-17 World Cup standards:

- 4-4-2 formation, which can offer different variations of play, with two defensive midfielders and two lateral midfielders, covering all the flanks, both offensive and defensive.

- 4-3-3 formation, attacking, a hybrid between 4-2-3-1 and 4-4-2 with six attacking players who will provide the attacking side and two midfielders to close down in front of the full-backs. This type of formation allows for permutations or even changes of system, going from a 5-2-3 in defence to a 3-2-5 in attack, from a 4-2-3-1 in defence to a 3-4-3-3 in attack, from a 4-1-4-1 in defence to a 4-1-2-3 in attack, etc. (Memmert et al., 2019; Magee, 2023; Bauer et al., 2023).

- 3-5-2 formation for the development of personality traits and interpersonal skills.
The training program was designed by the author of this study, taking into account the methodology of teaching football in middle and high school. The training program was based on experiential learning, unanimously praised by educational and sports specialists as one of the best learning methods (Beard & Wilson, 2013). “Experiential learning is the process whereby knowledge is created through the transformation of experience. Knowledge results from the combination of grasping and transforming experience” (McCarthy, 2010). In the game of football, experiential learning makes it easier to learn a new technique or improve your game. For example, learning to head the ball requires the coach to first describe the technique verbally: he or she will specify that in order to head the ball effectively, the student's eyes must be on the ball and touch the ball with the head. Then the coach has to demonstrate the technique, how to perform it correctly. The athletes, the pupils, observing the coach, reproduce what they have been shown, either correctly or incorrectly. Immediate feedback from the coach allows the students to correct themselves and perform the technique correctly. Concentration is absolutely necessary to execute the technique accurately. After practice, the coach has a discussion with the students about how they did in the activity and where they went wrong and what they need to do to improve. There is also an emphasis on self-improvement and practice to learn on their own. This is analogous to introducing a new concept in a lesson.

The coach was the author of the study and the psychological assessment was done by the high school psychologist. Table 1 shows the training program based on experiential learning:

Table 1. Football training program as an extracurricular activity for high school students

<table>
<thead>
<tr>
<th>Stages of training</th>
<th>Support materials</th>
<th>Strategy</th>
</tr>
</thead>
<tbody>
<tr>
<td>Warm-up</td>
<td>Warm-up physical activities</td>
<td>Guided activities</td>
</tr>
<tr>
<td>Basic training 1</td>
<td>A set of games for developing physical skills (designed by the author of the study)</td>
<td>Experiential learning (play, reflection, discovery, application)</td>
</tr>
<tr>
<td>Basic training 2</td>
<td>A set of games for developing a personality trait targeted by the study (designed by the study author)</td>
<td>Experiential learning (play, reflection, discovery, application)</td>
</tr>
<tr>
<td>Basic training 3</td>
<td>6 x 6 football game based on FIFA rules</td>
<td>Coach-led games with transfer of playing positions</td>
</tr>
<tr>
<td>Return</td>
<td>Relaxation activities</td>
<td>Guided activities</td>
</tr>
</tbody>
</table>
The warm-up phase is preceded by the players lining up, greeting and checking equipment and fitness, followed by light running, jumping and ankle exercises. Last but not least, this stage involves focusing attention, so attention exercises are initiated.

The first stage of training involves the implementation of activities involving the development and strengthening of athletic and physical qualities, strength exercises, development of muscle groups through muscle strengthening exercises.

The second stage of the training, experiential learning, involves guiding the players to carry out the designed game, encouragement and correction, according to the rules of the game. Encouragement and correction project the reflection phase, an important moment in which values, respect and openness towards others are transmitted, the development of emotional mastery, courage, the planning of next actions, perseverance, etc. The reflection phase is decided by the coach, depending on the situation of the game and the players' actions on the pitch.

The third stage involves guiding players in acquiring position-specific playing techniques, movement techniques and, of course, basic techniques, organisation (offensive and defensive) and adaptation to different playing systems. It is the coach's task to produce the reflection phase by encouraging or sending appropriate messages to correct the playing technique for each player, individual pupil, depending on the problem he identifies in him.

Physical and psychological relaxation involves activities to bring the body back to normal in order to restore the body's energy levels, both physically and mentally, followed by the end of the workout.

In each of the stages described feedback is important, with the coach having the opportunity to correct and highlight the progress made by each player.

The study was carried out with the consent of the management of the "Constantin Brâncoveanu" High School in the municipality of Râmnicu Vâlcea, Vâlcea County, in accordance with ethical and legal norms. Students' participation was voluntary, based on informed consent, and they were assured that their personal data would be kept confidential. It was also made clear that participation in the study did not involve rewards of any kind, and students could withdraw at any time without consequences.

RESULTS

Physical-motor skills and personality traits were assessed at the beginning and end of the programme. Statistical processing of the data obtained was performed using IBM SPSS Statistics v20.0 software. SPSS was
used to make comparisons between the time points of the variables testing, paired samples t-test was used. Effect size was calculated using Cohen's d, with 0.2 indicating a small effect, 0.5 a medium effect and above 0.8 a large effect (Cohen, 1988).

Table 1 shows the results of the comparison of the means at the two test points for each variable.

Table 2. Mean, standard deviation and dependent t-test value for somatometric variables

<table>
<thead>
<tr>
<th>Variabile</th>
<th>Pre-Test</th>
<th>Post-Test</th>
<th>t</th>
<th>df</th>
<th>p</th>
<th>Cohen’s d</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Mean (M1)</td>
<td>SD</td>
<td>Mean (M2)</td>
<td>SD</td>
<td></td>
<td></td>
</tr>
<tr>
<td>QI</td>
<td>23.1</td>
<td>3.0</td>
<td>22.0</td>
<td>2.4</td>
<td>3.2</td>
<td>14</td>
</tr>
<tr>
<td>EI</td>
<td>5.5</td>
<td>2.5</td>
<td>6.6</td>
<td>2.4</td>
<td>-2.4</td>
<td>14</td>
</tr>
<tr>
<td>RI</td>
<td>13.2</td>
<td>4.0</td>
<td>4.3</td>
<td>2.5</td>
<td>7.8</td>
<td>14</td>
</tr>
<tr>
<td>DI</td>
<td>12.9</td>
<td>3.7</td>
<td>4.7</td>
<td>2.4</td>
<td>7.9</td>
<td>14</td>
</tr>
<tr>
<td>R_1000m</td>
<td>4.0</td>
<td>0.4</td>
<td>3.6</td>
<td>0.3</td>
<td>5.4</td>
<td>14</td>
</tr>
</tbody>
</table>

Note: N=15; QI – Quetelet Index (I.Q); EI – Erissman Index; RI – Ruffier Index; DI-Dorgo Index; R 1000m – 1000m endurance run

Comparing the means of the analysed variables at the beginning and at the end of the programme, statistically significant differences are observed in IQ (M1=23.1, M2=22.0), EI (M1=5.5, M2=6.6), RI (M1=13.2, M2=2.32), as well as DI (M1=12.9, M2=4.7) and R_1000m (M1=4.0, M2=3.6). The effect size is significant, so the results obtained have both statistical and practical significance. The significance threshold p<.05 demonstrates that the intervention had an effect.

Table 4 shows the results obtained by statistically processing the scores obtained by the subjects in the two moments of the test on the personality dimensions investigated.
The results obtained reveal significant differences between the two testing times for the B-Intelligence dimension (M1=5.20; M2=6.60), W-Warmth dimension (M1=9.2; M2=11.0), E-Dominance (M1=10.2; M2=12.1), C-Emotional Stability (M1=11.40; M2=13.4), G-Conformity (M1=11.00; M2=12.87) and Q3-Self-discipline (M1=6.47; M2=9.47), which shows that there is an interaction between the extracurricular activities program in football game and the mentioned personality dimensions at a significant effect size (Cohen's d >0.5). No statistically significant differences were observed for the dimensions D-Excitability and R-Focusing on planning (p>0.05).

**LIMITS** and **DISCUSSIONS**

The present study aimed to investigate how football training as an extracurricular activity can contribute to the development of both physical skills and personality dimensions in high school students. The results obtained are relevant, despite the fact that not all variables investigated yielded statistically significant results. In accordance with the literature it has been demonstrated that football offers particularly favourable conditions for the complex development of motor skills and qualities (Alesi et al., 2015; Erceg et al., 2008) as well as personality dimensions (Gould, & Carson, 2008). The complexity and diversity of the game systems requires the use of strategies to develop tactical thinking and other features that contribute to the ultimate goal of the game, namely scoring goals and winning matches.
There are authors who state that combining several variables is the right procedure to increase team and player complexity (Eugster, 2012; Liu et al., 2015). The fact that football offers players the opportunity to alternate between individual and team play contributes to the development of personality traits that facilitate this transition. Pike and his collaborators (2020), for example, have shown that the transformation of individual play into teamwork leads to the development of player character (Pike et al., 2020). Also, a number of authors have argued that the relationship between personality and playing a sport is likely bidirectional (Allen & Laborde, 2014; Allen et al., 2015b), meaning that on the one hand, sport can influence personality development, and on the other hand, personality development can influence engagement in physical activity and sport.

The game of football is an experiential learning activity in that it involves improving knowledge, skills and personality traits through practical experience. This study is in line with other research which shows that football, as an experiential learning activity, enables the development of the qualities of individuals, of players, so that they can reach their full potential. Designing training based on experiential learning theory, i.e. in the form of games, understanding and mastering their techniques, reflecting on positive and negative aspects leads to the improvement of young people's motor skills. Meiners and Wisdom (2020), for example, argued that experiential learning usually encourages the development of collaborative skills between individuals. Reflecting on each action is an important stage in training, as each player has the opportunity to discover, understand and deduce what the coach expects from him. Sulistiyono and colleagues (2021) show that in player experimenting, the reflection is an important stage in acquiring moral ideals, respect and success, skills for success later in life (Sulistiyono et al., 2021).

Last but not least, it should be noted that in football, more than in any other sport, it is generally acknowledged that emotions are greatly heightened (Hofseth, 2016). Proper management of success or failure develops over time with experience (Sagar et al., 2010). Therefore, the fact that for refocusing on planning as a cognitive-emotional coping strategy there were no significant differences between the two testing times, may be due to students' lack of experience. This makes coaches focus on the development of adaptive coping in players, especially problem-solving focused coping (Kristiansen, 2016).

We believe that the main limitation of the present study is the absence of a control group. The control group could not be set up because the choice of extracurricular activities in the football game proposed by the
high school is a decision that belongs exclusively to the student, this being his right (Popescu et al., 2023). Another limitation of the study is, in accordance with the literature, the use of a single personality measure (Aamodt et al., 1982). For a more comprehensive investigation of athletes' personality traits and effort capacity, more diverse tools may be needed (Malinauskas et. al., 2014).

CONCLUSIONS

The results of this study show that young people can engage in a variety of physical, cognitive, and emotional activities, challenged by the game of football. Football is an extra-curricular physical education and sport activity that provides great opportunities through which young people develop as individuals and as members of society. As a field of bodily activities, it encompasses the motor actions of the physical education process. Practicing the game of football contributes to the development and improvement of coordinated movements, the ability to quickly engage in the tempo and rhythm of activities on the field, quick adaptation to changing situations in the management of the game, which implies traits such as intelligence, self-control, ability to concentrate and discipline. The game of football has positive educational and personal development effects.

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