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Editorial Note

Dear all,

As part of the scientific process and educational procedures of every scientific worker, which are an integral part of being a scientist, we have decided to publish a new issue of our peer reviewed journal Sports Science. This issue is made up of different problems that the science of kinesiology studies.

All papers presented in the journal are part of more narrow scientific sporting fields, and they are a sum of a large number of scientific fields that make up the function of realization of kinesiology. The journal represents papers in areas such as transformation processes, sports games, sports management and marketing, basic sports, teaching methods in sports, as well as in the field of sports medicine.

Our editorial staff is deeply convinced that the development of science in sports is possible only with a free exchange of ideas that is not limited by state and national borders. Therefore, we must emphasize that the authors of papers published in this issue come from eight countries, and that they presented their papers in the areas in which they specialize. The Scientific Board of the Journal is made up of relevant professors in the field of kinesiology, which can be seen through the selection of high quality papers, which speaks to the seriousness and the value of the journal. This can be achieved primarily through competent and fundamental reviews and engagement of top reviewers from abroad.

In addition, a big thank you to the authors of the good work, who have contributed to the quality of the journal, and we wish them to be as current and as high quality in future issues of the journal as they have been so far. Special thanks to the members of the review committee who with enormous enthusiasm and willingness properly and efficiently reviewed the papers the editorial board has received.

We hope also that we will live up to the expectations and trust of the authors and that we they will continue to work together with us in the future. Our wish is, of course, to win over new associates, so that the following issued are richer, more interesting, and have more variety.

Editor in Chief

Damir Ahmić, PhD

FINANCING OF SPORT IN THE REPUBLIC OF SERBIA AS A PART OF STRATEGY FOR DEVELOPMENT OF SPORT

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¹ Faculty for Business Economics and Entrepreneurship, Belgrade

² College of Entrepreneurship, Belgrade

Original scientific paper

Abstract

Sport is the most present form of keeping fit in the modern world. It is present in various forms of games of movements and exercises, which are marked with a great emotional pleasure and competitions among individuals or teams. According to the European sports charter, sport is represented by all the forms of physical activities, through organized and unorganized participation. The aim of these activities are expressing and improvement of physical readiness and mental well-being, creation of social relation or achieving results at competitions on all levels.

In the Constitution of the Republic of Serbia, sport is defined as a category of special social interest and is largely financed from the budget of the Republic of Serbia. Because of that legal solution, the state with its authorities has the right and the duty to determine and think of the aims, criteria and priorities for investing the budget means in sport.

In 2008, at the proposal of the Ministry of youth and sport, the government of the Republic of Serbia adopted the strategy for development of sport in the Republic of Serbia for the period from 2009 to 2013.

Strategy of sport development gives the answer to the question in what way and in which segments of sport it is most efficient and most desirable to invest the money of tax payers, and based upon that investment how to realize the public interest in the field of sport in the best way.

Key words: *Financing of sport, sport, strategy.*

Introduction

Sport is the most present form of keeping fit in the modern world. It is present in various forms of games of movements and exercises, which are marked with a great emotional pleasure and competitions among individuals or teams.¹ According to the European sports charter, sport is represented by all the forms of physical activities, through organized and unorganized participation. The aim of these activities are expressing and improvement of physical readiness and mental well-being, creation of social relation or achieving results at competitions on all levels.

In the Constitution of the Republic of Serbia, sport is defined as a category of special social interest and is largely financed from the budget of the Republic of Serbia. Because of that legal solution, the state with its authorities has the right and the duty to determine and think of the aims, criteria and priorities for investing the budget means in sport.

In 2008, at the proposal of the Ministry of youth and sport, the government of the Republic of Serbia adopted the strategy for development of sport in the Republic of Serbia for the period from 2009 to 2013. For the first time in the long history of institutionalized sport in our country, the plans were systematized in the form of the Strategy, which clearly defines the vision and mission of the Ministry of youth and sport as well as the time frames for accomplishing certain strategic goals.

Strategy of sport development gives the answer to the question in what way and in which segments of sport it is most efficient and most desirable to invest the money of tax payers, and based upon that investment how to realize the public interest in the field of sport in the best way.

Strategy of development as an important indicator of sport development

Strategy represents the set of principles on sport management and its strategic directing in the future with defining the role of state in encouraging sport for all categories through sports activities and all segments of population, but with maintaining the autonomy of sport and its political neutrality as a historical heritage and international standard, whose obeying and realizing represents one of the commitments of this strategy. The adopting of the Strategy of sport development in the Republic of Serbia represents a significant step, because the sports system is for the first time organized and arranged, with clear defining of the roles of certain subjects in its functioning.

Since sport is an inseparable part of society and its very significant cohesive factor, as its first and basic priority the Strategy recognizes sport of children and the young, their proper development, spending free time in a healthy way and adopting the healthy lifestyles, as a base for recruiting the future champions. The second priority of the Strategy represents the development of sports infrastructure and preserving it, in order to provide the adequate conditions for engaging in sports activity. Top sport represents the third

¹Ђурђевић, Н. (2004): «The role of local communities in the field of sport»; Faculty of Law, Kragujevac; Administration for sport of Ministry of education and sport in the Republic of Serbia

priority of the Strategy as the most transparent part of the system of sport and the natural outcome of investing, along with the first two priorities.

The Strategy defined 22 strategic goals, which are realized through 18 strategic fields which cover the total system of sport in the Republic of Serbia. The action plan for the realization of the Strategy, within the strategic areas there are specific goals and activities for their achievement, provides the implementers, indicators for their following as well as the time frame for their realization. Some of the planned activities contribute to realization of the specific goals from the two or more strategic areas, which should contribute to the high degree of efficiency.²

Legal regulation in the field of sport from the finance point of view

In the Republic of Serbia there is a long tradition of legal regulation in the field of sport, as well as the practice of financing of organizations that are the most important international sports manifestations in the Republic of Serbia, as well as the continuous financing of the program of participation of athletes at large competitions and providing financial support to a large number of sports organizations by the Republic. Action plan of the Ministry defines the precondition for improvement of conditions for practicing sport through realization of general aims referring to the creation of conditions for establishing the efficient finance system in the Republic of Serbia

and through creating the conditions for establishing control system of spending the budget means of sports organizations at all levels. Besides the financing of sport from the budget of Ministry of youth and sport, which is larger in scope every year, there is also a significant investing in sport and sport activities by the budget of Autonomous Province of Vojvodina and budgets of local self-governments.

Establishing an efficient system for financing of sport

Finance system of sport at the level of the Republic of Serbia is not consistent. At the level of the Republic and autonomous provinces the means from the budget are allocated based on clearly defined criteria. The problem of financing of sport is still unsolved at the level of local self-governments, because there are no clearly defined criteria based on which the budget means are allocated, and there is also lack of clearly defined implementers. There are no local strategies of sport development which presents one of the drawbacks. They would complete the efficient system of clubs' financing which would lead to the goal of establishing a unique finance system of sport at the territory of entire Serbia when it comes to allocating of budget means (republic, autonomous provinces and units of local self-government).

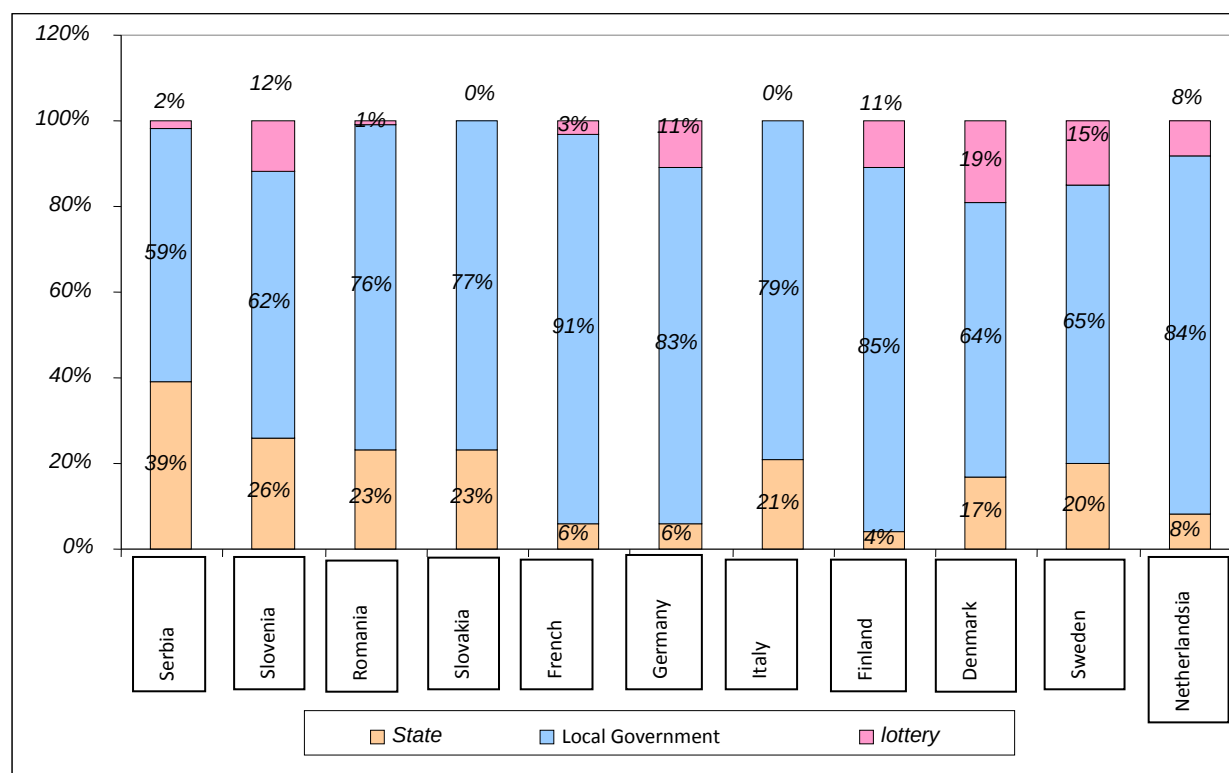
Ministry of youth and sport, with the goal of finding the solution for improvement and development of sport financing system, had a research done by the Economic Institute, which should offer the answers to questions like how to develop system of sport financing. Study shows

² Ministry of youth and sport: *Analysis of the application of the plan of Strategy for sport development in the republic of Serbia for the period 2009-2013*, Belgrade, 2009.

that Serbia is behind the countries of European Union when we talk about public sources of financing. Planned amounts for sport, from the public sources in Serbia were 13 euros per capita in 2011, which is more than ten times lower than in France (158 eur), Finland (155 eur) and

Denmark (136 eur) in 2009, but more than two times lower than in Hungary (27 eur) where from all EU countries this amount was lowest. The following chart shows the structure of public source of financing in selected EU countries for 2009 and in Serbia for 2011.

Chart 1. Structure of public finance source (%)

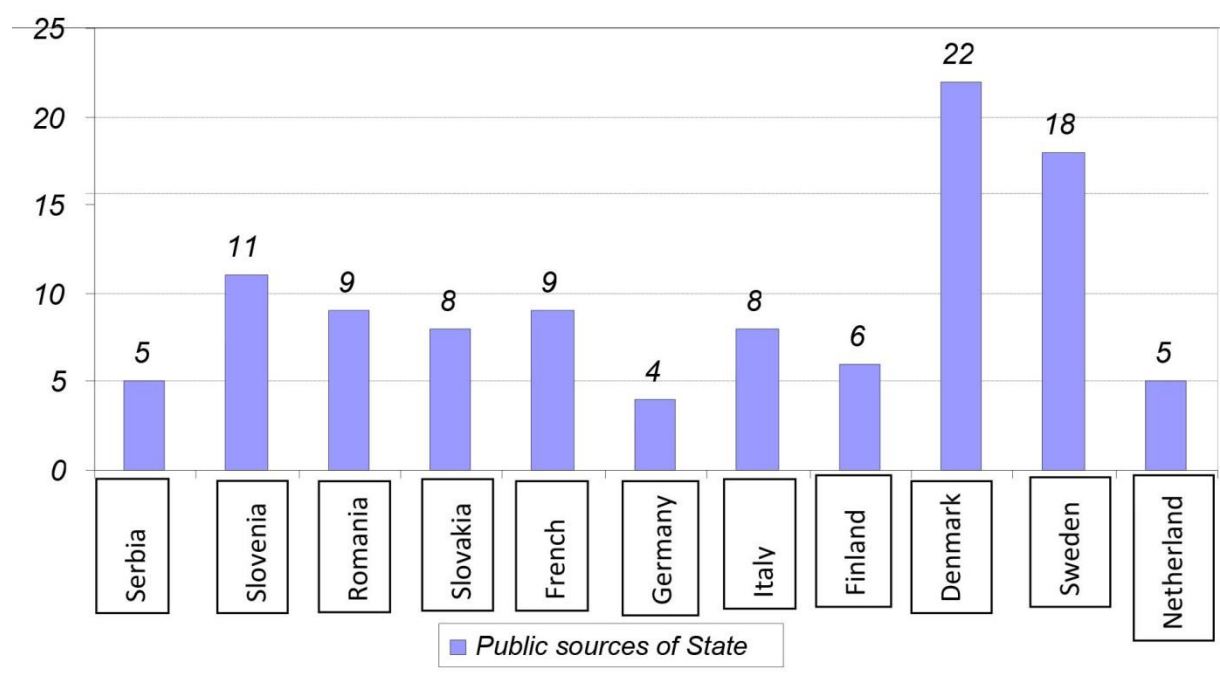


In these selected EU countries, in the structure of public sources of finance in 2009, the most significant were the sources from regional/local budget. In Serbia, in 2011, in the structure of planned public source of financing sport the budget of AP Vojvodina and local self-governments also had an important role, but less compared to all these selected EU countries. Also the share in public financing of sport in Serbia that refers to the means collected from the

lottery is low compared with the share of the same category at most selected EU countries. On the other hand the means for financing sport from the budget of the Republic of Serbia are significantly higher than the share at the state level of these selected EU countries.

Chart 2. Shows the financing of sport by the state, per capita, in selected EU countries in 2009 and in Serbia in 2011.

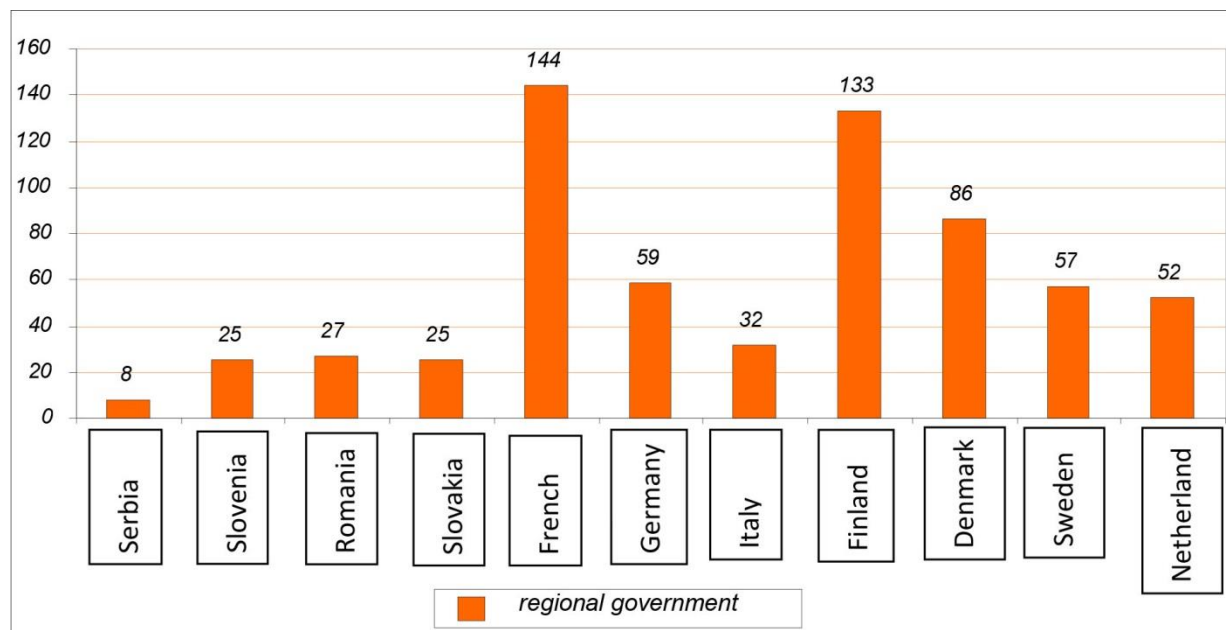
Chart 2. Financing of sport from the state budget, per capita, in selected EU countries and in Serbia



Even though Serbia is not behind certain countries like Germany, Holland and Finland when comparing the amounts of financing of sport from the state budget per capita, the mentioned countries finance sport with far larger amounts per capita from the budgets of regional/local self-governments.

The following chart shows the amounts of financing of sport from the budget of regional/local self-governments per capita in selected EU countries in 2009 and in Serbia in 2011:

Chart 3. Financing of sport from the budgets of regional/local self-governments per capita in selected EU countries



From the previous chart we can see that the financing of sport per capita from the budget of regional/local self-governments in Serbia is much smaller than in selected EU countries.

We can conclude that this negative gap between Serbia and the selected EU countries when we talk about financing sport mostly comes from financing from budgets of regional/ local self-governments. Previously mentioned planned means for the 2011 in Serbia were 8eur per capita while in 2009 in Slovenia and Slovakia they were 25eur, Romania 27eur, Italy 32eur, Denmark 86eur, Finland 133eur, France 144eur per capita.

Financing of Sport in Serbia from the lottery, expressed per capita, is at the lowest level compared with the selected EU countries. Planned financing of sport

from the mentioned source in 2011 in Serbia was 2,000,000eur that is 0.3eur per capita. On the other hand, in 2009 Denmark financed sport with 26eur per capita from the lottery.

Considering the results from the research, Ministry of youth and sport will suggest the ways that will lead to better financing of sport in Serbia. Some of the suggestions would be: Introducing tax payers with the right to determine the amount of his/her taxes which will then be given to some of the non-profit sports organizations. To realize this, it is necessary to make a list of sports organizations of potential recipients of these tax means; annually Serbia loses 79,000,000eur or 11eur per capita in taxes because of lottery “black market”. Through bringing the mentioned market

to the legal framework, we could raise the means which could, in certain percentage, be used to finance sport. We hope that the new Law on lottery, which is being applied from 2nd December 2011, will significantly influence the increase of income for realization of programs in the field of sport.

Establishing the control system of spending the sports organizations' means

Action plan defines the precondition for improvement of conditions for practicing sport through the realization of general goals that refer to creation of conditions for establishing the efficient finance system in the Republic of Serbia and through creation of conditions for establishing the control system for spending the budget means of sports organizations at all levels.

In order for this general goal to be realized many activities were conducted with the goal of realizing the following specific goals: the quality guidelines for realization of preparation of projects and programs' in sport are done; there is also the rulebook on terms and criteria for financially supporting the top athletes; there is an obligation of filing the audit report for all users of the means, along with the report on the use of the budget funds; the rulebooks are prepared, they refer to finance in sport; the analysis of financing of sports organizations is done –of branches of sports federation of Serbia; the analysis of regional financing of sports organizations – clubs is done; there is also an initiative for finding new forms of financing sport, in order to provide additional financing of federations, clubs,

sports organization in Serbia; the document "Comparative analysis of financing sport in EU countries and analysis of laws that regulate the system of tax exemptions in EU, and creating proposal for new system for financing sport in the Republic of Serbia" has been made; there were many organized seminars with national branch federation with the topic of financing programs and their control; the methodology for public procurement of small value in national sport is also made; and the software, for monitoring the financing of national branch federations from the budget means, is created.¹

Privatization in sport

Privatization is a process that comprises the transfer of resources from one owner to another, who is then expected to use those resources more efficiently. The law on privatization arranges the terms and procedures for change of ownership, social or state capital ² the right to acquire ownership and its legal protection are the strongest stimuli for all the effort and risk in creating and making profit.

The practice showed that every country that wants to quickly achieve the economic development has to create conditions for expansion of private initiatives and enterprises. It is confirmed that entrepreneurship is a framework of fastest and most efficient development of economy, which brings more innovations,

³Ministry of youth and sport, *Information booklet*, Belgrade, 2013.

⁴Law on privatization – „Official Gazette RS, no. 38/2001, 18/2003, 45/2005, 123/2007, 123/2007.law, 30/2010law, 93/2012 and 119/2012.

creativity and employment than any other business system.

Sport is too much of a game to be a business, and too much of a business to be only a game. This saying portrays in the best way how sport became a business and how much business goes into all branches of sport. The boundaries between business and sport are illustrated by the data about the annual turnover in sport in the world.³ Regardless of the branch of sport in which they operate and financial effects that they make, managers in sport need to be prepared and able to change ownership in sport, to organize and work with the most significant partner, that is, a man.

Privatization in sport is inevitable just as in any other area. Law on sport enables the privatization of sports organizations in the Republic of Serbia⁴. Many legal acts have been adopted that have the function of developing and affirming sport. Private initiative in sport, clearly defines and applicable institutional law framework have enabled the development of business in sport in the Republic of Serbia. The change of ownership structure, with the inflow of fresh capital will contribute to long-term increase of economic efficiency and the stability of sports organizations.

Regardless of the model of privatization one opts for (model of European Union, which offers various forms of acting of sports clubs, British model where the clubs are organized as joint stock companies,

Spanish model of majority ownership etc) the option should be modern, profitable sports organization organized according to the international standards, ready to accomplish its competitive goals and its supporters' expectations.

³Kastratovic.E. "Basics of management with management in sport, Institute for SME, Belgrade, 2004

⁴Law on sport „Official Gazette RS", no. 52/96, 101/2005-3. and 24/2011.

Conclusion

According to N. Djurdjevic, sport is represented by all the forms of physical activities, which are accomplished individually or in sports or some other organizations, and which have a goal of expressing and improving the physical readiness and mental balance, physical exercise or gaining the sports habits and achieving the results at competitions of all levels.

The research has shown that the Strategy of sport development shows the way and the segments of sport in which it is most efficient and most adequate to invest money of tax payers in order to accomplish the public interest in this area. The terms for improving conditions for doing sport, establishing the efficient system for financing of sport and the system of control of spending the budget means of sports

organizations have been defined. The analysis has shown that the system of financing in sport at the level of the Republic of Serbia is not consistent, that the problem of financing sport is still not solved at the local self-government level because there are no clearly defined implementers. Privatization in sport is inevitable like in any other area. Law on sport enables the privatization of sports organizations in the Republic of Serbia. Various legal acts have been adopted, which are in the function of development and affirmation of sport. Private initiative in sport, clearly defined and applicable institutional law framework have enabled the development of business in sport in the Republic of Serbia. The change of the ownership structure, along with the inflow of fresh capital, will contribute to the growth of long-term economic efficiency and stability of sports organizations.

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FINANSIRANJE SPORTA U REPUBLICI SRBIJI, KAO DIO STRATEGIJE RAZVOJA SPORTA

Sažetak

Sport je najrasprostranjeniji oblik moderne fizičke kulture. To se manifestira u raznim oblicima

igara kretanja i fizičke aktivnosti, koji je obilježen velikim emocionalnim zadovoljstvom i konkurencijom između različitih pojedinaca ili timova. Prema Evropskoj povelji o sportu, sport su sve oblike fizičke aktivnosti koje, kroz neorganizirana ili organizovani participacije, imaju za cilj izražavanje ili poboljšanje fizičke kondicije i mentalno blagostanje, stvaraju društveni odnosi ili postizanju rezultata u konkurenciji na svim nivoima.

Sport u Ustavu Republike Srbije definisan je u kategoriju od posebnog javnog interesa, a uglavnom se finansira iz budžeta Republike Srbije. Kao rezultat takvih zakonskih rješenja, vlada ili njeni nadležni organi imaju pravo i dužnost da identifikuje i razvoj ciljeva, kriterija i prioriteta za ulaganja budžetskih sredstava u sportu.

Vlada Republike Srbije 2008 godine, na prijedlog Ministarstva omladine i sporta, usvojila je strategiju razvoja sporta u Republici Srbiji za period od 2009. do 2013g. Sportska Strategija razvoja daje odgovor na pitanje kako i na koji segmentima sporta, najefikasniji i najprikladnije da ulažu novac poreskih obveznika, i kako na osnovu investicije na najbolji način da se postigne javni interes u sportu.

Ključne riječi: financiranje sporta, sport, strategija.

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DETERMINATION OF DIFFERENT INTENSITIES OF VERTICAL JUMP EXERCISE USING RPE SCALE IN ATHLETES

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Original scientific paper

Abstract

The purpose of the current investigation was to determine the effectiveness of rating of perceived exertion (RPE) scale to measure vertical jump plyometric exercise intensity during low (L), moderate (M) and high (H) intensity. Fourteen physically active students (age; 21 ± 1.1 y, height; 178.7 ± 8.2 cm and body mass; 74.6 ± 9.1 kg) volunteered to participate in this study and performed each intensity once separated with 24 h recovery. The H consisted of 1 set of 5 repetitions at 90% of the subject's vertical jump height (VJH). The M consisted of 10 repetitions at 70% VJT, and the L consisted of 1 set of 15 repetitions at 50% VJH. RPE was measured following the completion each intensity using 0-10 Borg RPE scale. Data was analyzed using repeated measures ANOVA and the level of significant was set at $p < 0.05$. The results indicated increases in RPE following enhancing exercise intensity ($p < 0.05$). Performing fewer repetitions at a higher intensity was perceived to be more difficult than performing more repetitions at a lower intensity. The results of the current investigation revealed that the RPE method is effective in monitoring different plyometric exercise and training intensities and it can be recommend that strength and conditioning professionals and athletes use the RPE method based on the effectiveness tool for monitoring their plyometric exercise and training sessions at different intensities.

Key words: *perceived effort, vertical jump, intensity, Borg scale.*

Introduction

Previous studies reported that rating of perceived exertion (RPE) scale is a established method for screening intensity of resistance and endurance exercises in adults and children (McGuigan et al., 2008; Sweet et al., 2004; Day et al., 2004; Eston et al., 2006; Williams and Eston, 1989). This scale has been widely researched for its use in both clinical and

exercise setting (Noble and Robertson, 1996). For strength and conditioning professionals and researchers designing exercise intensity is one of the important problems and the RPE scale is valid and became a standard method of measuring the level of intensity experienced during physical activity (Noble and Robertson, 1996).

It appears that with increasing the resistance exercise intensity, the RPE is higher (McGuigan et al., 2008; Sweet et al., 2004; Day et al., 2004; Singh et al., 2007). Moreover, subjects tend to perform more repetitions with low RPE compared with low repetitions with high RPE (Day et al., 2004; Gearhart et al., 2001). Although, resistance training is a well training mode for many different populations wishing to increase physical fitness, strength and power (Arazi and Asadi, 2011; 2012), newly a large number of conditioning professionals and athletes used plyometric training for the promotion of muscular performance and power in their training schedule (Arazi et al., 2012; Asadi and Arazi, 2012). Therefore, monitoring plyometric exercise (PE) intensity using RPE scale is vital for a successful periodized exercise plan.

Since, designing exercise training can affect a myriad of variables such as number of sets, number of repetitions, intensity, exercise type and etc, thus performing PE is affected by these variables (Kraemer and Ratamess, 2004). Different intensities of PE may induce different responses from the muscle and neurological system. Therefore, monitoring PE intensity with valid tool is necessary. Previous authors determined plyometric exercise intensity with electromyography and vertical ground reaction force and found that depth jump and cone jump are more intense than other types of plyometric exercises (Ebben et al., 2008; Wallace et al., 2010). Since, previous studies used expensive device to determine plyometric exercise intensity, these device and equipments are not available for strength and conditioning professionals. For this goal, there was a valid and cheap tool for screening intensity

of plyometrics based on RPE scale. To author knowledge, no study examined the intensity of plyometric exercise using safe and cheap tool, thus, this study was designed to examine the use of RPE after different intensities of PE such as low, moderate and high. This would benefit coaches, strength and power athletes by providing a reliable method of assessing and monitoring different intensities of PE in their periodized plan. Therefore, the purpose of this study was to evaluate the effectiveness of using RPE (Borg 10-category) scale to monitor of PE intensity at different intensities.

Methods

Participants

The participants were fourteen physically active students (age 21.2 ± 1.1 y, height 178.7 ± 8.2 cm, body mass 74.6 ± 9.1 , vertical jump height 38.8 ± 6.3 cm) at the university and were familiar with plyometric and resistance training. The participants were healthy, free from any lower body injuries and had not problems for their exclusion of this study. Participants were carefully informed about the design of the study and signed an informed consent document prior to the start of the study. All subjects were physically active men and performed resistance or sport training 3 times a week for 90-min. The study was approved by the institutional review boards of the University and the declaration of Helsinki.

Experimental design

Three days before starting treatments, the participants were recruited to the laboratory and informed about the experimental design of the study and then were tested for height using a wall-

mounted stadiometer (Seca 222, Terre Haute, IN) recorded to the nearest cm and body mass using a medical scale (Tanita, BC-418MA, Tokyo, Japan) with the nearest 0.1 kg. During this session maximum vertical jump was determined according to the best value of 5 vertical jumps. After assessing maximum vertical jump height, for assessing RPE during the exercise, standard instructions and anchoring procedures were explained. At testing days, each participant performed 1 set of PE with maximal effort and after completing exercise the rate of perceived exertion was determined.

Plyometric exercise

A randomized, crossover experimental design was used, with each subject performing 3 intensities. Prior to starting the exercise, participants performed 10-min warm up including 5-min jogging and 5-min stretching and ballistic movements. Participants performed 1 set of 15 repetitions of 50% VJH based on Low intensity. The Moderate intensity consisted of 1 set of 10 repetitions with 70% VJH and High intensity consisted of 1 set of 5 repetitions with 90% VJH. The participant was asked to maintain the jump height for each subsequent jump that marked in the Vertec (Power System, Knoxville,

Tennessee). The investigator carefully supervised the exercise to eliminate the risks of unexpected injury. The cool-down period consisted of approximately 5-min of walking and jogging followed by static stretching of the major muscle groups of the legs.

RPE measures

During the familiarization session, each subject was given instructions on the use of the Borg 10-category scale for RPE (Table 1). For assessing RPE during the exercise session, standard instructions and anchoring procedures were explained during the familiarization session (Noble and Robertson, 1996). Participants were asked to use any number on the scale to rate their overall effort. A rating of 0 was to be associated with no exertion (rest) at all and a rating of 10 was considered to be maximal exertion and associated with the most stressful exercise ever performed. Following the PE at different intensities the subject was asked "How would you rate your effort?" The participants would verbally indicate a number to rate their overall effort. This use of RPE method has been used successfully to determine exercise intensity in previous study (Day et al., 2004; Noble and Robertson, 1996).

Table 1. The Borg 10-category scale for rating of perceived exertion.

Rating	Descriptor
0	Rest
1	Very, very easy
2	Easy
3	Moderate
4	Somewhat hard
5	Hard
6	
7	Very hard
8	

9
10 Maximal

Statistical analysis

Data are presented as mean $\pm$ SD. Data normality was checked with the Shapiro-Wilktest. A repeated-measures analysis of variance (ANOVA) and Fisher pairwise least significant difference (LSD) post hoc test was used to analyze the RPE responses after different intensities (L, M and H) of PE. Significance level was set at $p < 0.05$. All statistical analyses were performed through the use of a statistical software package (SPSS®, Version 16.0, SPSS., Chicago, IL).

Results

Within-subject repeated measures ANOVA showed a significant difference among the mean RPE values for each intensity ($p < 0.05$). The 70% intensity RPE values were significantly higher than the 50% intensity RPE values ($p=0.006$), and the 90% intensity RPE values were significantly higher than the 50% ($p=0.003$) and 70% ($p=0.045$) intensity. RPE values as displayed in Figure 1.

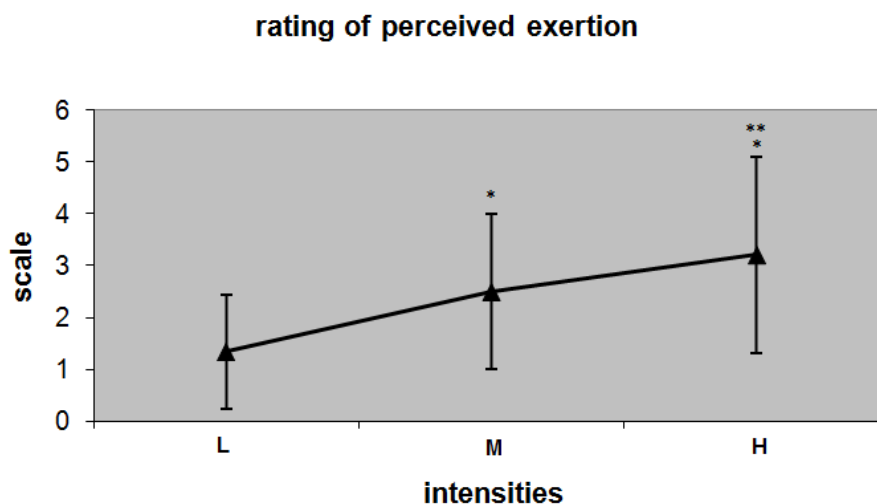


Figure 1. Ratings of perceived exertion (RPE) for the different intensities of plyometric exercise.

L: low, M: moderate, H: high. * significant differences compared with L, ** significant differences compared with M. Values are means $\pm$ SD.

Discussion

Previous researches have demonstrated the effectiveness of the RPE method for monitoring resistance and endurance exercise training intensity in adults and children (McGuigan et al., 2008; Sweet et al., 2004; Day et al., 2004; Eston et al., 2006; Williams and Eston, 1989). There is no previous research investigating the

efficacy of RPE method for monitoring PE intensity. The purpose of the present investigation was to compare three different intensities of PE (L, M and H) on RPE during vertical jump exercise. We found greater increases in RPE for H when compared with L and M, also greater RPE for M in comparison to L.

Resistance exercise has strong eccentric component and it seems that this phase of

resistance exercise has relationship with the nature of PE. Because of plyometric exercise and training consisted of rapid eccentric to concentric action and induce improvement in performance, so it could be common point between resistance and plyometric exercise and training. These findings are in line with previous studies that determined resistance exercise intensity using RPE scale and found greater perceived exertion with low repetitions and high intensity of exercise (McGuigan et al., 2008; Sweet et al., 2004; Day et al., 2004; Williams and Eston, 1989). There is a strong linear relationship between RPE and exercise intensity. This means that during exercise movement, corollary discharges from the motor cortex are concurrently sent to both the recipient muscle and the somatosensory cortex. The higher load during PE results in greater tension development and increased motor unit recruitment and firing frequency (Gearhart et al., 2001). A positive slope in RPE, indicating an increase in the intensity of the perceptual signal originating in the active skeletal muscle throughout each set of exercises, may be related to metabolic and/or neurological factors associated with fatigue (Wilmore and Costill, 1994). Fatigue during plyometric exercises could be due to the depletion of plasma creatinine, decreasing the pH with increasing muscle lactate accumulation, or carbohydrate depletion (Singh et al., 2007; Cafarelli and Bigland-Ritchie, 1979) and resulting increases in perception of exertion during PE.

As previously demonstrated, muscles forced to overcome a heavy load require greater tension development, which requires an increase in motor unit recruitment and firing frequency (Noble and Robertson, 1996; Gearhart et al.,

2001). For greater motor unit recruitment to be accomplished the motor cortex may send stronger signals to the sensory cortex; this gives rise to increased perception of effort. It has been theorized that these stronger corollary signals may be the primary cause of the differences in RPE of varying intensities as shown by previous studies and the present study (Noble and Robertson, 1996; Cafarelli and Bigland-Ritchie, 1979; Lagally et al., 2001; Suminshi et al., 1997). The difference in RPE has also been observed in increasing intensities of aerobic cycling (Gearhart et al., 2001), suggesting that the increase in RPE demonstrated by this and several previous studies pertains not only to the anaerobic energy system but to the aerobic energy system as well.

Overall, when the PE intensity increases, muscles must overcome to this increases load resulting greater tension development in active muscle fiber requires an increase in motor unit recruitment and firing frequency (Day et al., 2004). To produce this greater force, additional skeletal muscle fibers must be recruited. As such, a greater number of motor units must be stimulated. This is accomplished by sending a stronger efferent signal from the motor cortex. Smaller, more excitable motor units are recruited first, followed by larger, less excitable motor units. A stronger stimulus may be necessary to cause these larger, less excitable motor units to contract. It is unclear whether the stronger signal is due to an increased efferent firing rate, a stronger efferent signal required for depolarization, or a combination of both (Singh et al., 2007). These neuromotor variables were not measured in the current study. Regardless, it is believed that more intense corollary signals sent to the sensory cortex from the

motor cortex as a result of the above process during PE may be the primary cause of the differences observed in RPE among intensities (McGuigan et al., 2008).

Conclusion

The present study demonstrated that RPE increases when vertical jump intensities increased. The rate of perceived exertion was higher for H as compared to L and M, also the perceived exertion was higher for M when compared with L. These findings can be key note for strength and conditioning professionals and athletes to monitor their plyometric exercise and training intensities when performed at

different intensities. In this study only one set of plyometric exercise was used, for future studies it can be recommend that the authors used several sets and compared different types of plyometric exercise intensity using RPE scale. The limitations of this study were number of subjects and professional athletes. For future study it can be recommend that researchers used professional athletes. Moreover, the results of the current investigation can be used for recreationally physical active men, and further work is needed to determine if similar effects are obtained in the professional sporting population.

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**ODREĐIVANJE RAZLIČITIH INTENZITETA VEŽBE VERTIKALNIH SKOVOKA
KORISTEĆI SKALU OON KOD SPORTISTA**

Sažetak

Svrha ove istrage je bilo utvrđivanje efikasnosti skale ocenjivanja opaženog napora (OON) za merenje intenziteta skakačke vezbe vertikalnog skoka za vreme niskog (N), umerenog (U) i visokog (V) intenziteta. Četrnaest fizički aktivnih studenata (starosti 21 ± 1.1 godina, visine 178.7 ± 8.2 cm i telesne mase 74.6 ± 9.1 kg) dobrovoljno se prijavilo da učestvuje u ovoj studiji i da vežba pod svakim intenzitetom posebno uz period oporavka od 24h. V se sastojao od 1 seta od 5 ponavljanja na 90% visine vertikalnog skoka subjekta (VSS). U se sastojao od 10 ponavljanja na 70%, a N se sastojao od 1 seta od 15 ponavljanja na 50% VSS. OON je meren po završetku svakog intenziteta pomoću skale Borg OON. Podaci su analizirani koristeći ponovljena merenja ANOVA i nivo značajne razlike je postavljen na $p < 0.05$. Rezultati su pokazali povećanje OON po povećanju intenziteta vežbanja ($p < 0.05$). Izvođenje manje ponavljanja pri većem intenzitetu smatrano je za teže nego izvođenje više ponavljanja pri nižem intenzitetu. Rezultati tekuće istrage pokazali su da je metoda OON efikasna u praćenju različitih skakačkih vežbi i vežbačkih intenziteta i može se preporučiti za korišćenje profesionalcima i sportistima koji se bave snagom i kondicijom na osnovu alata za efikasnost za praćenje njihovih skakačkih vežbi i treninga na različitim intenzitetima.

Ključne riječi: opaženi napor, vertikalni skok, intenzitet, skala Borg.

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ANALYTICS OF HUMAN RESOURCES THROUGH THE PARADIGM OF LEADERSHIP IN BASKETBALL CLUBS

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Original scientific paper

Abstract

The role of stability and human resources in basketball clubs by analyzing 25 clubs in Bosnia and Herzegovina. The aim of this study was to understand the leadership system of functioning and automatic roles of staffing resources in basketball clubs. Results show that in places where the human resources are persistent, the social character trumps the private character as the clubs are owned by communities. We also see that in appointing managers the biggest role is played by the Club Assembly while the placements are influenced by another party in as much as 7 clubs, which tells us that the local community has an impact on the management of clubs while not being present in physical form, but in a form of political or personal interests. We also see that in private clubs they decide themselves on the managers, which is logical. Only personal investment gives the right to appoint one's own manager. The general manager has the most influence when it comes to appointing the management. The future of the club in the opinion of human resources who are well versed in the situation in the clubs varies, indicating uncertainty. Ownership transformation of basketball clubs in most cases has not started yet.

Key words: analytics, basketball, resource, management.

Introduction

According to the authors Raič and Maksimovic (1999)¹ the following are the resources of a sporting organization: Cash resources - money is a measuring tool for the size and value; it is the most flexible resource that can be transformed

into any other form of resource. There is no doubt that the financial indicators of a company or organization are very important for its conversance, especially if there are both consumption and production areas - which in a way is the situation with sports. Data on revenues and expenditures of sports organizations are extremely diverse. They can be obtained by various methods that are found in different sources. Resources with a fixed purpose - these are the funds of a company that tie

¹ Raič, A. (1999): *Sports Management, Sports Academy, Belgrade*

the money over a longer period of time. These are buildings, banquet halls, utility rooms, equipment and appliances, vehicles, measuring instruments, computers, etc. Sporting facilities are the most expensive resources and therefore the state keeps accurate records about them. Single use resources - sporting equipment, is used and replaced several times during one competing cycle. For normal sporting processes it is necessary to have disposable supplies, which on the other hand tie the money and reduce the business efficiency of the organization. Sporting equipment includes: equipment, props, instruments, and personal gear (clothes, etc.) of the trainees. Sporting equipment must be designed and certified in accordance with the following: safety standards, hygiene standards, sporting standards for training and competition, and environmental standards, which are set forth by the competent state authorities. Data as resources - this is general information about the club, memberships, and sports federation, clubs' sporting achievements, income and expenditures, the use of sporting facilities, the organizational structure of the club, sports membership, and professional staff. People as resources - people are the most valuable resource for the successful management of sports organizations.

Adequately trained and creative human resources implement developmental policy, science, and technology in every control system of our society, and therefore in sports, as people carry out reform, development, and progress. The importance of human resources management in modern business organizations and the principles governing modern management define the

philosophy by which a person is the most valuable resource of the organization. This resource is understood as the potential and total power (competitive advantage) of the organization. (Pržulj Ž.2007)²

In sports, human resource management is based on the analysis of the scope and structure of the work, on the reaching of goals, and sporting and business functions. Accordingly, the structure of the work is the basis for planning the human resources in a sports organization.

Human resources in a sports organization include the following: the founders, owners, shareholders, managers, volunteers, and coaches.

Research Methodology

For the purposes of this study a sample of 25 clubs in the territory of Bosnia and Herzegovina was used. Respondents were the most competent individuals who know the entire situation at the club and who filled out the questionnaire.

The sample of variables consists of a questionnaire that is made out of a set of responses corresponding to the issue of this study, i.e., persistence of resources, direct influence on the club in terms of management, transformation of basketball clubs and their scope, and the very future of clubs through the perspective of human resources who directly take part in the functioning of the club.

In this paper, we used descriptive statistics, summarizing data and presenting

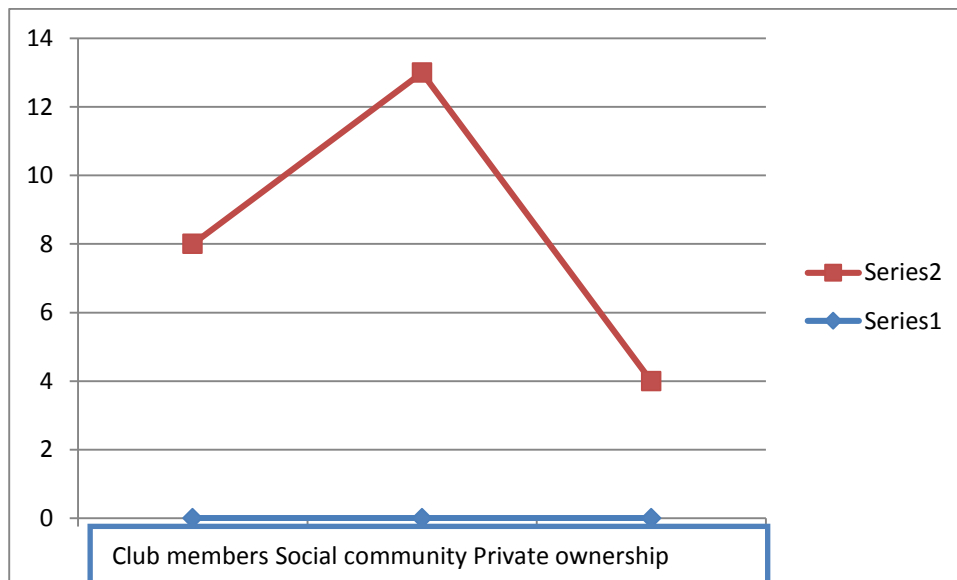
² Pržulj, Ž (2007): *Human Resources Management*, Faculty of Commerce and Banking, Belgrade

them in an appropriate form (graphical representation).

Results and Discussion

Proprietary ratio

Graph 1

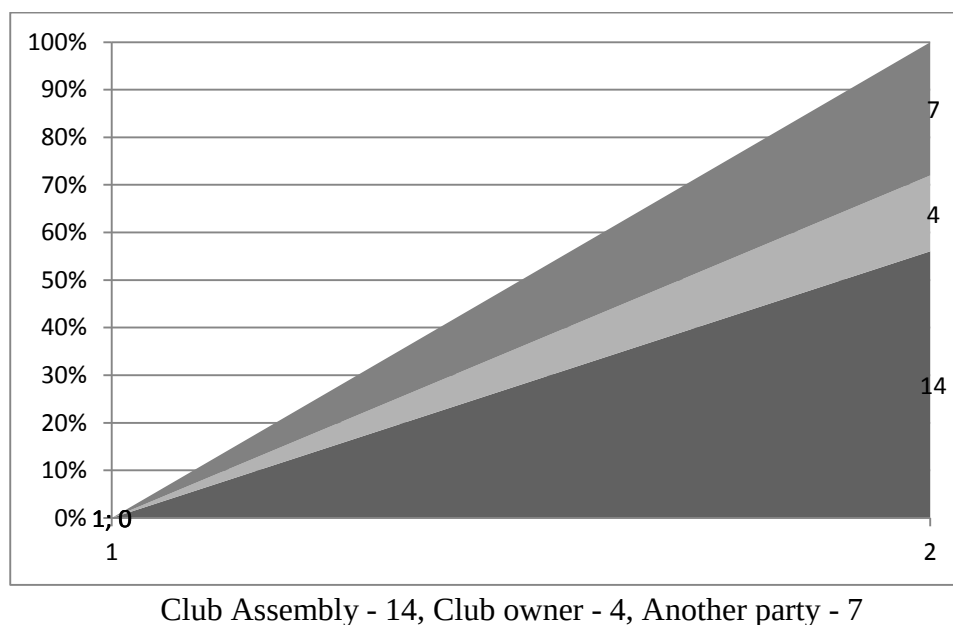


Proprietary ratio of clubs is the parameter of responsibility of human resources when it comes to social and sporting life. In Graph 1, we see that 13 basketball clubs,

out of the sample of 25 clubs, are in the hands of the community, club members own 8 clubs, while 4 clubs are privately owned.

Appointing a Manager

Graph 2

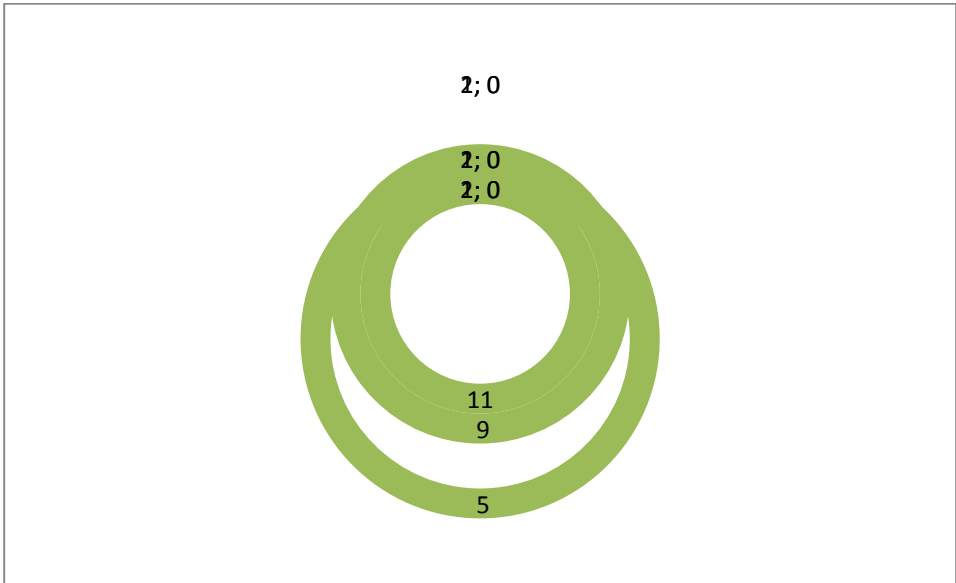


When it comes to the functioning of basketball clubs, Graph 2 shows that appointing the managers of clubs is mostly in the hands of the Club Assembly in as many as 14 clubs. This tells us that the human resources trump social character, and not a private review of benefits. We also see that other parties have an influence in appointing managers in as many as 7 clubs, which tells us that the

local community has an impact on the management of clubs and that they are not present in physical form, but in a form of political or personal interests. We also see that in private clubs they decide on the managers, which is logical, and for our study this was the case in 4 clubs. Only personal investment gives the right to appoint one's own manager.

Appointing the Management Team

Graph 3



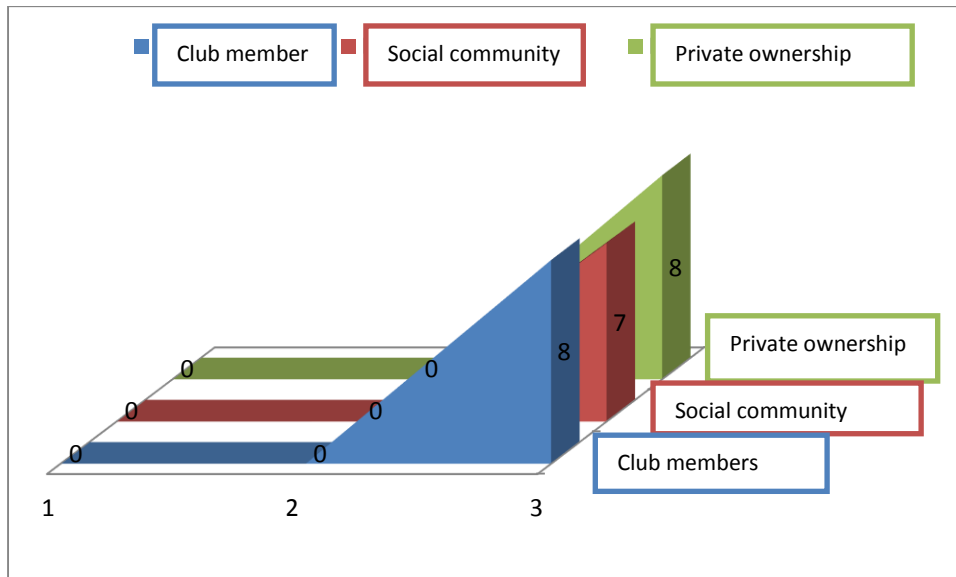
General Manager	11
Club Assembly	9
Executive Body	5

Graph 3 shows that the general manager has the most influence when it comes to appointing the management. From a managerial point of view, this makes sense, because if there is a possibility then an associate is elected on the basis of per

sonal affiliation to facilitate the realization of the set objectives. Here we see that in as many as 11 clubs the general manager elects the management team, the assembly does this in 9 clubs, while the executive body elects the management team in 5 cases, or 5 clubs.

The Future of the Club

Graph 4

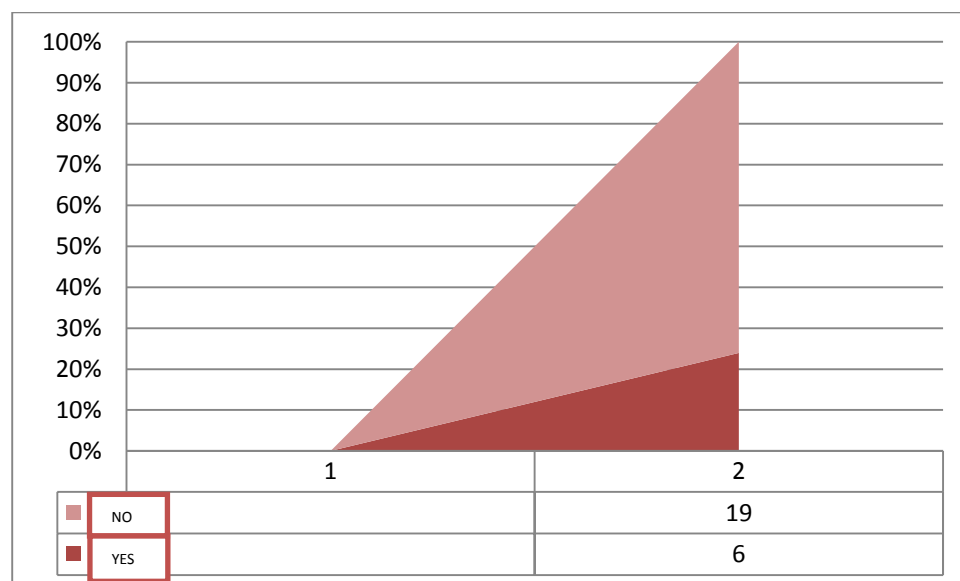


When we look at the facts, we see that the future of clubs varies depending of the situation. Graph 4 shows that the future of the clubs, according to the human resources that are well versed in the

situation in the clubs is as follows: the future of 8 clubs is in the hands of club members and private owners, while 7 clubs are in the hands of the community.

Ownership Transformation

Graph 5



Graph 5 shows the ownership transformation, where we see that in 19 clubs ownership transformation has not yet started, while in 6 of the clubs it has. This tells us that the functioning of the clubs is largely in the hands of club members. This is additional proof that human resources are the only real entity responsible for the situation in sports or clubs, or in this case in basketball clubs.

Conclusion

This study obtained the facts in basketball clubs through the action of human resources as a responsible factor for the functioning of clubs, with the additional segment of the human community. The results tell us that 13 clubs are in the hands of the community, club members own 8 clubs, while 4 clubs are privately owned. Appointing the managers of clubs is mostly in the hands of the Club Assembly in as many as 14 clubs. This tells us that the human resources trump social character, and not a private review of benefits. We see also that other parties have an influence in appointing a manager in as many as 7 clubs, which tells us that

the local community has an impact on the management of clubs and that they are not present in physical form, but in a form of political or personal interests. We also see that in private clubs they decide themselves on the managers, which is logical. Only personal investment gives the right to appoint one's own manager. The general manager has the most influence when it comes to appointing the management. Here we see that in as many as 11 clubs the general manager elects the management team, the assembly does this in 9 clubs, while the executive body elects the management team in 5 cases, or 5 clubs. The future of the clubs, according to the human resources that are well versed in the situation in the clubs, is as follows: the future of 8 clubs is in the hands of club members and private owners, while 7 clubs are in the hands of the community. The ownership transformation in 19 clubs has not yet started, while in 6 of the clubs it has. This tells us that the functioning of the club is largely in the hands of club members. This is additional proof that human resources are the only real entity responsible for the situation in sports or clubs, or in this case in basketball clubs.

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ANALITIKA LJUDSKOG RESURSA KROZ PARADIGMU RUKOVOĐENJA U KOŠARKAŠKIM KLUBOVIMA

Sažetak

Kakva je postojanost i uloga ljudskih resursa u košarkaškim klubovima, dobili smo analizirajući 25 klubova na teritoriji Bosne i Hercegovine. Cij istraživanja je bio da vidimo rukovodstveni sistem funkcionisanja i automatski uloga kadrovske resursa u košarkaškim klubovima. Rezultati nam pokazuju gdje je ljudski resurs praćen, prijednači društveni karakter a ne privatni, jer su klubovi u vlasništvu društvenih zajednica. Vidimo takođe da postavljanje menadžera, najveću ulogu ima skupština kluba a uticaj postavljanja ima i neko drugi, u čak sedam klubova, što nam govori da lokalna zajednica ima uticaj na rukovođenje u klubovima a da nisu prisutni u fizičkom obliku, nego sam možemo nazvati politički ili ličnim interesima. Vidimo isto da što je logično, koliko je privatnih klubova, toliko i odlučuje o samim menadžerima, što je i logično. Samo lično ulaganje daje i za pravo postavljanje svog čovjeka. Postavljanje članova menadžmenta, najviše ima uticaj generalni menadžer. Budućnost kluba po mišljenju ljudskog resursa koji je najbolje i upućen u stanje u klubovima, je različitih odgovora, što govori o neizvjesnosti. Vlasničke transformacije košarkaških klubova u većini slučajeva nije otpočeta.

Ključne riječi: *analitika, košarka, resurs, rukovođenje.*

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DEVELOPING THE CITIZEN ATHLETE

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Abstract

Over the last fifteen years sport organizations have been working hard to promote the role of sport in society, as evidenced by the growing body of literature around sport-based corporate social responsibility (Tainsky & Babiak, 2011; Walker & Parent, 2010). As sport is considered a key social institution, more research is needed to understand the role that amateur sport and other social and educational institutions can play in developing athletes and society, especially in light of the growing number of amateur athletes engaged in social change activism. This paper explores the role of social responsibility within an athlete's development by using the Athlete Social Responsibility (ASR) framework (Carter, 2009). Through a narrative inquiry, looking at Canada and Montenegro, this paper offers innovative ways in which sport and society could benefit from the application of an ASR framework to athletes from an early stage in their sport experiences.

Key words: *Private, athletes, the responsible.*

Athletes and Social Change: Developing the Citizen Athlete

Historically, there have been a small, but influential, number of athletes who have actively advocated and engaged in social issues (Wolff & Kaufman, 2009; Kidd, 2000). Some of the most celebrated athletes, such as Billie Jean King, Jackie Robinson and Muhammad Ali, have maintained enduring popular respect because of their capacities to demonstrate extraordinary sport skill and willingness to engage in society (Zirin, 2005; Malec & Beckles, 1997). In other words, athletes

who have achieved sporting excellence while projecting a sense of humanity and social responsibility have had a lasting impact on society (Hughson, 2009).

In Canada, there has been progress towards recognizing this athlete agency as evidenced in Sport Canada's commitment to an "athlete-centered sport" system (Kihl et al., 2007). Athlete-centered is defined as a characteristic where, "the sport system exists for athletes/participants who are the primary focus in the development of policies, programs, and procedures" (Canadian Heritage, 2002a,

p.13). This commitment is largely due to the efforts of athletes who founded the Canadian Athletes Association (now AthletesCAN), Canada's Association of National Team Athletes. In a recent issue of *Sport in Society*, Canadian Olympic athletes and AthletesCAN alumni Ann Peel and Alexandra Orlando argued that "athletes' voices are beginning to pick up around the world... [and that] athletes will change the rules of the game" (Koss et al., 2011, p.315). To understand what they are talking about, one only need to look at the growing list of Canadian athlete ambassadors advocating for children's rights to play (righttoplay.com) and the Canadian athletes speaking about climate change on behalf of the David Suzuki Foundation (playitcool.org).

This trend of socially concerned and engaged amateur athletes can be seen around the world. For example, in Montenegro, the efforts of individual athletes are increasingly having social impacts. For example, to bring attention to environmental sustainability, individual athletes and sport leaders in the northern region of Montenegro are organizing events in line with the highest international standards in environmental protection (leave no trace). The PEAK program is designed specifically to raise awareness of the environment among young people.

Research suggests that athletes who focus on performance, while keeping a healthy perspective of sport, themselves, and the world, are more likely to succeed long-term in sport and in life (Brown, 2001; Carter, 2009; Henricks, 2006; Stirling, 2007). Despite this, amateur sport systems have been slow to adopt social responsibility as a key component of

athlete development (Carter, 2009). Indeed, athletes have often been discouraged and even punished by sport organizations for engaging in social responsibility activities (Zirin, 2005; Kidd, 2000; Wolfe & Kaufmann, 2009).

One the most well-known examples is when U.S. athletes Tommie Smith and John Carlos, medalists in the 200 meter event at the 1968 Olympics, were stripped of their medals for their deliberate actions to expose racism in the US sport system (Zirin, 2005). In a public statement afterwards Avery Brundage, president of the International Olympic Committee, suggested that Smith and Carlos had violated "one of the basic principles of the Olympic Games: that politics play no part whatsoever" (Zirin, 2005, p.76). While it was accepted that countries were using sport as a political platform (for instance, the Olympic boycotts of 1980 and 1984), it clearly was not okay for the athletes to do the same. This historic double standard not only violates athletes' human rights to freedom of expression within the Universal Declaration of Human Rights (Article 19), it also violates the athlete's rights of personhood within the specific context of sport, within the proposed Northeastern University Athlete Bill of Rights. While amateur sport systems have sustained the notion that athletes should focus only on sport, athletes themselves are demonstrating that this isn't true. As sports psychologist Matthew Brown (2001) argues "it's not necessary for athletes to forfeit themselves or their values in order to perform well" (p. 159).

In our increasingly socially conscious world, a number of sport leaders, journalists, and sociologists are

recognizing the failure of institutional sport to demonstrate that it is capable of moral and socially responsible leadership (Zeigler 2007, Zirin, 2008; CCES, 2008; Rudd, 2005; Jarvie, 2007; Kidd, 2009, 1996). While there is a growing body of literature around social responsibility and professional sports (Tainsky & Babiak, 2011), few are recognizing the emerging amateur athlete-driven social responsibility movement and its potential positive implications on sport systems around the world. Even within Canada's athlete-centered-sport system, social responsibility is not a component of the long-term athlete development model.

As sport is considered a key social institution, more research is needed to understand the role that amateur sport and other social and educational institutions can play in supporting the athlete social responsibility movement. The growing presence of morally aware and responsible athletes might serve to support sport systems around the world adapt to the social values and expectations of the twenty-first century. This paper aims to explore the role of social responsibility within an athlete's development by using the Athlete Social Responsibility (ASR) framework (Carter, 2009) by:

- 1) outlining the Athlete Social Responsibility framework;
- 2) exploring innovative programs that are applying the ASR framework;
- 3) identifying how ASR could contribute to "positive" athlete development.

Athlete Social Responsibility (ASR)

Social responsibility is defined as "a process of identifying with other persons on an ever widening basis" (Educational Policies Commission, 1963, p.7). It is a developmental process made up of a series of stages, which is manifested through thoughts and actions from childhood to adulthood. Social responsibility is a well-established concept that has been widely explored and accepted within developmental psychology. It plays an important role in Erikson's ego identity model in human development (McAdams, 2001), Csikszentimihalyi (1990) idea's of ultimate performance flow, and Orlick's (1998) ideas of life balance. Research suggests that when athletes achieve a sense of balance and perspective in sport and in life, they are more likely to engage flow experiences thereby achieving full self-actualization and development.

Building upon this definition of social responsibility, Athlete Social Responsibility (ASR) is the process of identifying one's role and responsibilities on an ever-widening basis. Within this framework and its stages, athletes develop a strong sense of responsible citizenship in sport and life. While the concept of ASR might resemble corporate social responsibility (CSR), the belief that organizations have responsibilities beyond profit maximizations (Babiak & Wolfe, 2006; Smith & Westerbeek, 2007), it is fundamentally different in its loci of control and motivation. While the CSR practice has been criticized for being too managerially driven, hierarchical, and too simple and mechanistic in its approach to ethical practice (MacLagan, 2008), ASR is a grass-roots movement driven by athletes at all levels who see the potential of sport in society. This "presence of such morally

aware, self-actualizing members who possess enhanced appreciation awareness, helps organizations adapt to the values and expectations of their stakeholders in more turbulent times” (MacLagan, 2008, p.372). ASR is not part of an overall managerial strategy but derives from an athlete’s personal experience and desire to become a responsible citizen. It could be argued that while sport is failing to meet social expectations, athletes are increasingly becoming the moral managers of sport and could help lead it into a new era especially as it relates to positive long term athlete development. The following section shares the story of two innovative programs, one Canadian high school and one Olympic Committee, who are adopting and successfully implementing the ASR model.

The Canadian Example: the early development of a socially responsible athlete

Athlete Social Responsibility is a process and an outcome. As young people develop, they can be encouraged to perceive their role in sport as a vehicle for social inclusion and social change, in addition to providing the fun and challenge of play and competition. By exposing young people as early as high school to a broad understanding of the role of sport in their lives, and as a vehicle to have an impact in their communities, they will have difficulty retreating to a narrow view of sport as focused on their own performance or participation. By ensuring that their exposure to sport’s enhanced role in community is well-designed, they will associate sport with positive growth, and as a constructive force in the world.

At Havergal College, an independent girl’s school in Toronto, Canada, the Institute at Havergal has the mandate of providing the theoretical framework and program support to enable our students and staff to engage in the world, to be socially responsible. We use a framework rooted in the work of Amartya Sen (Nobel Laureate in Economics 1998). Adopting this framework we seek to engage with other people to contribute to a world which honors self-determination.

We start from the point of our shared humanity, not a mandate to serve or help others. We create learning relationships that foster mutual respect and a sense of partnership with the communities and organizations with whom we engage. This is a significant departure from the usual educational approach to community engagement which emphasizes service, and from the norm in international development. We believe that only by enabling our students to perceive others as their equals will they be enabled to be effective in addressing the world’s issues and in contributing to a just, progressive world for all.

This model of engagement draws both from self-determination theory (Ryan & Deci, 2000) and participatory action research (Darnell & Hayhurst, 2011), and it has relied heavily on sport as an effective and relatively neutral means of engagement.

The Story of Athletes in Motion

In the fall of 2009, as part of a school-wide conference on taking action in the community, we asked students to share with us their vision of the world they want.

Over 25% of student respondents (n=600, grade 7 to 12), came back with a vision for a world in which all children had access to sport and play. Within a month, a small group of students acted on their vision and created Athletes in Motion with a vision of “Sport for all. Set for Life” In year 1, we partnered with Motion Ball (sport for athletes with disabilities), the Race for Dignity (an event in support of Dignitas International), Start2Finish (after school running and reading programs in elementary schools located in priority neighborhoods of new Canadians, and organized sports days to which we invited students from our partner elementary and middle schools in the public school board. Our most significant program started in the fall of August 2010 when we hosted a two week sport for community day camp to which those children were invited.

The camp immediately gained financial support from JumpStart, the foundation of Canadian Tire, one of Canada’s largest and oldest corporations. The mission of Jumpstart is “to give kids a sporting chance”.

The goals of the camp were few and relatively simple. We wanted to demonstrate the power of sport in human development (with a focus on developing self-determination), use sport to build a sense of social responsibility in high school athletes, provide a vehicle for national team athletes to act with social responsibility, and to enhance self-confidence and relatedness both within and across each participating group, and across the city of Toronto.

The camp has a number of elements that make it a unique experience for all

participants, and which enhance its impact on the participants and their communities:

1. Its focus is on inclusion and participation, on mastery not excellence.
2. It is multi-sport, including sports to which children are not always exposed, such as rugby and rhythmic gymnastics. We also include sports writing, led by a poet, to add a literacy component.
3. It is student-led (male and female, public and independent schools), supported by adult facilitators. Students are the counselors and are involved in the design, promotion and daily implementation of the camp.
4. It is accessible – campers are charged \$10 per week and are bused to camp from their home schools, with lunch and snacks provided.
5. It is delivered in the two week gap between city programming and the beginning of the school year when children in these neighborhoods would otherwise not have access to programming.
6. It provides an opportunity for national team athletes to coach in an informal community setting wherein they are inspirational and appreciated as athletes and as role models for health and wellness.
7. It connects national team athletes with the high school student athletes leading the camp, enabling relationships and mentoring.
8. It partners with local sport providers – a tennis school, the University of Toronto swim team, the City of Toronto’s

SportLeadership Program, among others, to enable a broader connection to community.

Student Camp Counsellors, when interviewed, report that their participation reinforced that sport can be a positive experience and connect people from different communities, regardless of their skill. They learned that enabling children to learn different sports built self-confidence, a sense of inclusion, and the knowledge that one can learn. This latter observation was one of the most powerful emerging from the camp: many of the campers did not seem to realize that sport skills are learned and not innate. On arriving at the camp a number had reported that “I cannot swim.” We had to persuade their parents that they could learn and that the process would be safe. The outcome was children comfortable in the water (excellent drowning prevention), and the stunning realization that swimming is a learned skill. The delight in learning was extraordinarily powerful for all involved and gave us all a strong sense of the power of possibility in transforming one’s sense of self.

The student leaders observed campers becoming more involved with each other and less socially isolated through the shared experience of sport and play. They suggest that it is the very physicality of sport that forces positive interaction as children must share to play together.

All the student camp leaders reported that they were highly motivated to bring sport to younger children because of their experiences in sport, both positive and negative. They learned through the camp that they don’t have to wait until they are

adults to make a contribution to their communities: they can do it now, in high school. They also learned through their relationships with participating national team athletes that athletes are people for whom they now feel more appreciation. The athletes who coached at the camp report the power of connecting children with their sport and how these relationships fueled their performance.

The high school students also reported that when campers returned to the camp in its second year, they wanted to help and to be a part of the camp leadership. Participation in an environment focused on inclusion had encouraged young children to understand that sport can be a vehicle for personal growth and belonging. Campers reported, almost unanimously, increased self confidence, greater mastery of sport skills, a greater willingness to try new things and a sense of relatedness.

The camp is now entering its third year. Participation more than doubled in year 2, by all measures – campers (from 40 to 90 per session), student counselors (from 12 to 32) and athletes (from 6 to 13). This year we plan to expand the camp to another location at a public secondary school.

The use of sport as a method to engage the student athlete in his or her community has met with tremendous receptiveness from young people, and their communities. Young people understand from experience that sport builds competence, autonomy and relatedness, which enhance self-motivation and mental health (Ryan & Deci, 2000). Sport thus enhances the internal focus of human development, while also connecting students to their

external world in positive ways. We believe this is important because only people functioning at their best are equipped to address the world's issues, the ultimate purpose of building a sense of social responsibility in people of all ages.

The Montenegro Example – Game, Set Peace Program

The Montenegro Olympic Committee has taken strides towards building social responsibility into its mandate through the Game, Set Peace program. Montenegro has experienced two decades of social crisis. Due to the loss of lives from conflict, there are many orphans who are discriminated against and excluded from society. The Game Set Peace program created a project to organize camps for children from the country's only orphanage with a mission to enable an environment for those children to mix with their peers and to gain life skills. Another focus for the children was on living skills needed to develop resilience and a secure identity and sense of self, through opportunities to learn adaptive, management, and coping skills, to practice communication skills, to learn how to build relationships and interact positively with others, and to learn how to use critical and creative thinking processes. Mr Igor Vušurović (Olympic gold medalist, Volleyball, Sydney 2000) was an ambassador for the project.

The program introduced several sports to the children, including tennis, soccer, kayaking, running, and physical education classes. The Game Set Peace program also established a "Special Olympic Day" and a "Women and Sport Day" in which five hundred children participated in sports

with the clear message: Sport is for all regardless of gender, age or ability. These efforts in Montenegro demonstrate the continued power of sport, led by athletes, to address social change.

Programs like Athletes in Motion Jumpstart sport for community camp and the Game, Set Peace program offer two examples of how ASR is being implemented at different levels of sport. Sport systems worldwide would do well to consider how to build ASR into their sport programs and athlete development models, in particular within the long-term athlete development model.

“Positive” Long-Term Athlete Development

The long-term athlete development model was developed by sport specialists in the mid 2000's. It aimed to create a framework of athlete development that balanced training load and competition throughout childhood and adolescence (Balyi & Hamilton, 2004). While the LTAD model wasn't novel (Bompa, 1995; Riordan, 1977), it employed a greater scientific basis for training children and adolescents and thus was widely adopted by national sport systems. The model builds upon empirical evidence in the areas of optimal trainability, maturation process and levels, onset of peak height velocity and trainability windows (Balyi, 2001). The model highlights four stages of development, which take into consideration athletic capabilities and sport specialization after pubertal changes, namely: FUNdamental phase, Training to train phase, Training to compete phase, and Training to win phase (Balyi & Hamilton, 2004). While the model

highlights the many intricacies of the physical development of an athlete, the model contains little content regarding the psychosocial development of an athlete. While the model does highlight the importance of character building and the holistic development, little direction is given as to how to implement such important aspects of an athlete's psychosocial development. This failure of sport to provide support for an athlete's positive psychosocial development needs to be addressed. While this may seem like a daunting task, there are many resources available to help with this process such as the positive youth development framework.

Positive Youth Development, a strength-based approach to development, recognizes youth as motivated constructive agents of their own development (Larson, 2006). It focuses on "enhancing the fit between the capacities of young people and the assets for positive development that exist in their communities" (Lerner, et al., 2005, p.15). The PYD framework suggests that in order to enhance youth's psychosocial development youth need appropriate environments (context), caring adults (external assets), and opportunities to acquire life skills (internal assets) (Petitpas et al., 2005). While the first two components of this framework are common points of discussion in sport (training environments and coaching), the last component is less prominent.

It has been argued that "it is not sport per se that teaches life skills; it is a sport experience that is designed in such a fashion that its participants can transfer what is learned to other domains" (Danish & Nellen, 1997, p.103). This intention

towards design is above and beyond what regular sport programs provide (Gould et al., 2006) and what is currently outlined in the long-term athlete development model. It has been argued that strategies must be taken in order to help coaches, sport administrators, and sport leaders effectively plan and facilitate positive youth development in sport (Camie et al., 2011). For example, in a recent article written for coaches about how to facilitate PYD, one of the identified strategies is the facilitation of social responsibility activities. While they do not specifically use the words 'social responsibility' they refer to the important role social engagement plays in helping young people thrive in life (Lerner, et al., 2005). Positive youth development highlights the importance of developing opportunities where youth can engage in the social world (Lerner, et al., 2005). Drawing from this field, the LTAD model would do well to include athlete social responsibility in order to encourage "positive" athlete development.

The long-term athlete development model (LTAD) has made important strides in addressing the shortcomings and improving the efficacy of the Canadian sport system. However, the LTAD is an ever-evolving model that must adapt to changing contexts. Sport, like other social institutions, needs to demonstrate that it is accountable, responsible, and worthwhile in order to ensure its place in society (Zeigler, 2007). We, as a society, invest in education because we believe it confers a societal good because it develops responsible citizens. So too, if sport is to continue to receive societal support, it must show that it is a societal good and not just another form of entertainment and

commerce. The LTAD would benefit from incorporating the concept of athlete social responsibility within its framework, to aid athletes not only in developing a sense of their role and responsibility in society, but a sense of themselves as human beings.

Conclusion

We have discussed a number of ways in which sport has been connected to social engagement, to the benefit of athletes' development as people and as performers, and to the benefit of sport. We propose that early exposure of young people to the power of sport as a tool of engagement means that they will never look back. Young athletes exposed early to a robust view of sport's power assume that their role as athletes is to use their passion and

talent to connect with others. Should one or more of them qualify for international teams, they will now look for connections to the world, such as the Giving Back and Sport Leaders Abroad programs of the Commonwealth Games Association of Canada. It is highly unlikely that they could ever view their performances in isolation from their community or think that their performances are the sum total of their gift back to community. Because once you have shared sport with a child, and witnessed the growth of that child, you "see you are making a difference and you feel good about yourself." And that can only enhance performance and contribute to a beneficial view of the role of sport in society.

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RAZVOJ DRUŠTVENO ODGOVORNOG SPORTISTE

Sažetak

U posljednjih petnaest godina sportske organizacije su naporno radile na promovisanju uloge sporta u društvu, o čemu svjedoči rastući broj radova oko sportski zasnovane korporativne društvene odgovornosti (Tainski & Babiak, 2011; Voker & Roditelj, 2010). Kako se sport smatra ključni društveni pokretač, neophodno je više istraživanja u cilju razumijevanja uloge koju amaterski sport i druge društvene i obrazovne institucije mogu da odigraju u razvoju sportista i društva ukupno, posebno u svjetlu sve većeg broja amaterskih sportista koji se bave društvenim promjenama. Ovaj rad istražuje ulogu društvene odgovornosti u okviru razvoja sportiste pomoću sportsko-društvene odgovornosti (ASR) (Karter, 2009). Kroz narativne preglede, posmatrajući u Kanadi i Crnoj Gori, ovaj rad nudi inovativne načine na koje mogu da i sport i društvo imati koristi od primjene jednog ASR okvira za sportiste u fazi njihovog sportskog sazrijevanja.

Ključne riječi: *društvo, sportista, odgovornost.*

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SELF-CONFIDENCE IN SPORT

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Original scientific paper

Abstract

Subject of this paper refers to self-confidence of athletes and their coaches. Recent researches in the field of sport medicine have been especially concerned with sport psychology. Objective of this paper is to turn public attention to the importance of self-confidence in sport as a function of achieving top results. Modern sports today record an increasing number of athletes of the same or very similar functional and physical abilities and technical-tactical readiness. In such situations, when two athletes of very similar capabilities meet, a more successful one will definitely be the one having more adequate psychological preconditions.

Key words: sport, success, confidence, psychological preparation.

Introduction

Fast social changes and increasingly complicated social life in the last hundred years due to scientific-technological revolution have made their impact on the development of sport and, accordingly, the development of sport science. Recent researches in the field of sport medicine have been especially concerned with sport psychology. Even though the guide books for coaches do contain chapters referring to psychological coaching basis, it's only since recently that some papers concerning self-confidence in sport can be found.

Modern ways of sport development and requirements that sport puts on athletes, do not allow the athletes who wish to succeed to lean on spontaneous experience that an athlete might gain during certain period of time. Favourable possibilities for planned utilization of means and methods intended to create favourable conditions for development of an adequate personality structure and organization as a good precondition for success should be searched for during their entire sporting life.

A special aspect of psychological preparation for competitions is the influence on the development and formation of personality traits necessary for success in a competition. Those traits are: diligence, perservance, determination, responsibility, emotional stability, self-control, self-confidence, equanimity and competitiveness. These traits are tested and formed in competitions. Self-confidence and trust in one's own strength ensure high performance, resistance to the rival's reactions, appropriate adjustment to sudden adverse conditions and full utilization of achieved level of preparedness.

Sport expression 'self-confidence in sport' is used to express the confidence an athlete has in his own capabilities or the level of assurance that he/she will be successful.

Theories on self-confidence in sport

All coaches consider confidence a dominant trait which considerably determines the quality of sport performance. Psychologists describe self-confidence as a dimension of self-awareness that is reflected in one's conviction of having those traits that make him/her competent to always have full control over the results of their activities, to adjust them to what he/she appreciates and considers desirable. (Havelka, 1992; cited by Bačanac, 2014, p. 58). Self-confidence in sport is manifested in sport situations and implies the level of an athlete's confidence in his/her abilities to be successful in sports.

''Self-confidence in sport can be defined in several ways depending on theoretical approach used to explain and measure it. Many sport psychologists, especially those

working as consultants in practice, consider it a key component in the programmes of mental excersises intended for athletes. The athletes themselves point out that self-confidence is a mental trait of key importance for their success in relevant sport performance, but only when it is high, stable and resistant to irresolution. That is why a wish of all young, talented and ambitious athletes is to make their fragile and unstable self-confidence that accompanies ups and downs of their performance much stronger, more stable and resistant.'' (Bačanac, 2014, p. 58).

There are theoretical approaches or models in general approach to self-confidence in sport used to test and explain it. However, researches on self-confidence in sport mostly contain two theoretical approaches: Bandura's model of self-efficacy and Vealey's model of multi-dimensional sport self-confidence, which was formed after the revision of her earlier model of features and states of sport self-confidence (Bačanac, 2014, p. 58). Bandura's model of self-efficacy was an incentive for a number of researches in the field of sport psychology while the model of Robin Vealey was intentionally developed for the needs of sport theory and practice.

Bandura's theory of self-efficacy

Self-efficacy refers to 'beliefs of an individual that he/she possesses abilities to organize and perform certain activities necessary for success in fulfilling a specified task' (Bandura, 1997; Bačanac, 2014, p. 58). Bundura's theory of self-efficacy describes self-efficacy in interaction with environment determinants aiming at changes in behaviour.

Self-efficacy is not a static feature of personality, but a variable characteristic that assumes control of physical performance disturbing thoughts and affective states. ”According to this theory, internal personal factors, environmental events and behaviour have mutual impact on each other, so a full understanding of human behaviour in certain situations requires understanding of interactive effects among a person, environment and behaviour” (Bandura, 1997; Baćanac, 2014, p. 58).

According to this theory, feelings of self-efficacy originate in the following sources of information: successful or unsuccessful completion of a task, experience gained through observing other models or demonstrators, verbal persuasion coming mostly from the coach, seeing your own self in a successful performance, physiological conditions that can be positive and supportive or negative and damaging, and emotional conditions of depression when depression and anxiety reduce self-confidence while feeling of energy and liveliness increase self-confidence.

Vealey’s model of sport self-confidence

Working on motivation for achievement and self-confidence in sport, Robin Vealey developed two models of self-confidence. Each of these models is situationally specific and combines a feature and state of sport self-confidence and involves aspects of achievement goals theory. According to the first model, sport self-confidence is a belief or level of confidence of an individual in his/her own abilities that make him successful in sport especially when he/she interacts with competitive orientation thus creating

temporary self-confidence that has a direct impact on behaviour and performance. Competitive orientation is not the same in everyone, because each person has a different notion of success. Competitiveness as part of self-confidence assumes an athletes confidence in his/her capabilities to perform or win regardless the quality of performance. For the needs of sport self-confidence testing, Vealey has developed the following instruments: TSCI (Trait Sport Confidence Inventory); SSCI (State Sport Confidence Inventory) and COI (Competitive Orientation Inventory). Using these instruments it is possible to foresee a more successful state of self-confidence of athletes in different situations and accordingly their behaviour and successfulness. However, as majority of athletes claim that social factors, such as behaviour of coaches, their communication styles as well as expectations of important adults, have an important impact on their sport self-confidence, this model can be considered incomplete. That is why Vealey reviewed this model in which she makes a distinction between self-confidence in current competition and one in forthcoming season based on a typical level of self-confidence of a person. This means that self-confidence can be something felt only today, which makes it unstable (state of self-confidence), or it can be part of a person thus very stable (feature of self-confidence).

Multy-dimensionality of self-confidence in sport is represented through components where the level of confidence determines how athletes will see and interpret (cognition) different situations they find themselves in, how they will feel then

(affects) and how they will behave (ABC triangle: emotions, behaviour, cognition).

Researches on self-confidence

Researches on self-confidence started in the 70s. In the beginning, a number of researches was done among persons not involved in professional sports. These researches dealt with the impact of self-confidence on motoric capabilities. The results showed that self-confidence has good impact on improved performance in motoric tasks.

A large number of self-confidence researches from the 80s dealt with interaction of self-confidence and performance in athletes performing under natural competition conditions (Vealey, 2009, p. 46).

In Serbia, researches on self-confidence have been done by the Republic Sport Agency. The biggest contribution to these researches has been made by psychologists who are both researches and educators: Ljubiša Lazarević and Ljubica Bačanac.

Types of self-confidence

Based on her own model of multi-dimensional self-confidence and a large number of researches, Vealey concluded that self-confidence in sport consists of three independent components or types of self-confidence:

- Physical abilities and training
- Cognitive efficacy
- Level of endurance

These three components are closely connected to:

- Competitive anxiety

- Ability of adjustment
- Sport performance itself.

Self-confidence is a key factor in discrimination between successful and less successful athletes. Level of self-confidence in athletes is highly influenced by their selection of goals, commitment and endurance.

Also, self-confidence may be observed and studied both in athletes and in coaches. Certain researches indicate that men and women can recognize themselves in different sources of self-confidence.

Characteristics of self-confident athletes

Athletes who have self-confidence believe in themselves. They believe in their abilities to gain required skills, physical and mental competence, i.e. they possess what is necessary to fulfil their potentials. An athlete with lack of self-confidence doubts whether he/she is good enough, whether he/she has qualities necessary for success. When an athlete doubts his/her success or expect something bad to happen, he/she creates a so-called negative self-imposed prophecy, which is very much present in sports. Negative self-imposed prophecies are psychological obstacles that lead to a magic circle: expectation of failure leads to real failure, which on the other hand reduces self-confidence and opinion of one's own self and increases expectation of future failures. For example, an athlete whose shape is declining expects to have a bad performance, thus increasing anxiety and tension, reducing concentration, which usually reduces additionally the athlete's expectations and imperils the final result.

According to Vealey (2001), it is important to recognize which other things influence self-confidence. They differ from athletes in individual and those in team sports. In individual sports these things are: physical/mental preparedness, social support, skills, performance and physical presentation, i.e. the performance itself. In team sports things of importance are: skills, social support, physical/mental preparedness, coach's leadership and performance.

The research that included 63 top athletes in different sports shows that self-confidence is a key component of successful competition (Bačanac, 2014, p. 67). About 90% of these athletes stated that they had a very high level of self-confidence. Top athletes, regardless of sport they compete in, are consistent in the

- Action strategy
- motivation

Level of self confidence of coaches depends on the following factors: previous success of the athlete, experience in the relevant sport, experience in coaching, social support, the athlete's talent observed, progress achieved by the athlete during training and education. With female coaches the social support has bigger role in building self-confidence than with male coaches. Sources of self-confidence for both the athletes and coaches are similar, but the coaches gain much more self-confidence and satisfaction from the success achieved by the athlete they coach. Self-confidence of coaches influences their behaviour, commitment, the athletes' satisfaction and team work, i.e. self-confidence of the whole team. Various mental exercises have proved to be very

level of confidence in themselves and their sporting abilities.

Even though it is mostly the athletes lacking self-confidence that we meet in sports, it should be pointed out that there are those with excessive self-confidence, that is, false self-confidence. Their self-confidence is higher than their abilities would allow for. Their performance is not successful because they believe they should not prepare or invest much effort in order to complete the task.

Self-confidence of coaches

Research of self-confidence in sport confirmed the fact that self-confidence of coaches is as important as that of athletes. A conceptual model of self-confidence of coaches comprises of:

- technique
- character building

successful in increasing the athletes' self-confidence. The athletes using a variety of relaxing techniques during mental exercise, meditation and those setting their own goals, showed a much higher level of self-confidence than those who did not do all these.

Gender and self-confidence

In individual sports, females much more than males rely on social support and physical preparedness as important sources of their self-confidence. On the other hand, males show higher level of belief in presenting their skills. Researches indicate that comparison and winning make considerable driving force in building self-confidence with male athletes, and personal goals and standards are an

important driving force with female athletes.

The concept of fear of success indicates different reactions of males and females in certain competitive situations. Females and males consider certain activities either incompatible with gender or proper for only one of the genders. For example, rugby is considered a male activity and ballet is considered a female activity, while swimming is neutral. Both males and females consider themselves more capable of tackling tasks compatible with their relevant gender.

Some researchers claim that females have lower self-confidence than males in almost all forms of achievements. Females often show very low self-confidence. There are three important factors influencing gender-based differences in self-confidence: the nature of the task, availability of accurate and clear information and social context. Researches indicate that females do not show lack of confidence in all situations. Strategies to enhance self-confidence with females may be useful. Suggested strategies include actions to ensure success, avoid gender inadequate activities, avoid misunderstanding through effective communication, make use of proper presentation of most adequate performances, and to reduce competitive situations during learning.

Social acceptance is more important for female athletes because it increases their self-confidence as confirmed by numerous researches.

Development of self-confidence

Even though self-confidence might not be a constant but rather temporary state, there

are methods every athlete can follow in order to enhance it. Successful athletes work constantly on building their self-confidence. Although success is believed to enhance self-confidence, it is more often that the opposite is true: good performance is a 'consequence' of self-confidence. The most accurate would be to conclude that self-confidence is both a cause and a consequence of success in sports. Self-confidence is the most consistent factor in distinguishing highly successful and less successful athletes.

There is a number of techniques for developing self-confidence. The role of coaches in development, enhancement and maintenance of self-confidence with athletes is of key importance. On daily basis the coaches can influence the development of desired level of self-confidence and aspirations of athletes to be more successful than they currently are, namely by encouragement, support, creation of winning strategies and tactics, building positive atmosphere during trainings and competitions, proper attitude toward mistakes, creating training conditions that simulate actual competition conditions in which the athletes will be successful, etc. Self-confidence is built by successful performance, self-confident behaviour, self-confident thinking, imagination, increasing physical fitness and mental preparedness.

Development of self-confidence represent a very powerful method in helping people to control stress and anxiety. Highly self-confident people who believe in their capabilities experience less anxiety. Moreover, when they experience increased anxiety, they tend to interpret it as encouraging not discouraging. Two

important strategies for self-confidence enhancement are:

- Maintenance of positive atmosphere during training and competitions
- Development of positive and productive attitude toward mistakes and loss.

One of major stress sources for athletes is insecurity mostly present during training in negative atmosphere. It is the coaches who create negative atmosphere unconsciously mostly when they get angry with the athletes who make mistakes. Their negative approaches on such occasions, when they yell during entire training session, have big influence on the athletes' self-confidence. Before competitions, those very coaches claim that they are confident in their athletes' success thus causing even bigger lack of confidence with the athletes.

Effective approach in enhancing self-confidence is to create positive atmosphere during training sessions. Athletes need frequent and honest encouragements. In that way, when athletes find themselves in stressful situations, they become confident in their own abilities to deal with such situation successfully. It is important to express a positive, productive attitude toward mistakes, even toward defeat. When athletes make mistakes, usually they become frustrated, often too excited and anxious. This leads to unproductive changes of attention and increased muscle tension, which has additional damaging effect on performance.

It is very useful to teach people to look upon mistakes as useful experiences in the

process of achieving personal perfection. No athlete is happy with mistakes, but it is a big mistake to make them feel upset because they made a mistake. State of anxiety will only cause new mistakes and failures, so it is much better to try to achieve at least a partial success, remaining cool and learning from the mistake, using it for future success. A good way to build self-confidence is to organize situational training sessions when the competition conditions are simulated, because in this way the athletes increase their self-confidence and find it easier to cope with stressful situations during real competitions since they are already familiar with the situation.

Conclusion

Self-confidence is a belief that a person has inner sources, required abilities to be successful. The definition is based on the fact that the essence of self-confidence is belief and expectation, even though there are numerous definitions of self-confidence. All of them refer to the belief of individuals in their own competences or their expectation to be successful based on those competences.

Self-confidence is characterized by high expectation of success. It can help generate positive emotions, improve concentration, influence the setting of goals, increase commitment, direct the athletes toward winning rather than toward avoiding failures, enhance the psychological strength of athletes. This fact leads to the conclusion that adequate approach to mental training is extremely necessary in sport psychology. It has been proven that

self-confidence increases considerably through mental training.

Majority of athletes, coaches and psychologists deeply believe that from psychological point of view self-confidence is the key factor for success in sports. It is described as mental skill that defines mental endurance. Level of self-confidence is a key to success with elite athletes.

There are different factors that influence the development of self-confidence with athletes in individual sports and those who are in team sports. There are, also, differences in factors that have an impact on the development of self-confidence

with female athletes in regard to male athletes. Development of self-confidence is also influenced by the quality of training sessions, meaning that the role of coaches is very important.

Development and maintenance of self-confidence is one of the biggest requirements of mental training. Development of self-confidence with athletes is identified in sport literature as one of the 'secrets' of their success. They are helped by their coaches and sport psychologists. Impact of self-confidence on an athlete's performance is one of the most intriguing topics in sport psychology.

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SAMOPOUZDANJE U SPORTU

Sažetak

Predmet ovog rada se odnosi na samopouzdanje kod sportista i njihovih trenera. Istraživanja u oblasti medicine sporta su poslednjih godina naročito usmerena na oblast psihologije

sporta. Cilj rada je da se ukaže na značaj samopouzdanja u sportu u funkciji ostvarenja vrhunskih rezultata. Danas se u savremenom sportu pojavljuje veći broj sportista istih, ili približno istih, funkcionalnih i fizičkih sposobnosti, i tehničko – taktičke pripremljenosti. U takvoj situaciji od dvojice sportista sa približno izjednačenim navedenim svojstvima, uspješniji će biti onaj koji ima odgovarajuće psihičke preduslove.

Ključne reči: sport, uspeh, sigurnost, psihološka priprema

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SPORT WITHIN IR

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Original scientific paper

Abstract

For domestic policy strategy analysts, the work should serve as a supplement to the future policy documents with attempt to trigger for adequate positioning of the sport in the prism of overall country's development. It is an attempt to realistically as possible discloses position of sport within IR with an example from the socialist Yugoslavia.

Key words: IR, sports, politics, ideology, globalization

Introduction

It is not uncommon that the strategy of the sport system of each state is a reflection of the general situation within the same one shaped by global arena of IR. Many pages have been written in the world in order to understand the role of sport in both internal development and as a tool in international relations. Sport (elite one) is co-opted by politics.¹ Allison noted that various governments (leaders) have endorsed international sporting competition as a testing ground for the nation or for a political system. German Nazis, Italian Fascists, Soviet and Cuban Communists, Chinese Maoists, western capitalist democrats, Latin American junars- all have played the game and

believed in it.² On another hand sports, sporting associations and sport individuals gaining a greater worldwide influence and becoming visible non state actor in the arena of IR. Media influence cannot be neglected and sport has become an indispensable segment of global society.

Institutional positioning of sport within IR

Nowadays sport is the active agent of international development and popularly used term" Sport for Development and Peace" (hereafter SDP). In his speech, former UN Secretary General Kofi Annan spoke of the importance of sport as a potential facilitator of global social progress, overcoming social and cultural

¹Jackson, S. and Haigh, S., (2008). *Between and Beyond Politics: Sport and foreign policy in a globalizing world*. 11 (4) *Sport in Society* 354.

²Allison, L. (2003). *The Changing Politics of Sport*. Manchester: Manchester University Press, 2003. p. 17.

differences based on human rights.³ In the name of the SDP movement a number of international NPOs (Olympic Solidarity, Right to Play, Playing for Peace, Kicking AIDS out) are engaged in underdeveloped countries through programs such as sports development, post-conflict reconciliation, humanitarian assistance, education and prevention.

Historically speaking, sport played an important role across the globe but it was formally recognized after WWII. Institutional positioning of sport occurred through human rights, development and peace process. In the 1952, UNESCO recognized sport as a tool for education.⁴ Seven year later, by UN Declaration on children rights was acknowledged importance for kids to participate in sport activities as well as an obligation for public authorities to enable conditions for that.⁵ In the 1978, UNESCO place sport and physical education as a fundamental right for all introducing an International Charter of Physical Education and Sport.⁶

In the 1991, members of the Commonwealth countries have recognized the unique role of sport in eliminating poverty, promoting individual development as well as funds for the social development.⁷ UN adopted numerous resolutions on respecting Olympic ideals

and to end all conflicts.⁸ End of the millennium has brought adoption of the MINEPS III Punta Del Este Declaration, with specific aim on sport for all.⁹ Bearing in mind growing importance of sport, UN General Secretary appointed Special advisor for SDP.¹⁰ Not long after, followed by 1st International Conference on Sport and Development, UN adopted Resolution on SDP.¹¹ In the 2005, UN proclaimed International Year of Sport and Physical Education, emphasizing the importance of sport for reaching MDGs.¹²

Institutionally, European Sport for All Charter is document within Council of Europe, noting that sport shall be encouraged as an important factor in human development and appropriate support shall be made available out of public funds.¹³ Bearing in mind principles from the European Sport for All Charter, European Sport Charter was adopted in 1992 (revised in 2001) in order to set up a joint principles for all at the Pan-EU level representing policy foundation in the field of sport within Coe.¹⁴ As complementary document to the European Sport Charter, acknowledging ethical values that sport stand for, Code of Sports Ethics was adopted.¹⁵

³http://www.un.org/sport2005/resources/statements/kofi_annan.pdf (accessed on 14 of May, 2014).

⁴<https://www.icsspe.org/content/international-olympic-committee> (accessed on 13 of May, 2014).

⁵1959 UN Declaration of the Rights of the Child.

⁶1978 International Charter of Physical Education and Sport.

⁷1991 Harare Commonwealth Declaration.

⁸<http://www.un.org/events/olympictruce/resolutions.shtml> (accessed on 15 of May, 2014).

⁹1999 UNESCO Declaration of Punta Del Este.

¹⁰http://www.un.org/wcm/content/site/sport/home/unplayers/special_adviser (accessed on 10 of May, 2014).

¹¹UN Resolution A/RES/58/5 (2003).

¹²UN Resolution A/RES/60/9 (2005).

¹³Resolution (76) 41 (1976).

¹⁴Recommendation No. R (92) 13 REV (1992).

¹⁵Recommendation No. R (92) 14 REV (1992).

The Amsterdam Treaty¹⁶ and three years later Nice Declaration on Sport¹⁷ clearly emphasize the social importance of sport. Those documents served as a foundation for the first strategic initiative in sport, the European Commission White Paper on Sport.¹⁸ Document is primarily focused on three segments: societal role, economic importance and organization of sport. In section four, concerning organization, of sport, is stated that there is no unique approach for sport regulation and attempt of Commission will be to encourage sharing of best practice governing models. In the light of numerous disputes, difference in the sport systems, sport is broadly included in the Lisbon Treaty, Article 165¹⁹:

“The Union shall contribute to the promotion of European sporting issues, while taking account of the specific nature of sport, its structures based on voluntary activity and its social and educational function.” (Para. 1)

“Developing the European dimension in sport, by promoting fairness and openness

¹⁶Treaty of Amsterdam Amending the Treaty on European Union, the Treaties Establishing the European Communities and related Acts., Declaration on Sport. Official Journal C 340, 10 November, 1997.

¹⁷Treaty of Nice, Amending the Treaty of European Union, the Treaties establishing European Communities and certain related Acts., Declaration on Sport. Official Journal C 80/8, March, 2001.

¹⁸COM (2007) 391. July, 2007.

¹⁹ Consolidated version of the Treaty on the functioning of the European Union, Title XII Education, Vocational Training, Youth and Sport. Official Journal C 115/51. May, 2008.

in sporting competitions and cooperation between bodies responsible for sports, and by protecting the physical and moral integrity of sportsmen and sportswomen, especially the youngest sportsmen and sportswomen.” (Para. 2)

“The Community and the Member States shall foster cooperation with third countries and the competent international organizations in the field of education and sport, in particular the Council of Europe” (Para. 3)²⁰

For sport related issues it is important to consider following provisions of the Treaty on the Functioning of the European Union (TFEU):

Public Health, Title XIV:

“Union action, which shall complement national policies, shall be directed towards improving public health, preventing physical and mental illness and diseases, and obviating sources of danger to physical and mental health. Such action shall cover the fight against the major health scourges, by promoting research into their causes, their transmission and their prevention, as well as health information and education, and monitoring, early warning of and combating serious cross-border threats to health.” (Para. 2)²¹

Free Movement of Persons, Services and Capital, Title IV:

“Freedom of movement for workers shall be secured within the Union.” (Para. 1)

²⁰Ibid., 47.

²¹Ibid., 122.

“Such freedom of movement shall entail the abolition of any discrimination based on nationality between workers of the Member States as regards employment, remuneration and other conditions of work and employment.” (Para. 2)²²

The tendency of this chronological display clearly shows the intention to incorporate sport into a number of strategic documents and the activities, thus ensuring the basic conditions for the development of individual societies (countries) on one side and harmonizing within the global community on the other.

Practical implications of sport as tool within IR

Political and cultural dimension of sport is recognized as a significant contributor to the IR as well as a way to accomplish political goal.²³ Houlihan noted intertwining of sports and politics through the role of sport in diplomacy, ideology, nation-building, the international arena and the economy.²⁴ On the other hand, the commercialization of sport, which somehow transcends state organs, which ultimately contributes to the appearance of corruption in sport and exclusion of people from the active or passive participation in sports. It is not uncommon to international sports organizations influence the decisions of state institutions

to their financial capabilities and extensive network of lobbyists.

As globalization progressed, number of participants in the arena of international relations increased. In recent years, as the notes and Dragan R. Simic, in his book, the status of the basic subjects in international relations has undermined the emergence of new entities²⁵, i.e. International and non-profit organizations, such as the FIFA or IOC, that have huge impact on the international community. Free diplomatic space" grabbed" the leading international sports organizations. In the 1992, after the breakup of Yugoslavia and the Resolution 757 of the UN Security Council which was first introduced sport as a component of the sanctions.²⁶ IOC suggested a plan for individual athletes from Yugoslavia to participate under the IOC flag.²⁷ The same principle was also used in the 1994, in collaboration with WHO, UNICEF and the Red Cross to provide participants attendance and participation at the Winter Olympics in Lillehammer.²⁸

Sports movement, created the necessary conditions making it an indispensable segment in designing strategies and implementing the same activities. Sports organizations are full partners and consultants in various political and sensitive issues, such as violence, racism,

²²*Ibid.*, 65-65.

²³*The Sports Historian*, 20, 2 (2000), pp. 1-23.
Published by: The British Society of Sports History.

²⁴Houlihan, B. (1994). *Sport and International Politics*. Hemel Hempstead: Harvester Wheatsheaf.

²⁵Simić, R. D. (2003). *Nauka o bezbednosti-savremeni pristupi bezbednosti*, pp. 15-19

²⁶UN Resolution 757 (1992).

²⁷http://www.olympic.org/Documents/Reports/EN/en_report_668.pdf (accessed on 18 of May, 2014).

²⁸Jarvie, G. (2008). *Sports as a resource of hope, Foreign Policy in Focus*, 20th.

drug abuse, corruption and manipulations, promoting education, health, tolerance.

Similarities between sport and IR could be described by Orwell skepticism:

“I am always amazed when I hear people saying that sport creates goodwill between the nations, and that if only the common people of the world could meet one another at football or cricket, they would have no inclination to meet on the battlefield. Even if one didn't know from concrete examples (the 1936 Olympic Games, for instance), that international sporting contests lead to orgies of hatred, one could deduce it from general principles.”²⁹

Aron is probably more precise, stating that a football match is not simply an event pitting team against team; it is confrontation of nations through sports match (country).³⁰

Noted by Strenk, sport is perceived as an action-reaction relation ³¹ described by following statement:

Founder of the International Olympic Committee Baron Coubertin lived idealizing sport that could serve as a platform for international cooperation and to bring long lasting peace by influencing

²⁹George Orwell, (1986). “The Sporting Spirit”, in *I belong to the left: The Complete Works of George Orwell*, vol. XVII: 1945. Oxford.

³⁰Raymond Aron, (2001). “Peace and War; A Theory of International Relations”, Zagreb: Golden Marketing.

³¹Strenk, A. (1979). “At what price victory? The world of international sport and politics”. *The Annals of the American Academy*, p. 445.

global politics. The footprint of this relationship reflected in the resilience of the politics that will in the end overcome and shape use of sport in order to promote their strategic interests.

Good examples of the relationship between sport and politics in the arena of the IR certainly are the Olympic Games and boycotts. Aggression on Afghanistan marked as cause for boycotting the Moscow Olympics (1984) by WEST which led four years later boycotting (in smaller scale) LA Games (1988) by EAST.³² On the other hand going a little bit in the past and “peek” in the US-China relations, there is a chance to spite the western misunderstanding of Chinese tradition, threatening “far east” with the same approach (containment)³³ as used with USSR, diplomatic relations were opened through sport by invitation to the U.S. table tennis team to visit China.³⁴

Sport and IR in the socialist Yugoslavia

Former Yugoslavia has positioned in the very small frame between clashing ideologies (capitalism and communism) with attempt to find a “third” way by

³²A lot has been written about this topic. Jay, K. (2004). *More Than Just a Game*, New York: Columbia University Press, p. 181; Gwertzman, B. (1979) “Carter Calls Soviet Actions a ‘Threat’,” *New York Times*, December 29, 1979; Burns, J. F. (1984). “Protests are Issue”, *New York Times*, sec. A; Shaikin, B. (1988). *Sport and Politics: The Olympics and the Los Angeles Games*. Preager Publisher, p. 50.

³³R, Vukadinović. (2008). “Vanjska politika SAD”. *Politička kultura*, Zagreb, p. 192.

³⁴Harding, H. (1999). *A Fragile Relationship: The United States and China since 1972*. The Brookings Institution, p. 24.

creating the Non-Aligned Movement.³⁵ Lazic stated about Yugoslav way "was supposed to mean 'neither the East nor the West' but in reality it was a compound: both the East and the West".³⁶ Yugoslavia developed a peaceful coexistence doctrine strongly supported by the NAM. This has root from IR constellation in the 1954-55, which Bogetic explained as anequidistant constellation with blocs.³⁷

During the Cold War era, Yugoslavia remained not aligned to either the US or USSR, which allowed it to experiment with the best of both worlds in terms of sports development- the worker-athletes model (USSR) and the student-athlete model (USA).³⁸ The institutional support was granted to both models on all levels, including the educational system, the military, and public service. Back then, gender, racial, ethnicity, and religion was taken into account and inclusivity was sometimes excessive.³⁹ At the institutional

level, the situation was slightly different as political background (commitments to the party) was a determining factor to be involved as a stakeholder in sports organization.⁴⁰

Regardless of the high level of political involvement, sport system in Yugoslavia reaped the benefits of that development. A philosophical approach existed in former Yugoslavia at that time; participation in sports (physical education, professional and recreational) was well structured (organized from national to community level) and open to everyone with focus on educational, health and community development aspects which could be described by the philosopher Isocrates, who stated in the Antidosis, about importance of training the minds as well (not only the body) of athletes in order to be prepared for completions (life?):

"Are twin arts; parallel and complementary- by which their master prepare the mind to become more intelligent and the body become more serviceable, not separating sharply to kinds of education, but using similar methods of instruction, exercise, and other form of discipline. Watching over them and training them in this manner, both the teachers of gymnastic and the teachers of discourse are able to advance their pupils to a point where they are better men and

³⁵ Lothi, L. (2014). *The non-aligned: apart from and still within the Cold War*. Edited by: Miskovic, N., Fischer-Tine, H., Boskovska, N. in *The Non-Aligned Movement and the Cold War*. Routledge.

³⁶ Lazic, M. (2003). "Serbia: a Part of Both the East and the West?". *Sociologija XLV* (3): 193-216.

³⁷ Bogetić, D. (2000). *Jugoslavija i Zapad 1952-1955. Jugoslovensko približavanje NATO*. Beograd: Službeni list SRJ (Yugoslavia and the West 1952-1955. Belgrade). p. 177.

³⁸ Cristoph Bertling, (2007). *The Loss of Profit? "The Rise of Professionalism in the Olympic Movement and the Consequences for National Sport Systems"*, *Journal of Olympic History* 15, No. 2.

³⁹ Socialist principles introduced pragmatic plans to ensure equal representation of Yugoslav citizens

no matter of religion, ethnical, class or any other differences,

⁴⁰ Sevic Z. and Rabrenovic, A. (1999). *Civil Service of Yugoslavia: Tradition vs. Transition*, in T. Verheijen and A. Kotchegura, eds. (1999.) *Comparative Civil Service Systems: Central and Eastern Europe*, Aldershot: Edward Elgar, pp. 47-82.

where they are stronger in their thinking or in use of their bodies”⁴¹

Concluding remarks

The work showed that the sport secured position as a tool within IR, but also noted that role is not a crucial one. A more common example is that of sports events becomes a reflection of relations in the global arena of IR (ping-pong diplomacy or boycotts). Blocs through elite sport tried to demonstrate superiority and to indicate advantages in comparison to the rival side. Global politics shape use of sports.

Socialist Yugoslavia through the welfare system inherited sport as a part of the culture of citizens, spreading the values of work, responsibility, readiness and team spirit. Amateur and school sport, were used for the development of the sport for all, and elite sport was a reflection of the position of Yugoslavia in the arena of IR. The way in which leadership at the time were operating between blocs, strongly relied on both East and West organizational specificity creating an original system of sport as a reflection of the Yugoslav position within global arena of IR.

⁴¹ *Isocrates, with an English translation done by George Nolin, (1929).vols 3. London and New York, vol II, pp. 289, 291*

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SPORT U SISTEMU MEĐUNARODNIH ODNOSA

Sažetak

Mnogo stranica je u svijetu napisano sa ciljem da se shvati uloga sporta kako u unutrašnjem razvoju tako i kao sredstvo u međunarodnim odnosima. Nasuprot tome, na Balkanu, čini se, baštini se jednoličan doživljaj sporta (kroz prizmu profesionalnog sporta) zanemarujući važnost sporta kao sredstva sa razvoj društva. Za domaće donosioce odluka, analitičare, ovaj rad je dodatak budućim strateškim dokumentima sa pokušajem adekvatnijeg pozicioniranja sporta u prizmu cjelokupnog razvoja društva. Sa druge strane, ovo je pokušaj realnog sagledavanja položaja sporta u areni međunarodnih odnosa sa primjerom socijalističke Jugoslavije.

Ključne riječi: IR, sport, politika, ideologija, globalizacija.

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COACHING PHILOSOPHY

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Abstract

The topic of this paper refers to the coaching philosophy. The aim is to demonstrate the importance of possessing certain abilities and characteristics that are important for a coach to be successful. The coach is a key figure in the development of a sporting career of every athlete and one of the most important factors for their success. A coaching career requires a lot of work and dedication to the job, and therefore a high level of involvement in the development of athletes. A coaching philosophy is the result of life experiences of the coach and should be in sync with his/hers general life principles, or, their life philosophy. Each coach eventually established a coaching philosophy and no matter how famous or successful other coaches are, they should not be copied.

Keywords: coach, life principles, success

Introduction

Coaches carry the coaching-competitive process. Being a coach means to be a friend and a teacher. The coaching job is certainly easier if one coaches sports stars who have formed as individuals and elite athletes. Such athletes are usually coached by excellent and very well known and recognized coaches. Coaching the youth has unfortunately been placed in the background, although these coaches are the most responsible in forming of an athlete. Athletes develop by the age of 18 and they are often not coached by well known and top coaches, but by amateur or semi-professional coaches. The coaching job is very difficult, and it requires that coaches be formed individuals with a

stable family life, to be people who are recognized in the community.

Although coaching has often been done by former athletes, the characteristics of a top athlete are not necessary or critical for someone who wants to be a successful coach. Certainly it is important for the coach to have the experience of an athlete, but to be a successful coach one needs different capabilities and the other characteristics, knowledge being the crucial one.

Top coaches must have a range of biological and social factors as well as experiences that they will pass on to their athletes. There are various types of coaches that differ in their knowledge, such as beginners and accomplished

coaches. While coaches beginners are under the strong influence of their upbringing and heritage, accomplished coaches often rely on their experience from previous work. The coaching job is stressful and therefore coaches must have a strong personality, and the pressure from the outside only stimulates the top coaches. Coaches, just like the athletes, with time develop and progress, acquire new knowledge and experiences, and thus become better coaches. There are various styles of coaching by which every coach is recognized, with their personalities playing the biggest roles in this distinction. Each coach must have a strong personality, and if in addition s/he is a positive person, there is a better chance this person will become accomplished in the community.

Coaches must combine at least two important dimensions of their profession, no matter with whom they work. One refers to professional work and knowledge of the job that they do, and the other relates to educational work, and education of young people. These dimensions help the coach become creative, unlike a coach who is just a perpetrator of someone's orders. Sports have long exceeded the fun level and have become a lucrative business, but they are still, perhaps more than ever before, activities in which one can express creativity. Educational activities are a priority in the school and recreational sports, while in registered sports professional work comes first. But neither of these dimensions should be omitted.

A coach needs to have leadership skills, to know how to make a suggestion, to motivate, and to govern. One of the most important coaching skills is the ability to

establish cooperation. A coach, no matter how capable s/he is, is not entitled to seek a blind trust. Establishing reciprocal relationships, validation, implementation of ideas, plans and programs, achieving progress and success, creates mutual trust. One of the goals of sports is to build a strong personality in the athletes who believe in their powers, in themselves, and not in the powers of others - powers that come from the outside: from the coach or the external forms of teamisation. Administration, management, and conduct is nothing but a transfer of positive energy in its natural purposeful shape and form. Only an individual with a strong personality can transmit energy to another person. Only a person full of energy can transmit the desired amount of energy to the one s/he wants to help, whom s/he wants to move and manage.

Every coach, regardless of whether s/he is an autocrat or a democrat must know the job they are doing and comply with the minimal ethical principles that will help put the health of the athlete first. Collectively, every larger or smaller group, which directly (professional teams) or indirectly (social - sports workers - officials) works with athletes, must not for some "higher" goals (economic, political) sacrifice the health of athletes. Unfortunately, we have witnessed these principles being violated, above all, by the experts who work directly with athletes: coaches and doctors. Various stimulants that athletes use for short-term boost of their mental and physical abilities directly affect the deterioration of their health.

Coaching categorization

Implementing the preparation and performance of athletes is done by the

coach - an individual. Today in sports teamwork is necessary and it involves various coaches from different specialties.

The criteria for classification of sports professionals in Serbia or acquiring the coaching title, as well as the way of granting it is set forth by the Ordinance on the Criteria for Categorization of Sporting Professionals. Categorization covers coaches in sports whose branch federations are members of the Sports Association of Serbia and whose branch federations have an interest in making the categorization criteria (Mašić, 2006, 92). The criteria for categorization of sporting experts in individual sports and team sports are different, although the titles are identical. On the basis of accomplished results in official sports competitions, and in accordance with defined criteria, the coaches are ranked and they acquire the following coaching titles:

TOP COACHES

- Distinguished coach
- International class coach
- Federal class coach

COACHES

- State class coach

Given that sports competitions are the spectacles of the highest caliber, which are followed by more than one billion viewers in sporting venues and on TV, the work of coaches and athletes, which is represented by the results, is followed virtually by almost the entire world public. Therefore, the selection and transfers are made among the coaches. Obviously, the decisive factor is not the anthropological status - as is the case with athletes, but the decisions are made primarily on the basis of their

expertise, success, knowledge transfer, communication and organizational skills, experience, and results accomplished.

Coach as the Leader of the Coaching Process

A modern sports coach has multiple roles in educational work: coach the creator, coach the researcher, coach the planner, coach the organizer, coach the diagnostician, coach the futurologist, coach the therapist, and coach the evaluator (Stefanović, 2006, 70). Relations between coaches and athletes are the foundation of any successful operation.

Coaches prepare athletes on the basis of knowing their capabilities and knowledge, on the basis of other information, and on the basis of direct implementation of the training and competitive sports activities, setting up the appropriate tasks for the athletes, and leading them to the goal.

Between a sports training and personality there is interplay, an ongoing feedback loop in which the person with their structure determines participation, behavior and success in the sporting practice, which in turn influences the further development of certain personality structures. An experienced coach should apply psychological skills in the process of creating and managing the coaching process related to the following: individual personality, temperament, intellectual potential of the individual (team), motivation, personality traits, attention, and other pedagogical fundamentals of a sports training related to general didactic principles and applied didactic principles.

A coach is the leader of his/her activities. S/He is the leader in all professional areas

of the work, and so must monitor the external factors that may have an impact on the relationships with athletes. In team sports coaches' responsibilities go beyond the role of a leader of the team and grow into one of the club leader. The coach's role in communicating with the external environment stems from the position as one of the individuals most responsible for the success of the group. As the official formal leader, who is set up from "up above", usually without any say from the athletes, any information which s/he communicates to the group, or to the external world, has a different "weight" than when it is communicated by someone else from the club. This is the reason why the information must be "purified" and communicated in a manner that will not disturb the balance of the group. One should try to keep the information provided by the coach as a leader related to the success of the group.

Coach's influence on relations in the sports group, in comparison with other leaders, is the greatest. Coach's position ensures that through the leadership s/he affects the development of the group, the relations in the group, and the working effect of the whole team. By harmonizing relations among team members to affect the disturbed balance, a coach controls the completion of the tasks set for individuals, has the opportunity to encourage, reward and/or punish the members of the team. The coach directly intervenes in conflicts in the team and intermediates as a judge in resolving interpersonal relationships.

A coach will successfully lead the team if s/he enriches the formal leadership with favorable social and emotional relations and with subtle indications that they are

close in all areas. Establishing this type of closeness is hampered by the distance between the coach and team members, which is from the beginning manifested through differences in age and experience, and the relationship of superiority and inferiority. It is rare that the coach is the same age as the athletes. Sometimes this is even taken as the reason not to hire a young expert. A possible reason for the distance is the fact that the athletes in their roles are subordinate to the coach. The most appropriate way to reduce the distance is through personal emotional investment in the relationship with the athletes, which leads to the social and emotional attachment of the coach and team members. This relationship may be a significant reason for the success of the team. It is very important that the emotional attachment between the coach and athletes does not cross the line and become contradictory.

Leadership is determined by many factors, among which, when it comes to sports teams, the most important ones are the basic properties of groups (type of selection, level of success, quality of interpersonal communication, personality characteristics of the group members, etc.), personality of the coach, and group goals. (Lazarević, 2000, 208). The types of leadership most often mentioned and most studied are the autocratic, democratic, and free guidance types. The success of leadership depends on the compliance of personality traits of the leader with the conduct and performance of the group, and not just on a preference for a certain leadership type.

The autocratic leadership method involves complete submission and "blind"

execution of tasks. In this type of leadership everything is left to the leader: plan, activity, execution of tasks, the relationship among members, etc. Instructions are given in categorical forms and are always unidirectional, from coaches to athletes. In this type of leadership one can avoid the free flow of information and does not allow the athletes themselves to set goals and make plans. In sporting teams this type of leadership is not rare. The autocratic style of governance gets serious objections as it creates an unfavorable environment for the mental development of children and all forms of activities that have the upbringing and educational purpose. In our modern sports, a growing number of coaches, with whom this type of leadership prevails have had great sporting successes. This type of leadership reduces the level of responsibility as it is completely passed on to the coach. There is a misconception that, because of the stereotypical position of women in our society, women's teams leadership is oriented in this way.

Democratic leadership requires cooperation between the coach and the team, with an even distribution of roles, duties, and responsibilities. Permission is granted to have intensive communication among the team members, while the athletes are required to be active in setting goals and planning, as well as in the implementation of the plan. Nevertheless, the coach remains the leader and coordinator, whose leadership is expressed in the desire to perform tasks in an organized, rational, and effective way. All processes are two-way, i.e., with bilateral initiatives.

Democratic leadership is more effective than the autocratic leadership. It requires the leader not only to have great expertise, but also to have the ability to maintain good relations with the members of the group. This method of leading is based on cooperation and initiative, but also on the willingness of all the members to participate, and it is much more difficult than the autocratic method. Many coaches have shown resistance to the democratic way of running the team because they are not able to implement it.

Free, anarchic leadership is based on the unrestricted freedom of the members. There is practically no leadership. Leadership manifests itself only in delegating tasks and the closeness of the members is reduced to the objectionable minimum. In sports groups, especially in competitive and high quality sports this type of leadership method cannot be applied. Widely available recreational activities, where competition is not present as a primary form, are based on individual liberties, free choices, etc. The leadership consists of understated directing and coordinating, which the members do not have to accept.

Coaching Philosophy

Coaching philosophy is related to the ethical principles that the coach applies in the coaching process in order to achieve success with an athlete or a team. Some of the principles which the coaches in their philosophy use as guidelines include the ability of coaches to easily make tough decisions, not to succumb to external pressures, not to violate their moral and professional integrity, to successfully meet the demands of coaching, to establishment relations of mutual trust and respect with

the athletes, and to build a successful coaching career.

According to Bačanac et al. (2011), R. Martens, who is the author of a book for the education of American sporting coaches, stresses the importance, content, method of development, and the ethical foundation of a coaching philosophy. In his opinion, a coaching philosophy consists of the main goals you want to achieve and your beliefs and principles that help you achieve your goals. They help you cope with various life situations, because you react to them in accordance with your beliefs and principles, are aware of the consequences of such actions, and are willing to share your beliefs and principles or further solidify, modify, and customize them. The key to developing a coaching philosophy and a life philosophy is your willingness to get to know yourself.

A coaching philosophy is acquired through hard work. It is the result of life experiences and should be in sync with general life principles, or the life philosophy. This means that the coach should act with the athletes in the same way that s/he acts towards people from other areas of life. Child and youth coaches need to adapt their actions to the needs of young people.

Although there are different approaches to the philosophy of coaching, the coach should build his/her own particular coaching philosophy based on positive experiences and apply both it and the philosophy of other coaches. Some people believe that for coaches there is nothing so practical and useful as a well-developed philosophy on life and coaching, because those give them

orientation, affect how they perceive and interpret things, experiences, people and events in their lives, determine their opinion about the role of a coach, goals and objectives they want to achieve, while other experts in the sports define a coaching philosophy through certain rules of conduct in coaching, prioritizing their work with athletes, as well as duties and responsibilities which are linked to their role. A coach with a good philosophy, which also means a proper coaching approach, should prepare the players well for the game, to properly schedule the tasks, to make sure that each player does what is expected of him, and to tend to win every competition.

Parsha believes that philosophy is the basis of all coaching activities and that it is the most important element that decides how the coach treats the athletes (Bačanac et al. 2011, 18). It lies in the basis of their decision-making process, the goals they set for themselves, and the atmosphere they create in practice and in competitions. To develop their coaching philosophy, according to Parsha, coaches should meticulously and honestly answer the following eight questions:

1. What do they want to achieve?
2. What are their priorities?
3. What are their responsibilities?
4. What kind of teaching methods do they use?
5. How do they define success?
6. How will they put together practices and matches?
7. Team rules and consequences?
8. How will they pass on (communicate) their philosophy?

A track and field coach Mark Gathri also believes that the coaching philosophy is

key to how individual coaching careers will be determined and how the team will work in training and competitive situations (Bačanac et al. 2011, 18). According to him, a coaching philosophy makes the coaches take responsibility for their own actions and decisions, and encourages them to meet with the expectations that are placed in front of them as individuals and as a team as a whole. Young coaches create a dynamic philosophy that is constantly evolving until they become confident in the correctness of their actions and decisions concerning their athletes and teams. A coaching philosophy is shaped by experiences that coaches acquire by working with different athletes in different situations, and consists of the following principles:

- Be one's own, be authentic.
- Determine the coaching goals.
- Set rules.
- Build and nurture the relationships with athletes.
- Be organized.
- Include an assistant coach.
- Help athletes cope with stress.

The principles of a coaching philosophy are also the basic professional, pedagogical, and psychological principles in working with athletes of all ages. In order to develop a coaching philosophy it is necessary for the coaches to get to know themselves better (development of self-awareness) and define their own goals in coaching.

In order to assist young athletes to form a sense of self-awareness, to develop their own identity, a positive attitude towards themselves and the world around them, coaches must first develop their own sense

of self-awareness. A realistic self-image is acquired through honest insight, through reflection on one's attitudes, beliefs and principles, and through the observation of others' reactions to us and our behavior. In order to form one's own self-image, there are questions that help define the self-concept. Psychologists believe that there are three selves: the ideal, the public, and the real self.

- The ideal self refers to what a person would like to be, what s/he expects and requests from him/herself.
- Public self is the image that you think others have of you.
- The real self is the sum of your subjective thoughts, feelings, and needs that you think make you authentic. Through communication and interaction with others, the real self is accepted, understood, experienced, and is constantly changing.

For coaches it is extremely important to develop strong self-esteem, that is, to see and experience themselves as competent persons worthy of their own and other people's respect. Many coaches wrongly evaluate themselves on the basis of achieved victories and defeats in competitions.

If coaches conduct an honest assessment of their strengths and weaknesses, morals, values and beliefs, they will be able to adapt their own style to the athletes they train more effectively. Knowing oneself leads to self-confidence, self-esteem, and willingness to continuously improve.

In the training process with young athletes, a coaching philosophy has the following

objectives: to have a winning team, to help young people have fun in the sport and help young athletes to develop physically (learn sports skills, gain fitness, develop healthy living habits), psychologically (become mature and integrated persons, develop self-esteem, self-control, character) and socially (learn to cooperate, lead, successfully communicate, and behave in accordance with social norms).

Although based on the literature consulted, the evaluation of results shows that the majority of coaches have psychological, physical, and social development of young people as their paramount goal, while winning is cited as the least important objective, in practice the situation is not like that.

Conclusion

As they prepare athletes on the basis of knowing their capabilities and knowledge, as well as on the basis of their own capabilities and knowledge, coaches direct the implementation of the sporting activities. By assigning tasks to themselves and to the athletes, they chart the results, and at the same time create a career not only for the athletes, but also for themselves. Many successful coaches are known for their well-developed specific coaching philosophies.

In order to successfully meet the demands of their basic roles, i.e., become a good teacher of sports skills, it is essential that

the coach knows the sport he is coaching. In order to be successful every coach must constantly improve. The success of a coach is reflected in his/hers reactions to failure.

A coaching philosophy develops during the whole life and relates to love and yearning for wisdom and knowledge in the field of a training process. It does not show in what the coach says, but in what the coach does. A coaching philosophy is affected by a global life philosophy of the coach. That's why it needs to be in line with his/her global philosophy of life, which is in line with their nature, knowledge, abilities, and attitudes. Each coach eventually establishes a coaching philosophy and no matter how famous or successful other coaches are, they should not be copied.

A good coach shares his philosophy with his athletes. The main motto of every coaching philosophy should be: "Athletes come first, victory comes second." A coaching philosophy should reflect the values of a humane approach to child and youth sports that emphasizes its development, socialization, and educational values.

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FILOZOFIJA TRENERA

Sažetak

Predmet ovog rada se odnosi na trenersku filozofiju. Cilj rada je da ukaže na značaj posjedovanja određenih sposobnosti i karakteristika značajnih za uspešan rad trenera. Trener je ključna osoba u razvoju sportske karijere svakog sportiste i jedan od najvažnijih faktora njegovog uspeha. Trenerska karijera zahteva mnogo rada i posvećenosti tom poslu, a samim tim i visok nivo uključenosti u proces sportskog razvoja sportiste. Filozofija treniranja je rezultat životnog iskustva trenera i trebalo bi da bude usklađena sa njegovim opštim životnim principima, odnosno, njegovom životnom filozofijom. Svaki trener vremenom uspostavlja svoju filozofiju treniranja i ma koliko drugi treneri bili poznati i uspešni ne treba ih kopirati.

Ključne reči: trener, životni principi, uspeh.

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EFFECTS OF MOTIVATING FACTORS, SELF-ESTEEM AND VALUING OF SCHOOL, IN PHYSICAL EDUCATION ACHIEVEMENT

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Original scientific paper

Abstract

This research examines a multi-dimensional model of student motivation and engagement. Through this model, the levels of development of factors that reflect increased motivation (adaptive dimensions) among students are understood. The research was completed with the survey method, with student self-reporting answers in questionnaires on studied variables in their grades in schools. The researched age group for the study was 100 students of Grades 12 from upper secondary school. The data were analyzed using SPSS 18.0 statistical package for social sciences. The study found that Self-esteem and Valuing of School have positive effects on student Physical Education achievement. The research may serve as a good orientation base for explaining the complex nature of relations of various factors with school achievement.

Key words: Motivation, Engagement, Pupil, School achievement, Self-esteem, School assessment, Valuing of School.

Introduction

Motivation may be conceptualized as energy and push to learn and work effectively, and to achieve required potential at school, while engagement is the behavior that follows from that energy and push. Motivation is referred to as multi-dimensional: it measures impulsive and deliberate action; it has to do with intrinsic and extrinsic factors and observes causes of behavior.

Motivation is one of the key psychological

concepts in education. Many researchers have demonstrated that motivation is linked to various educational outcomes, such as curiosity, persistence, learning and performance (Richard, M. Ryan & Edward, L., 2000). Therefore, the question why some students are motivated to achieve results in education, while why other students are unmotivated is an important one. Thus, it is required that educators and parents determine factors that result with achievement of high motivation in order that they are better equipped to facilitate

academic success of students and to avoid factors that lead to low motivation.

While there is a number of factors that affect school performance, one of the most influential is motivation. Motivation is also referred to as academic engagement, and as “Cognitive, emotional and behavioral indicator in students’ investment in and commitment to education”. (Carolyn M. Trucker, et. Al, 2002) .

The latest theoretical contribution to our understanding of motivation and engagement pertains to motivation drives. Motivation drive refers to student focus on the task at hand (focus on learning), or how he/she completes the task (focus on performance). In this discussion, the focus of students on learning is particularly important. Focus on learning refers to students’ tendency to feel successful and to obtain satisfaction in what they are determined to complete. Students who are focused on learning are motivated to master skills rather than become better than others. They see tasks more as a skill and failure is considered a diagnostic remark that can lead to later improvement (Michael J. Middleton & Louis C. Midgley, 1997) Due to this effort and drive, students focused on learning do not feel threatened by failure because failure reflects more their effort rather than their ability.

Mastery-oriented students are optimistic and have a stronger sense of self-efficacy. (John. A. Martin, 2001) This brings into consideration the issue of self-efficacy. Students who are highly self-efficacious tend to create and test alternative courses of action, when they are not successful at the beginning, they operate better in the

classroom through higher levels of efforts and persistence and deal more efficiently with problematic situations affecting those situations cognitively and emotionally. (Albert Bandura, 1997)

Students with low self-efficacy tend to focus on their weaknesses and perceive situations as more difficult than they actually are. We can say with some confidence that self-efficacy is important for motivation of a student. Students who have a strong sense of self-efficacy are energetic to complete tasks (i.e. they are motivated and engaged). Evidence supports this claim: self-efficacy and self-confidence have been related to outcomes such as self-regulation, efforts, persistence and achievement, (Paul Pintrich et. Al, 1996)

Furthermore, interaction of expectation and valuing of a certain task predict their motivation and engagement, and by valuing them, students are more motivated and engaged to complete the tasks. This interaction has been conceptualized in the appreciation and expectation theory. (Jacquelynne S. Eccles et. Al, 1998)

Another important component of motivation and engagement is valuing of the school and valuing of the task within it. When students see relevance of what they are learning, they are prone to be more engaged in those courses and achieve a higher level of achievement. Valuing of the school is also important for educational flexibility in the sense that it is related to persistence to challenges and this persistence is what differentiates those students who abandon tasks early from those who are able to overcome more difficult academic challenges, John. A. Martin (2001)

However, it is not very easy to understand what motivates students. Many studies have been conducted on this field, which have led to development of several motivation theories.

Methodology

The research was completed with the survey method, with student self-reporting answers in questionnaires on studied variables in their grades in Physical Education Subject at the end of the School year. The researched age group for the study was 100 male students of Grades 12 from upper secondary school from Prishtina

Sampling

A group of 200 students from two upper secondary schools in Prishtina participated in the study. Sample selection utilized convenience method. Students' age group was between 16-18 years old. Overall, there were 118 female and 69 male students in the study

.

Measurement instruments

Motivation and Engagement Scale (MES) for upper secondary school students was used to collection data for the study.

The scale was developed by Australian psychologist Dr. Andrew Martin in 2001.

MES– (upper secondary school), is an instrument that measures student motivation and engagement in upper secondary schools (12-18 year olds). It assesses motivation through three adaptive

cognitive dimensions (reinforcing thoughts), three adaptive behavioral dimensions (reinforcing behavior), three impeding cognitive dimensions, and two maladaptive behavioral dimensions of disengagement and self-handicapping. Each of these factors consists of four items – thus, it is an instrument that included 44 items. For each item, students decide for one of the elements of the scale, starting from “fully agree” to “strongly disagree”.

For this research was used only the part of the data collected with Engagement Scale that deals with the Self-esteem and Valuing of school.

Research hypotheses (sub-hypotheses) include:

H1.1: Adaptive cognitive dimensions self-efficacy and valuing of school are positively related to school achievement. When adaptive cognitive dimensions go up, school achievement goes up.

Adaptive cognitive dimensions

Adaptive cognitive dimensions include self-efficacy, mastery orientation and valuing of school.

Self-efficacy. Adapted in part from Patterns of Adaptive Learning Survey, self-efficacy is students' confidence and certainty in their abilities to understand or do their best at school, to meet challenges they face and perform their best abilities. E.g. "If I work hard, I will succeed in school tasks".

Valuing of school. Adapted in part from Learning Motivation Strategies Questionnaires, valuing of school pertains

to how much students believe that what they learn in school is useful and relevant to them or to the world in general. E.g. "Learning in school is important for me".

Data analysis methods

In order to complete the study, data analysis methods include descriptive statistics (measures of central tendency, distribution and correlations), as well as scientific methods of results condensation and transformation.

SPSS 17.0 statistical software was used for data processing. Descriptive level of analysis of variables included in the study was completed with following methods:

Descriptive statistics parameters include:

- *Arithmetic average, (calculation of central tendency of results)*
- *Standard deviation (how much results are spread out from their means)*
- *Minimum and maximum range (the range between two extreme values)*
- *Skewness, (normality of distribution of results)*
- *Kurtosis (level of homogeneity of the group) and*
- *Correlations and cross-correlations (the level of correlation between variables)*

- *Chi-square.*

Results and discussion

Interpretation of basic statistical parameters

The table of basic statistical parameters shows values of arithmetic average and we may conclude that in the majority of variables, which hypothetically cover adaptive cognitive dimensions, we see that the majority of responses are at the level of 'agree' or 'fully agree'.

Values of skewness which in the majority of cases for these variables are higher than 1, show some departure from normal distribution. Such a phenomenon of distribution of results is seen in the results of other authors, and they are normal when we deal with distribution of results in variables based on the Likert scale, which are of ordinal type. In our case, the majority of variables have a negative non-normal distribution which means that the majority of results are lower than their arithmetic average.

Table 1. Values of basic statistical parameters for variables in the study

	N	Min	Max	Mean	Standard deviation	Skewness	Kurtosis
Self-efficacy	100	1,00	7,00	6,15	0,871	-1,74	6,52
Valuing of school	100	3,00	7,00	6,33	0,69	-1,24	3,11

Valid N	100
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The effect of adaptive cognitive dimensions on student achievement

Chi-square between self-efficacy and final achievement in Physical Education

Based on Table no. 1, which represents the values for self-efficacy levels according to respective groups of achievement, we may conclude as follows:

The analyses show that there is a significant correlation between the self-efficacy level and student final achievement [$\chi^2(100,2)=100.0$, $p=0.000$].

From the all number of students, 13% are low achievers, 59% are average achievers, while 28 % are excellent achievers. Regarding self-esteem, 13% showed low values for self-esteem, and 87% showed high level of self-esteem. 100 % of excellent students showed high levels of self-efficacy, and no one of them have low level of self-esteem. Among students of

average achievement, the values are similar to excellent students. Regarding students who are low achievers 100% of them showed low level of self –esteem, and there are now excellent or average students with low level of Self-esteem.

From this overview of results, we may conclude that the students who have a high level of self-esteem have average or excellent achievement, while students with lower levels of self-efficacy also are low achievers. These correlations of variables indicate that self-esteem plays an important role in student school achievement, showing that increase in self-esteem positively affects student achievement.

Table. 10. Chi-square of self-efficacy with final achievement in Physical Education

Crosstabs					
		Achievement in Physical Education			Total
		Low	Average	Excellent	
Low Self-esteem	Count	13	0	0	13
	Expected Count	1.7	7.7	3.6	13.0
	% within Self-esteem	100.0%	.0%	.0%	100.0%
	% within Achievement	100.0%	.0%	.0%	13.0%
	% of Total	13.0%	.0%	.0%	13.0%
High Self-esteem	Count	0	59	28	87
	Expected Count	11.3	51.3	24.4	87.0
	% within Self-esteem	.0%	67.8%	32.2%	100.0%
	% within Achievement	.0%	100.0%	100.0%	87.0%
	% of Total	.0%	59.0%	28.0%	87.0%
	Count	13	59	28	100
	Expected Count	13.0	59.0	28.0	100.0
	% within Self-esteem	13.0%	59.0%	28.0%	100.0%
	% within Achievement	100.0%	100.0%	100.0%	100.0%
	% of Total	13.0%	59.0%	28.0%	100.0%

Chi-Square Tests			
	Value	df	Sig. (2-
Pearson Chi-Square	100.000 ^a	2	.000
Likelihood Ratio	77.277	2	.000
Linear-by-Linear	50.487	1	.000
N of Valid Cases	100		

a. 2 cells (33.3%) have expected count less than 5.

Symmetric Measures			
		Value	Sig.
Nominal by Phi		1.000	.000
Nominal Cramer's V		1.000	.000
N of Valid Cases		100	

Chi-square between valuing of school and final achievement in Physical Education

In this second case, we find that there is a significant correlation between valuing of the school and student final achievement. the analyses show that there is a statistically significant correlation between the valuing of the schools and student final achievement [ch(100,2)=100.00, p=0.000].

In the case of valuing of the school, we have presented an identical situation of the distribution of scores of respective student groups. 13% have shown that they valuing school low, and 87% showed high valuing. Also, 100% of excellent students have shown high level of valuing of school, and no one of showed low level of valuing. Students with average achievement showed similar distribution of results as the excellent students, regarding valuing of

school. Regarding students who are low achievers, 100% of them showed low level of valuing, while there are no students with average or excellent achievement with low level of valuing of school.

From this overview of results, we may conclude that all students who shown high level of valuing, and who express attitudes that what they learn in school is relevant and useful for their lives, have achieved average or excellent achievement, while students who showed low valuing are also low achievers. In this regard, we may conclude that valuing of school plays an important role on final school achievement, indicating that an increase in valuing positively affects student achievement.

Table. 11. Chi-square between valuing of school and final achievement

Crosstabs					
					Total
		Low	Average	Excellent	
Low Evaluation	Count	13	0	0	13
	Expected Count	1.7	7.7	3.6	13.0
	% within Evaluation	100.0%	.0%	.0%	100.0%
	% within Achievement	100.0%	.0%	.0%	13.0%
	% of Total	13.0%	.0%	.0%	13.0%
High Evaluation	Count	0	59	28	87
	Expected Count	11.3	51.3	24.4	87.0
	% within Evaluation	.0%	67.8%	32.2%	100.0%
	% within Achievement	.0%	100.0%	100.0%	87.0%
	% of Total	.0%	59.0%	28.0%	87.0%
	Count	13	59	28	100
	Expected Count	13.0	59.0	28.0	100.0
	% within Evaluation	13.0%	59.0%	28.0%	100.0%
	% within Achievement	100.0%	100.0%	100.0%	100.0%
	% of Total	13.0%	59.0%	28.0%	100.0%

Chi-Square Tests			
	Value	df	Sig. (2-
Pearson Chi-Square	100.000 ^a	2	.000
Likelihood Ratio	77.277	2	.000
Linear-by-Linear	50.487	1	.000
N of Valid Cases	100		

Symmetric Measures			
		Value	Sig.
Nominal by Nominal	Phi	1.000	.000
Nominal by Nominal	Cramer's V	1.000	.000
N of Valid Cases		100	

Conclusion and recommendations

Our research findings demonstrate the relevance of motivation dimension on student achievement. Despite the fact that learning process itself is a complex phenomenon which is subject to the influence of numerous various factors, the study showed that there are various motivation dimensions that affect final student achievement.

The model utilized in the study to determine the level of influence on student achievement only involves a limited number of variables which affect final student achievement. A more comprehensive study, which would include other factors in multi-factor models, would certainly result with more accuracy the effect size of motivation dimensions on student achievement.

The obtained data may serve all those involved in the learning process to understand the relevance of motivation dimensions in order that their didactic-

professional work is able to direct students' performance towards higher achievement.

Based on our research findings and conclusions drawn from the research methods utilized in the study, we may provide following recommendations:

1. Since self-esteem and valuing of school have positive effects on student achievement, they must be treated more seriously and encourage their development at schools.
2. In order to have a higher reliability in the obtained results, we recommend including a significantly larger sample than in the present study.
3. A longitudinal study that would examine motivations dimensions and measure school achievement in order to investigate cause and effect relationships.

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EFEKTI FAKTORA MOTIVACIJE, SAMOPOUZDANJE I VREDNOVANJE ŠKOLE U DOSTIGNUĆU FIZIČKOG VASPITANJA

Sažetak

Ovo istraživanje ispituje multidimenzionalni model motivacije učenika i angažovanja. Kroz ovaj model nivoi razvojnih faktora koji odražavaju povećanu motivaciju (adaptivne dimenzije) među učenicima su shvaćeni. Istraživanje je izvršeno metodom ankete, u kojoj su studenti samoizveštavali o odgovorima na upitnicima o ispitivanim varijablama u svojim razredima u školama. Istražena starosna grupa za studiju bila je 100 učenika iz 4. razreda

srednje škole. Podaci su analizirani korišćenjem SPSS-a 18.0 statističkog paketa za društvene nauke. Studija je pokazala da Samopouzdanje i Vrednovanje škole imaju pozitivne efekte na postignuća fizičkog vaspitanje učenika. Istraživanje može poslužiti kao dobar orijentacioni osnov za objašnjavanje složene prirode odnosa različitih faktora i školskih postignuća.

Ključne reči: *Motivacija, angažovanje, učenik, postignuće u školi, procena škole, samopouzdanje, vrednovanje škole.*

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CORRELATION CONNECTIONS ANTHROPOMETRIC AND BASIC MOTOR DIMENSIONS WITH RATING POSTURE STUDENTS SIXTH AND SEVENTH GRADES

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Abstract

In order to determine the correlation connection anthropometric characteristics and basic motor skills with scores posture students, applied linear correlation analysis. Based on the presented results, it could be concluded that the increased longitudinal dimension of the support system significantly affects the aberration upper body posture, and increased body mass and an increased amount of adipose tissue adversely affect the posture of the lower extremities.

Keywords: *anthropometric characteristics, motor skills, postural status.*

Introduction

The term posture refers to the habit of unaffected right perspective, walking, sitting and while performing other activities. Proper posture is one of the preconditions for the creation of positive assumptions proper formation of bile devices, growth and development, and the smooth functioning of the internal organs (Hadžikadunić, 2005). There are a very large number of causes that can lead to disturbances in posture. They reflect the most muscular, ligament apparatus and osteo-articular system. Medical check up, year after year, show at pre-school and youth ages increasingly improper posture

as careless, uncaring resulting in a growing number of distortions of the spine. Research development characteristic posture gave no consistent findings, which are likely to be explained by differences in the size and structure of the sample, applied to diagnostics, and design research as a whole. Common to all studies is to show the existence of possible age-specific dynamics in forming an upright position, whereby changes are mainly in the direction of reduced mobility of the spine and pronounced deviations from the correct posture. Information relating to the representation of postural disorders and deformities of the spine largely depend on

the accepted definition of the condition, and the distribution of respondents by sex and age. Differences in diagnostic criteria make it difficult to compare the results obtained or misleading, for example, when poor posture equated with deformities, (Bala, 2007). The study of postural status students were involved in a large number of researchers (Bogdanovic, 2006; Milenkovic and Stojanovic, 2006; Turkovic et al, 2007; Bogdanovic and Hadzic, 2008; Trajkovic and Nikolic, 2008; Obradovic and Milosevic, 2008; Saracevic, 2008; Mehmedović, 2012).

Research aim

The aim of this research is determining exactly which of the variables used to estimate the anthropometric characteristics and to estimate the basic-motor abilities have a statistically significant association with scores of keeping certain segments of the student body sixth and seventh grades.

Research methodology

The sample The population from which the sample is defined for this research were pupils of the sixth and seventh-graders' Maglaj "in Maglaj. Research included 42 subjects.

The sample of variables

The sample of variables for assessing morphological characteristics.

1. Height bodies (VISTIJ)
2. Body mass (MASTIJ)
3. Triceps skinfold (NABRIC)
4. Skinfold-back (NABLEĐ)
5. Biceps skinfold (NABBIC)
6. Abdominal skinfold (NABTRB)
7. Skinfold shin (NABPOT)

The sample of variables for assessing basic-motor abilities

1. Equilibrium "flamingo" (FLAMIN)
2. Endurance in the knuckle (MASAVIS)
3. Lying - seater (MRCLDT)
4. Running 10x5 m (back and forth) (ŠATL10X5)
5. Hand tapping (MBFTAP)
6. Hand Dynamometer (MBFDIN)
7. Flexibility-mobility in the hip joint (MFLPRK)
8. Long jump from place to place (MFESDM)
9. Running at 20 m back and forth (ŠATL20) with progressive speeding

The sample of variables for evaluating postural status

1. Keeping your head (ODGLA)
2. Keeping your shoulders (ODRAM)
3. Scapulae (ODLOP)
4. Holding the breast (ODGRU)
5. Keeping the spine (ODKIČ)
6. Keeping the abdomen (ODTRB)
7. Holding legs (ODNOG)
8. Keeping your feet (ODSTO)

Methods of data processing

To determine parallelism and intensity correlation treated anthropological dimension is applied linear correlation analysis.

Results and discussion

Correlations within the treated area can range

in value from -1 to + first whether the value of the correlation relationship is positive or negative in explaining the causal relationship should be taken into account that the results of the tests are determined quantified time dimension, metric dimensions or number of repetitions. In this study analyzed be linear correlation connection whose values are at the

level of significance of $P < .01$ and $P < .05$.

Linearcorrelation analysisof anthropometric dimensions withscoresof posture

Correlation coefficientsof anthropometricdimensions withscoresof posture

VARIJABLE	ODGLA	ODRA M	ODLO P	ODGR U	ODKI Č	ODTR B	ODNO G	ODST O
VISTIJ	.379*	.428**	.365*	.320*	.319*	.126	.477*	.019
MASTIJ	-.268	-.115	.157	-.526**	.080	.481**	.398*	.361*
NABTRIC	-.271	-.220	.059	-.144	-.085	.575**	.171	.091
NABBIC	-.079	-.262	.226	-.195	.037	.404**	.106	.257
NABLED	-.158	-.220	.287	-.361*	.153	.460**	.343*	-.027
NABTRB	-.187	-.147	.015	-.497**	-.118	.544**	.332*	.337*
NABPOT	-.212	-.210	.088	-.515**	-.203	.130	.385*	.368*

**Correlationissignificantat the00:01level*Correlationissignificantat the0.05 level

Examination of the table it can be concluded that the assessment of posture largely conditioned by anthropometric dimensions, as confirmed by some previous studies (Saračević -2008 is a sample of girls and boys aged 7-11 years came to the conclusion that the anthropometric characteristics and assessment of posture have a statistically significant canonical correlation coefficients). Inspection you may notice that a statistically significant relationship (at the level of statistical science $P < .01$) a variable (VISTIJ) which are estimated longitudinal dimension of restraint systems with ratings of posture head and legs. At the level of significance of $P < .05$, body height is associated with the grade of keeping the shoulders, shoulders, chest and spine.

This correlation relationship longitudinal dimensionality support systems with disturbed postural status can be explained by the fact that a significant number of boys of this age is a period of turbulent change in the body as a result of puberty. The amount of muscle mass relative to body weight lags, and children are not sufficiently strong and durable. Skeletal system is still in the process of ossification, and the joints are not sufficiently linked as one of the factors disrupting keeping those parts of the body where they support system of long tubular bones.

Correlation with a negative sign was observed when evaluating holding breast with variables for estimating body mass (MASTIJ = - .52), subcutaneous fat back

(NABLED = - .36), stomach (NABTRB = - .49) and lower leg (NABPOT = - .51). Logical explanation for the negative correlation relationship with scores above variables holding breasts lies in the fact that a portion of the treated population "late" with before puberty and pubertal changes turbulent growth and development, and with them an increased amount of subcutaneous adipose tissue at the site of the chest, hiding possibly distorted shape of the chest Recycle.

The positive correlation relationship at the level of significance of $P < .01$ was recorded between the stomach and score keeping almost all variables to estimate ballast adipose tissue in all marked sites of the body.

The logical conclusion is that the increase of body mass, which is the product of ballast weight, increase the parameters that indicate the violation of proper posture belly.

The most important correlative link between these two system was found when evaluating posture feet, where it is evident that there is a positive correlation between the level of $P < .05$ with most

anthropometric variables for assessing subcutaneous fat. Increased body weight and ballast weight belly (NABTRB = .33) and lower leg (NABPOT = .36) contributed aberration arch of the foot, where the arch of the foot marks with these variables has a correlation to the level of significance of $P < .05$. By the same research results came and Pfeiffer (2006) who found that in 13% of children's foot was lowered excess weight. Based on the presented results, it could be concluded that the increased longitudinal dimension support system significantly affects the aberration upper body posture, and increased body mass and an increased amount of adipose tissue adversely affect the posture of the lower extremities. The results obtained in this study may serve as significant prognostic factors that carry important information about the impact of some indicators anthropometric dimension posture juvenileboys age, and they also can serve as a useful basic guidelines in the application of kinetic methods of eliminating the aforementioned aberration

Linear correlation analysis of motor skills with assessments of posture

Correlation coefficientsof motor skillswithassessmentsof posture

VARIJABLE	ODGLA	ODRAM	ODLOP	ODGRU	ODKIČ	ODTRB	ODNOG	ODSTO
FLAMIN	.143	.176	-.048	-.114	.034	.047	.457**	.326*
MBFTAP	.189	.350*	.401**	.137	-.267	-.192	-.144	.069
MFLPRK	-.217	-.082	.163	.118	-.437**	-.433**	.091	-.095
MFESDM	.138	-.083	-.140	.258	.004	-.345*	-.336*	-.483**
MBFDIN	-.269	.041	.237	.113	.137	-.092	.110	-.193
MRCLDT	-.217	.066	-.126	-.151	-.209	-.308*	-.035	.145
MSAVIS	-.426**	-.363*	-.410**	-.512**	-.075	-.268	.186	.014
ŠATL 10X5	-.299	-.145	.105	-.076	.427**	-.073	.483**	.318*
ŠATL 20	-.101	-.110	-.038	-.556**	.030	-.263	.189	-.375*

The table presents the correlation coefficients of motor skills with scores posture boys sixth and seventh grades, where the correlative connection between these two systems is analyzed at the level of significance of $P < .01$ and $P < .05$. Already in the previous part of the paper noted that the boys are in a period of turbulent change in the body as a result of puberty. The amount of muscle mass relative to body weight lags, and children are not sufficiently strong and durable. Skeletal system is still in the process of ossification, and the joints are not sufficiently linked as one of the factors compromising posture. This is the period when often notice and motor nerves, which is expressed in the various movements that child even sometimes not even aware of. This hinders their long existence, sitting, lying down, while their hands are almost always busy with something. Due to the rapid growth of long tubular bones, muscle fibers fail to follow them, and because of its elasticity stretch, which increases their tone, with the result that coordination of movement significantly weaker than in the previous period. Therefore, the period of puberty, called the period of the fall of man motor. The linear correlation relationship at the level of $p < .01$, with a negative sign, there is a score between head posture and static forces of the shoulder belt (MSAVIS = - .42). Respondents who have expressed a bad head posture exercised weaker results in the motor test. The reason for this is that it is probably a sufficiently empowered joint group of muscles that participate in maintaining normal posture of the head and shoulders (m sternocleidomastoides, m trapezius, m splenius cervicis, rectus capitis major ...). Guest holding his shoulder, correlation relationship with the

positive sign on the level of significance of $P < .05$, with the motor test for assessing the frequency of hand (MBFTAP = .35). Given that the efficiency of the motor performance test is inversely proportional to the time of performance, means that this positive correlation must be interpreted as unfavorable and that in fact, established aberration shoulder belt limiting impact on the rate of frequency hand. A negative correlation relationship was observed with motor tests for the assessment of static muscle strength of the shoulder belt (MSAVIS = - .42). It is obvious that the distorted posture shoulder adversely affect the level of expression of static force and synergic control tone muscle groups that are in the area of the shoulder belt. Accordingly, to conclude that the failure of the shoulder belt, somewhat more difficult technically correct performance of the test motor. A positive linear correlation relationship is indicated between the customer holding the blades with hand speed frequency (MBFTAP = .40), and a negative correlation relationship marks keeping blades with motor tests for the assessment of the static forces of the shoulder belt (MSAVIS = -. 41). Negative mutual causality score keeping blades with the motor manifestations can be explained in this way it is violated synergistic relationship of muscles and muscle groups of the upper extremities, which together constitute a closed kinetic chain. When the body is in a higher withstand the effects of gravity tends to lower corners of the blades away from the spinal column.

Suspension blades especially the lower corners of the spinal column will be prevented isometric contraction the back of the shoulder belt, which directly bind blades for backbone (m. latissimus dorsi,

trapezius m, m and m rhomboideus pectoralis major). Postural insufficiency fortified with keeping the chest has a negative linear correlation, the level of significance of $P < .01$, with aerobic muscular endurance ($\check{S}ATL20 = - .55$) and static force of muscles of the shoulder belt (MSAVIS = $- .51$). It is evident that disrupted shape breasts reduced respiratory capacity: lung ventilation, alveolar diffusion and perfusion. Reducing lung volumes and capacities, which are the result of postural thoracic insufficiency reduced manifestation of aerobic capacity. The analysis tables can be seen that score keeping the spine has a statistically significant correlation between the level of $P < .01$ with physical agility test for assessment ($\check{S}ATL10x5 = .42$). It should be emphasized that this correlation connection has a positive sign, which means that poor posture spine significantly reduces the efficiency of the motor performance test for evaluating agility with regard to this motor test time is determined quantitatively, where the higher the score, actually represents a poorer efficiency of motor skills. The negative correlation relationship marks the spine have a test for the evaluation of flexibility (MFLPRK = $- .43$). It is assumed that the rapid growth of longitudinal dimension support system is not equivalent to monitor the spinal muscles, and the muscles of hypertension occurred in this locality which ultimately resulted, in violation of the spine, and the limited flexibility of the hip joint. Limited flexibility is significantly conditioned and ratings holding abdomen which is recorded at the level of $p < .01$ (MFLPRK = $- .43$). In a further interpretation of the results should be emphasized that closely

correlated (at $P < .05$) marks holding belly with motor variables for assessing explosive strength (MFESDM = $- .34$) and repetitive strength of the abdominal muscles (MRCLDT = $- .30$). Assumed to have bad grades holding abdomen due to increased amounts of adipose ballast weight in this area and that it is an aggravating factor in the event explosive and repetitive strength. Examination of the table conclude that marks keeping feet largest coefficient of linear correlation ($P > .01$) with the variables to estimate the equilibrium (Flamini = $.45$.) And agility (shuttle 10x5 = $.48$). Since in both motor testquantifiedlower score represents a more efficient execution of the event, we can conclude that the increase of the frequency of aberrations leg reduces efficiency manifestation of balance and agility. The table has been shown to contribute to poor posture legs and reducing the efficiency of the event explosive strength (MFESDM = $- .34$). Logical explanation disrupting the balance of efficiency, agility and explosive power in that the occurrence of juvenile acceleration contributed motor nervousness, hearth and uncontrolled movements synergistic regulation of muscle tone, which adversely affected the sophisticated structuring of movement. The negative correlation relationship score keeping your feet on the level of $p < .01$ with a motor test for the assessment of explosive strength (MFESDM = $- .48$)) and the level of significance of $P < .05$ for a variable assessment ofmuscle aerobic endurance ($\check{S}ATL20 = - .37$). Positive linear correlation coefficients foot marks are the motor tests for assessing balance (Flamini = $.32$) and agility ($\check{S}ATL10x5 = .31$). Concluding this part of the discussion was obtained information that marks the

legs and feet are important but unfavorable linear correlation with most manifest motor tests, and thereby substantially impair the latent space functional regulatory mechanisms. Causal relationship of this phenomenon must be sought in the fact that the sudden increment of long tubular bones, is support structures increased tensions andis notequivalent toincreasing thestrength ofmusclespindle, whichultimatelyresulted in asignificant deterioration ofpostureof the lowerparts of the body.

Conclusion

Analyzing the results of this study it can be concluded that, in this population, there is a very large number of causes that can lead to disturbances in posture. They reflect the most muscular, ligament apparatus and osteo-articular system. Also, analysis of the results of the linear correlation of basic motor abilities with scores of keeping certain segments of the body, we can conclude that the relationship is reversed, is that marred posture negatively affects the manifestation of a wide range of motor skills, on the other hand, the lower level of expression of motor skills can cause physical insufficiency. Analyzing rating postural status and frequency of established aberration, we can conclude that the highest percentage observed in head posture (38.1%), spine (33.3%) and foot (33.3%). Linear correlation relationship longitudinal dimensionality support systems with disturbed postural status can be explained by the fact that a

significant number of boys of this age is a period of turbulent change in the body as a result of puberty.

The amount of muscle mass relative to body weight lags, and children are not sufficiently strong and durable. Skeletal system is still in the process of ossification, and the joints are not sufficiently linked as one of the factors disrupting keeping those parts of the body where they support system of long tubular bones.

It can be concluded that this age periods boy has the characteristics of the period of risk of creating adverse conditions for health in the future, it would be responsible of health and educational institutions should implement specialized examinations which would have marked the risk factors responsible for the occurrence of physical failure.

The teacher's role in this process is essential, that on the basis of initiation postural status should, in teaching physical education and health, in addition to the basic program include the appropriate programs of prevention and corrective treatment for children with pronounced physical abnormalities.

In recent times, especially in recent years, much has been done to establish an objective method for collecting data on postural status of children and youth, and to diagnose any abnormalities not be the subject of research only with the medical aspects, but it is a coordinated activity of the family, educational l institutions and medical institutions.

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DIMENZIJA SA OCJENAMA DRŽANJA TIJELA UČENIKA VI I VII RAZREDA

Sažetak

U cilju utvrđivanja korelacione povezanosti antropometrijskih karakteristika i bazično motoričkih sposobnosti sa ocjenama držanja tijela učenika, primjenjena je linearna

koraciona analiza. Na osnovu iznesenih pokazatelja može se zaključiti da povećana longitudinalna dimenzionalnost oslonskog sistema značajno utiče na aberaciju posture gornjih dijelova tijela, a povećana masa tijela i povećana količina adipoznog tkiva nepovoljno utiču na posturu donjih ekstremiteta.

Ključne riječi: antropometrijske karakteristike, motoričke sposobnosti, posturalni status.

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THE COHESION BETWEEN THE ASSESSMENT OF OVERALL SUCCESS AND PHYSICAL EDUCATION IN SEVENTH GRADE OF PRIMARY SCHOOL

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Abstract

The study was conducted on a sample of 349 students of 7th grades, which included both genders from five elementary schools in the municipality of Travnik. In the study 15 variables have been applied, that provide insight into the interrelationship between assessment in physical and health education and other subjects, and it is relevant for this type of study. The main objective of the study was to determine the relation between overall school success assessment and success assessment in the physical and health education in the 7th grade of primary school. In order to determine the relation between the performance of students in overall score and grade in the physical and health education module, the regression analysis on the manifest and latent level has been applied. The results of regression analyzes indicate that on the manifest level, there is a significant statistical relationship between school performance assessment and assessment of Physical and health education modules. The results have also shown that there are common components that are evaluated across all 14 modules in the 7th grade of primary school on the basis of which it can execute the prediction results of Physical and Health Education.

Key words: *students, regression connectivity, physical education, overall success.*

Introduction

Implementation of quality educational content with regards to the physical and health education, creates a realistic assumptions for the development of healthy and capable youth, which will enable them to meet the demands of accelerating modern life with their physical and intellectual abilities.

The importance of physical and health education for student population

development does not require special attention. However, it is necessary to consider the place of physical and health education in relation to other school modules, as well as the issues which arise with regards to the assessment, i.e. the evaluation system of the results of physical education teaching and its relation with other school modules. The goal of this research is to transparently and objectively determine the condition, i.e. relation between evaluation of physical and health education, general school success and

success in other school modules. in the 7th grade students of elementary school, because it is based on the grades of students, i.e. the indirect measurement. The indispensable part of the educational process at all levels of education is the assessment and evaluation of knowledge. Dokimology is the skill of systematic and fair evaluation of students success based on a specially constructed criteria with which the teachers of physical and health education should be thoroughly familiar. The problem of evaluation in school practice is as old as education itself.

"The knowledge examination is eminent social function, almost as old as the society itself, therefore it is so much older than the teaching". (Troj, 1951). The knowledge evaluation is a procedure in which the answer is elicited from the examinee, which represents a reaction of knowledge". The knowledge evaluation includes the assessment of students' knowledge in relation to some predetermined criteria or in relation to other students. Therefore, measured knowledge expresses an appropriate assessment that expresses the quantity and value of the measured knowledge" (Vizek Vidovic, Rijavec, Vlahovic-Štetić and Miljkovic, 2003). Knowledge is a collection of organized information held by an individual, group or culture (Radojevic, D., Lesic, V., 1966). The most obvious function of evaluation is to provide feedback to students and teachers and the student's actual knowledge and progress. It serves as an indicator of the cost-effectiveness of student effort, the success of its strategy of learning, acquisition of essential elements of the course content. It is often overlooked, but very important function of assessment and evaluation is to provide feedback to the

teacher about the effectiveness of his lessons.

According to Hadžikadunić (2004), the assessment is the process which monitors and determines, in a manner which is set out by the regulations, not only the degree of goal fulfillment of program tasks, but the effects of the program and it must be based on a diverse and permanent monitoring and assessment of the students, based on the objective criteria and respecting their individual characteristics. The physical and health education evaluation must be implemented in a manner that the grade is mirroring the actual condition of students, a standard of its value and a reflection of his personality (Hadžikadunić, 2004). The evaluation is the final part of the probation, i.e. the grade is expressing the final effect of the assessment. In order for the grade to be a fair reflection of the student kinesiology, it must be based on a planned, systematic, versatile and objective checking.

Through the researches with regards to assessment criteria of physical and health education, a large number of authors (Jaworski, 1968; Gniekowski, 1967; Zukowski, 1967; Sadoeska, 1967; Limps et al., 1970; Findak, 1992, 1999, 2001 ...) came to the conclusion that due to difficulties in defining the criteria for assessing students, physical and health education on the importance scale within the educational system, is at the bottom, which is unacceptable. The first step towards solving this problem is diagnosing the state of physical and health education in the overall educational system.

Methods

The sample

For the purposes of this study, the analysis of 349 grades of 7th grade students from 5 elementary school in the municipality of Travnik, have been made. 349 students have been analyzed, 165 were women and 185 were men. All examinees fulfilled all the requirements necessary for the purposes of this research. All the subjects were clinically healthy, without significant morphological abnormalities and damage to the musculoskeletal system.

The sample of variables

For the purposes of this study, 15 variables (grades) were applied. (Bosnian- BOSL, English language-ENGL, Mathematics - MATE, Music Culture - MUSIC, Art - ART, Biology - BIOL, History - HIST, Geography - GEOG, Physics - PHYSICS, Chemistry - CHEM Technical education - TECH Information Technology - INFO, Religion - RELIG, Physical and health education - PAHE, an overall success -

Overall) which are conditioned with the problem and the aim of the research.

Statistical analysis of data

The relationship between the established criteria (the total of Physical and health education grades) in relation to the predictor (the grades from other school modules-overall success) which are determined by using the standard regression analysis.

Results and diskussion

The regression analysis of variable physical and health education (PAHE) in the manifest scope

In Table 1 are grades from 13 modules which represent a set of predictors, whilst it is necessary to determine whether, on the basis of these assessments in total, the significant estimation of the Physical and Health Education grade can be determined.

Table 1 Regression analysis variables PE the manifest space

	R	Q(R)	P-R	B	PD	S-B	Q(B)	F(B)
BOSL	0.46	0.00	-0.12	-0.22	-10.14	0.10	0.02	0.71
ENGL	0.46	0.00	0.10	0.16	7.26	0.08	0.05	0.72
MATH	0.45	0.00	0.01	0.02	0.98	0.08	0.79	0.70
MUSIC	0.46	0.00	0.04	0.04	1.91	0.06	0.50	0.71
ART	0.44	0.00	0.08	0.08	3.59	0.06	0.16	0.68
BIOL	0.53	0.00	0.10	0.17	9.02	0.09	0.05	0.81
HIST	0.51	0.00	-0.04	-0.07	-3.45	0.10	0.52	0.78
GEOG	0.49	0.00	0.00	0.00	0.11	0.09	0.98	0.75
PHYSIC	0.40	0.00	0.00	-0.01	-0.24	0.07	0.93	0.62
CHEM	0.45	0.00	-0.02	-0.04	-1.61	0.09	0.70	0.70
TECH	0.52	0.00	0.03	0.04	2.19	0.08	0.60	0.80
INFO	0.58	0.00	0.22	0.31	17.91	0.07	0.00	0.90
RELIG	0.57	0.00	0.19	0.25	14.48	0.07	0.00	0.88
DLT	S-DLT	RO	F	DF1	DF2	P		
0.42	0.76	0.65	18.67	13	335	0.0000		

From Table 1, it can be seen that between a set of grades and criteria, there is a

positive and statistically significant relationship, i.e. statistical significance

criterion is positive. As shown in Table 1, four were positive predictors (INFO 17.91%, RELIGION 14.48%, BIOI 9.2%, ENGL26.7%). The common substantive issue for these cases (positive predictor) is that all the study material looks into is significantly in the future. The positive variables such as INFO and ENGL, are most likely caused by the mass use of the Internet by students. The Internet use, content search or service quality, depend greatly upon the knowledge of basic computer tools and the English language.

The variables which refer to Biology and Religion, base their positive prediction on the general pursuit of health and a better quality of life. These items are basically concerned with the study of man from its origins, evolution and human quality of life issues, in order to improve the future of human life.

The negative prediction, which is noticeable in several cases (BOSL -10.14, Table 2. The variable analysis

	SUM OF SQUARES	DF	MEAN SQUARES	F	P
REGRESSION	85.33	13	6.56	18.67	0.0000
RESIDUAL	117.80	335	0.35		
TOTAL	203.13				

Table 2 is a detailed view of testing the significance of the overall regression (from Table 1). As can be seen from Table 1 and 2, the results are positive, then there are common components that are evaluated across all 14 modules. in the 7th grade, on the basis of which can be executed and

-3.45 HIST, PHYSICAL - 12:24, CHEM-1.61), meaning that these predictors not only does not contribute to the explanation, rather than appearing as a disturbing factor to explain the criteria. It is very interesting that Bosnian language has a negative prediction, and a positive correlation with the criterion (PE). Positive correlation between Bosnian language and PE stems from the overall educational activities of the school. The negative prediction is the result of various topics within the subject of study. Although the language is alive and changing, it is noticeable that in the case of Bosnian language, that it deals with the past, the means which are used from the past in future, therefore there is no study of the language future as such. Unlike language, object of the study (PE) is present, and future of man. Everything is done at present, it is to enhance the future.

prediction results from physical and health education.

Regression variables PE in latent space

Table 3 Factors OBQ1 and OBQ2 represent predictors, which were obtained from 13 variables. As can be seen from Table 3 and 4 was statistically significant

relationship between these predictors and criteria.

Table 3 Regression analysis of variables of PE in latent space

	R	Q(R)	P-R	B	PD	S-B	Q(B)	F(B)
OBQ1	0.52	0.00	0.06	0.09	4.53	0.07	0.23	0.86
OBQ2	0.61	0.00	0.37	0.54	32.80	0.07	0.00	1.00
	DLT	S-DLT	RO	F	DF1	DF2 P	P	
	0.37	0.79	0.61	103.08	2	346	0.0000	

Tabel4. The variable analysis

	SUM OF SQUARES	DF	MEAN SQUARES	F	P
REGRESSION	75.84	2	37.92	103.08	0.0000
RESIDUAL	127.29	346	0.37		
TOTAL	203.13				

With the help of these two factors (OBQ1 and Obq2) the 37% of the criteria has been explained. The correlation between the predictor system (OBQ1 and OBQ2) and the criteria (PAHE) is a solid height and it is 0.61.

The Physical and health education is significantly associated with OBQ1, a correlation is 12:52. Correlation with OBQ2 is also significant and amounts to 0.61. Although both factors significantly associated with the criterion, only OBQ2 contributes significantly to the explanation of the criteria (32.80).

Conclusion

The case study was conducted on primary school students and the evaluation of their work in the module of physical and health education, and comparisons with other cases in the most vulnerable population, male and female students in the 7th grade. Given that in this period, children are entering into a new era of development - puberty, it is of great importance to observe any changes that occur in children in this age period and their ability of overcoming learning tasks, which directly or indirectly affect the success of school and, ultimately, the results of this case study.

The main objective of this study was to determine the current relation (correlation) between grades of physical and health education and assessment of other modules in the 7th grade. The structure and internal relations were analyzed in a multivariate level factor analysis with rotation in orthoblique position and relationships established criteria in relation to the predictor standard regression analysis. Due to the very objective of the research to determine the relations between academic achievement and success in physical and health education students in the 7th grade, the significance of the results has its theoretical and practical application.

The theoretical applicability of the results is reflected, above all, the data is analyzed by statistical operators and they have produced some results that cannot be predicted in advance, which is particularly applicable to the multivariate analysis of variance boys and girls, as well as regression analysis variables of PAHE in the manifest space, and statistics

orthoblique factors 1 and 2. Moreover, this work can serve as a stimulus for further research on the relationship of physical and health education within the school system and the quality of monitoring and evaluating the work of students in physical and health education.

From the practical point of view, this study may contribute to a better understanding of the importance of a comprehensive and realistic assessment for students and for teachers and for the module of Physical and health education. Although a large number of authors investigated the problem of evaluation, for the most part they dealt only with individual subjects within the school system, but not the relationships between individual subjects and groups of subjects, which is of great importance because of the unique teaching process that aims at a comprehensive physical and mental development of students.

This research will enable teachers of physical and health education based on the obtained results, to approach the problem of evaluating students with the necessary dose of seriousness and responsibility to the students (through individualization), the educational process, the school and the teaching, in order for the grade in PAHE to be as objective and for the module to get its deserved respect and significance.

The results of this research will contribute the most population from which this sample was drawn, and the general population that exists in the same geographical and cultural area.

This and similar studies have much to contribute to understanding to the current state of the education system in Bosnia and

Herzegovina, the possibilities of reforming its (currently the educational reform is present worldwide) and all for the purposes of put focus on the student as an individual. The development of individual skills and the creativity incitement in students with an adequate amount of knowledge should be in primary school curricula in order to create generations of creative artists and intellectuals, as opposed to today's fabricated students, despite the enormous amount of information which they receive, they leave the educational system without knowledge needed for real life.

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POVEZANOST OCJENA OPĆEG USPJEHA I OCJENA IZ PREDMETA TJELESNI ODGOJ U SEDMOM RAZREDU OSNOVNE ŠKOLE

Jasmin Hrnjić¹, Osmo Bajrić, Senad Bajrić,

Sažetak

Istraživanje je provedeno na uzorku od 349 učenika sedmih razreda, oba pola iz 5 osnovnih škola u Općini Travnik. U istraživanju je primijenjeno 15 varijabli koje omogućuju uvid u međusobne odnose ocjena tjelesnog i zdravstvenog odgoja i ostalih predmeta, i relevantan je za ovakav tip istraživanja. Osnovni cilj istraživanja bio je utvrđivanje povezanosti ocjena općeg uspjeha i uspjeha iz predmeta Tjelesni i zdravstveni odgoj učenika sedmih razreda osnovne škole. Za utvrđivanje povezanosti ocjena općeg uspjeha učenika i ocjena iz predmeta Tjelesni i zdravstveni odgoj primijenjena je regresiona analiza na manifestnom i latentnom nivou. Rezultati regresione analize pokazuju da na manifestnom nivou postoji značajna statistička povezanost ocjena školskog uspjeha i ocjena iz predmeta tjelesni i zdravstveni odgoj. Rezultati također pokazuju da postoje zajedničke komponente koje se ocjenjuju unutar svih 14 predmeta u sedmom razredu osnovne škole na osnovu koje se može izvršiti i predikcija rezultata iz predmeta tjelesni i zdravstveni odgoj.

Ključne riječi: *učenici, regresiona povezanost, tjelesni i zdravstveni odgoj, opći uspjeh.*

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THE RECIPROCAL INFLUENCE OF SPORTS AND MEDIA

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Original scientific paper

Abstract

In many countries sports have previously not been considered a serious subject of study. There was very little literature that examined sports as a social phenomenon significant for culture and civilization. However, rapid changes in contemporary consumer society caused by galloping technological and informational advances influenced the change in status and role of sports in our society. TV sports shows have become a kind of inner need and responsibility of the modern man through which he tries to express his vitality. Television has become a global modern sports stadium, while the media in general - a key mediator between sports and society.

Keywords: sports, media, culture

Introduction

It is widely recognized that modern sports can no longer function without media and vice versa. In order to understand this phenomenon as a whole it is necessary to view and explore it from two angles. On the one hand, we can consider its creation to be a transformation of sports activities, especially sports with a lot of fans, resulting from the influence of the media today, not only in sports, but also in our society as a whole. On the other hand, certain expert opinions suggest that the occurrence of this phenomenon is a consequence of the influence that the sports themselves have on the media. Only by reassessing these aspects and by their cross-analysis can we achieve full insight into the depth and complexity of this

phenomenon called Sports and the Media, which has a number of technological, economic, social and cultural implications in the contemporary society. The impact that sports have on the media, especially on television, touches several areas. We will consider four particularly important ones:

- Program planning

Related to the impact of sports on TV programs. It should be noted that sports are an endless source of programs and reports (live or pre-recorded), which are gradually assuming an increasingly larger percentage of time when it comes to modern television reporting. Sports have many values and a large number of attractions for those who make TV programs,

provided they are relatively cheap, versatile, restrictive in the production complexity, and that the audience is a source of profitability as it is easily adaptable to advertising strategies.

- The audience and the economy

Sports manage to attract a large audience when it comes to TV. We also need to take into account that sports are very popular on an international, national and local television when it comes to annual program planning. A significant part of sports programs are reports in prime time, and thanks to this sporting reports manage to attract a large part of the (international, national and local) advertising market.

- Television companies and prestige

The prestige of certain TV companies and their popularity depend in part of the role they have in their coverage of major sporting events. The fight, which means getting the right to televise the Olympics, is a good example of the synergy that exists in this domain. Sports have a large number of additional values for the advertisers and for the television companies.

- Technological developments and new levels of television

In our analysis of the relationship between television and sports, we must not ignore the fact that television - and the media in general - have started the process of significant changes. These changes lead us to think of a better synergy between sports and television in the future. Thus,

for example, because of their global dimension, sports are one of the major protagonists in the introduction of technology in modern communications (satellites, videos, special cameras, etc). Sporting events are thus a fundamental field of experimentation in the history of technological innovation in the media in general, and especially on television. High definition television (HDTV), the process of digitization and multimedia, results in new ways of seeing sports and movement of the human body, and will certainly contribute to the spectacle of sports in the media and thus increase the number of fans who watch sporting reports.

Sports will be a privileged field for competition in the strategies between TV companies and will insure a secure profit. In addition, they will provoke competition among the organizers of sporting events. Cohabitation of different forms of paying for television and free distribution can further strengthen the economic relationship between television and sports.

Sports and Media

Although the media are under the influence of sports, it can be said that sports are under an even bigger influence of the media. Up until the 1970s, sports were relatively independent of the mass media. The media had the same impact on the sports as well as on other social institutions such as the economy, politics and culture. However, these effects were radically changed when the media overcame the stage of "information about sports", gradually producing sports stars, with live streams and production of sporting spectacles. From that moment onwards, the mass media, especially

television, have not only been the interpreters or the reporters of sporting events but they have become their co-authors. Graphically speaking, the changes became radical when the stadiums became the TV studios. At that moment began the process of convergence between planning the sports programs and programming needs. This process included the following stages:

- Adapting national and international sporting calendars to the needs of television calendars.
- Adjusting sports schedules to the needs and priorities of the television program planning, especially when it comes to prime time.
- Internationalization of sporting spectacles. Given that satisfaction was not complete in following sports events both at the local and national level, a new international dimension got strengthened not only throughout the world because of the Olympics and world championships, but also continentally, as demonstrated by the success of continental championships in soccer, track and field, auto racing, etc.
- Changes in the popularity of sports. Another significant influence is manifested in the new hierarchy in the ranking of sports. The popularity of sports is not only determined by the sports spectacle, but by the spectacle of the television images. One of the examples is diving, which gained the largest number of spectators during the Olympic Games.
- Popularization of “western” sports in eastern countries and the Third World. Sports that originated in the West have an increasing impact which is a consequence of the system of western television that is watched around the world to a great extent.
- Regulations that apply to television. Leaving aside the impact that a video can have on the decisions of referees, television has already begun to impose its criteria for the duration of a competition. One example of this influence is the break imposed on tennis matches whose length is not predictable because the unpredictable aspect of the sport threatens television.
- The stadium has turned into a “TV studio”. The architecture of new stadiums includes space for TV cameras of which there can be hundreds during major events. The presence of TV cameras has an indirect influence on the iconography of the stadium because of the decorations and animations designed to meet the needs of television. Thus, the presence of advertising becomes part of the whole.
- The sound coming from the viewers becomes manipulated by the media, whose goal is to achieve the highest possible technical profitability from television. A good example of this phenomenon is the use of pre-recorded sound effects and even applause in numerous sporting live streams.

- The choice of audience. Television also influences the composition of the audience, showing young people in the stadiums clearer and more exclusively, while older people follow sports via television.
- The selection of host cities for major sporting events. The presence and demands of mass media influence the selection of host cities when it comes to organizing major sporting events because the difficulties are greater if there are technological limitations. While applying to host major sporting competitions, the organizers must meet stringent criteria set forth by sports organizations that are an important part stemming from the needs dictated by the mass media.

There are several basic areas in which the positive impact of media on sports is reflected:

- **Money** - Media companies pay rights for televising sporting events. Also, more appearances of a sport on television influences the increase in the value of sponsorship in that sport.
- **Education** - Through following sports in the media people learn the rules of a large number of different sports.
- **Role models** - Showing successful athletes on TV and in newspapers articles turns them into role models that people look up to.
- **Inspiration** - Media bring sports to the people who have never had the opportunity or who have never

strived to have a sporting experience. This can inspire them to be involved themselves in sports in some way.

- **Coaching advice** - Watching sports on TV helps athletes to see how to properly perform certain technical tasks in a tactical game and thus improve their performance.

The negative effects of the media on sports are reflected in the following examples:

- **Bias** - Only really popular sports get coverage in the media. This does not encourage people to get involved in some other less popular sports.
- **Less attendance** - For events that are shown on TV often fewer tickets are sold.
- **Losing the original values of sports** - Cash and commercialization of sports have made sports lose some of their core values, so today's athletes, even the youngest ones, are burdened by the imperative of victory instead of being led by the Olympic principle: "It is important to take part."
- **Supersaturation** - Too many sports nowadays in the media caused a loss of exclusivity that the sports had earlier.
- **Overload** - Famous athletes suffer huge public pressure in their private lives.
- **Requirements** - The media can put pressure on the organizers of sporting events to adapt event organization to TV viewers and not the athletes or the audience in the

stadium. For example, in the last Olympic Games, the marathon race was held when it most suited the media, regardless of the fact that the race was held during the part of the day when the air temperature was the highest.

Dependence Between Media and Sports Institutions

The synergism between the media and sports that we analyze here, as well as common interests arising from it, may cause dependence between sports institutions and the media. In fact, there are more and more cases of sports clubs that are going through a financial crisis and that are being bought out by large media companies, thus creating a unique business. The combination of interests between the media and sports institutions can cause the necessary critical functions of sports to weaken or even disappear, thus leading to a loss of autonomy and independence. However, an equally negative effect can be added to the loss of independence of sports institutions by the media. Here are some examples: Athletes are affected of some undesirable changes in the schedule of their sport (primarily time and frequency of competitions), but they cannot fight it because they are pressed by the sports competition. This happened as a result of pressure from the media that are looking for a larger number of spectacles so that their investments are profitable. The mass media's need for spectacle has already begun to threaten minor sports and physical activity in general, or the unique nature of many sports of local interest. In order to be even more critical, this loss of independence can

be counteracted by an educational message, making counter values of competition and rivalry outweigh the values of taking part, fair play, and tolerance.

Faced with such a complex phenomenon, it is difficult to find a solution, although it is possible to suggest some positive attitudes in favor of maintaining a positive function of sports in modern society. According to the author of this study, a positive attitude includes a proposal for negotiations between sports and the media respecting the working principles and logic in sports and in communication. Such negotiations should take into account the independent opinions on both sides, but both sides also need to be aware of their obligations and their cultural responsibilities that should be divided.

Conclusion

Sports have won their place on the radio, television, in the newspapers, and the Internet, but in return they had to agree to certain compromises - they became dependent on the industry by means of which they became a branch earning huge profits. Interpretation of cultural and civilizational values of sports in modern society would be impossible without considering the enormous influence that the media have on sports. In interpreting these values, we have to take into account the scope and depth of the new relationships that sports and media have built together, which today, because of the strong economic and technological connections between these two areas, we call the synergy of sports and media. The media must be aware of their social roles and great responsibility they bear for their

reporting on sporting events. On the other hand, the combination of interests between the media and sports institutions can cause the necessary critical functions of sports to weaken or even disappear, thus leading to a loss of autonomy and independence.

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MEĐUSOBNI UTICAJ SPORTA I MEDIJA

Sažetak

U mnogim zemljama sport se ranije nije smatrao ozbiljnim predmetom proučavanja. Bilo je veoma malo literature koja sport proučava kao društveni fenomen značajan za kulturu i civilizaciju. Međutim, brze promene u savremenom potrošačkom društvu, uzrokovane galopirajućim tehnološkim i informacionim napretkom, uticale su na promenu statusa i uloge sporta u društvu. Praćenje prenosa sportskih takmičenja postalo je neka vrsta unutrašnje

potrebe i obaveze savremenog čoveka, koji kroz to pokušava da iskaže svoju vitalnost. Televizija je postala globalni stadion savremenog sporta, a mediji uopšte - ključni posrednik između sporta i društva.

Ključne reči: sport, mediji, kultura.

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DIFFERENCES BETWEEN WINNERS AND DEFEATED TEAMS IN WATER POLO AT THE WORLD CHAMPIONSHIP FOR MEN

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Abstract:

The aim of this work is to determine the difference between winners and defeated teams in the top water polo at the World Championships for men's competition. The sample encompassed 16 teams at the World Water Polo Championship held in Shanghai 2011th. In this study we analyzed teams that were winning and teams that lost their matches. We analyzed data of 45 matches from the official website "OMEGA" which contains statistical data from the World Championships in water polo for men (Shanghai - China, 2011). The sample of variables based on certain segments of the water polo game for men in stages of attack and defense, and those are: GS - goals scored, AAG - Attempt to achieve goals; A - Action Shot; C - Centre Shot, X - Extra player shot; 5 m - Penalty; m1 - 5 Penalty Attempt; TF - Turnover foul and SP - Sprint. Hi- square test results have shown that there are statistically significant differences ($p .000$) in the analyzed segments of polo matches. Teams that overcame were more ready in motoric ability and had faster swimmers, because of large number of goals which were scored from counter attacks. It can also be concluded that the game contained more fouls (rougher game) compared to the earlier water polo matches. Defeated teams made several fouls during the counter attacks of opponents which caused a greater number of penalty shots and the success of winning teams in taking those shots. Generally, it can be concluded in the field dynamics of the game, that dynamic was on the side of winners team which won the final and showed better results.

Keywords : *water polo men's competition, scores analysis, technique, performance*

Introduction

Water polo is, apparently, a very simple game, which is implemented by simple elements of technique and tactics. However, water polo is a sport with a long tradition (Donev and Alekandrović 2008).

The elements of water polo techniques and tactics are very complex and complicated with a large number of choices of technical - tactical elements. To make all aspects of the game functional, the approach must be thoroughly planning tactics in order to

defeat the opponent team - of course for each game and each team separately. One of the most important indicators about the exact state of training opponents are scientific research.

The development of modern water polo game, the accelerated rhythm and tempo, situational activities and reactions in specific circumstances, new requirements in terms of anthropological dimension and counter-flow water polo action at all stages of the game, require a serious approach and work to improve water polo technical and tactical knowledge in all selections. Kylie et al. (2006) found that poorer motoric readiness influences the realization of various technical elements that are performed and that way the efficacy in performance of these technical elements is reduced. Platanou and Geladas (2006) in their research found that short-term training in terms of training tactics before significant competition, did not demonstrate adequate efficacy, while the long preparations of players no matter what position there are playing, make a major contribution to the victory of the team. In studies where are determined the complexity of water polo game for men (Polglaze et al., 2008) indicate the high intensity of recurring technical elements of players, due to the specificity in which the activities take place (aqueous environment) as well as fight with opponent players. Aleksandrović et al. (2011) proved that the functional capabilities are playing great importance in all elements of water polo games. Estalante et al. (2011) concluded that the changes in rules of water polo games, which happened during the period 2005-2009, where he, also, presented the new FINA rules and all that was in the function

of improvement of attractiveness in men's water polo game. The most significant change of the game is "increase quarter duration with seven minutes to eight minutes of actual play, "reduced the distance of penalty kick with 5 meters" etc. Because of all the above indicate feedback needs form competition with informations which will quantify the technical and tactical indicators (Lozovina et al., 2004, Platanou, 2004). The obtained information from various competitions can be used in a positive development and transformation performance of water polo athletes in purpose of attainment of the most efficient result in competitions starting from state leagues to the Winter Olympics. All information should be collected in an objective, valid and consistent manner and based on the analysis and evaluation of key elements of the game should be presented to coaches and players, thus opening new possibilities to improve the game in their team. The term tactics we can understand as action of the whole team in attack or defense in order to score as many goals or prevention of conceding the goals in defense. Lupo et al., (2011) analyzed technical and tactical aspects of 12 water polo matches for women at National Collegiate Athletic Association (NCAA) in two segments: a) counter attack on the strength of the game, b) the results of winner and defeated team. The difference between team that won and team that lost determined a comparison between: the campaign, the number of girdles, exclusion of players, penalties, shot ability and shots from outside the area of five meters. Winner team have shown better organization when performing actions, more rapid action with effective girdles ie passing and kicking towards the goal (Enomoto et al. 2008). Also, they

analyzed matches from The World Championship for Women 2001 in the following segments of the water polo game: attack, shots, the results of shooting, foul, ball errors, mistakes without the ball and attack.

Results have shown that highly ranked teams in the attack have frequent shots with only minor errors in relation to the lower-ranked teams in the attack. Highly ranked teams had more individual fouls and goalkeepers had more effective tactical defense than the lower-ranked teams. Aim of this study is to determine the difference between teams that overcame and defeated onces of the top water polo teams - participants in the World Championships in the men's competition.

Material and Methods

The sample

The sample represented 16 water polo teams at the World Championships in water polo for men held in China - Shanghai, 18 to 30 June 2011, in which we analyzed data on teams that won or lost their matches. We analyzed 45 matches. Data is retrieved from officinal website "OMEGA" (page contains statistical data from the World Championships in water polo for men).

The sample of variables

The sample of variables based on certain segments of the water polo game for men in stages of attack and defense, and those are: GS - goals scored, AAG - Attempt to achieve goals; A - Action Shot; C - Centre Shot, X - Extra player shot; 5 m - Penalty; m1-5 Penalty Attempt; TF - Turnover foul and SP - Sprint.

Methods of data processing

For all analyzed variables of water polo game for men frequencies and percentage values were calculated, and for determining the differencies between frequencies of winner and defeated teams the Chi-square test on the level of statistical significance of 5% was used.

Results

In Table 1 are the results of the differences between the frequencies of teams that won and teams that were defeated, in the water polo matches at the world championships in Shanghai 2011. Results of Chi -square test (chi-square = 120), Degrees of freedom = 8, with the coefficient of contingency (C = 0.14), clearly show that there are statistically significant differences respectively (P .000) in the analyzed segments of the water polo match.

Table 1: Results of winners and defeated team in water polo for men

	winners team	defeated team	Total
Goals scored	562	337	899

	(16,6%)	(11,3%)	(14,1%)
Attempt to achieve goals	1341 (39,6%)	1209 (40,7%)	2550 (40,1%)
Action shot	208 (6,1%)	123 (4,2%)	331 (5,2%)
Centre shot	62 (1,8%)	27 (0,9%)	89 (1,4%)
Extra player shot	159 (4,7%)	114 (3,8%)	273 (4,3%)
Penalty	59 (1,7%)	48 (1,6%)	107 (1,7%)
Penalty Attempt	298 (8,8%)	351 (11,8%)	649 (10,2%)
Turnover foul	569 (16,8%)	697 (23,5%)	1266 (19,9%)
Sprint	131 (3,9%)	65 (2,2%)	196 (3,1%)
	3389 (53,3%)	2971 (46,7%)	6360 (100%)
Chi-square = 120. Degrees of freedom = 8 Crobability = 0.000 C = 0,14			

Discussion

Analyzing the individual variables, it can be noted that total goals scored is 14.1%, of which is 16.6% from winners team side and 11.3% from defeated team side, where winners were better with result. Defeated

team had 40.7% of attempts to to score a goal, and winners team tried to to score the same with 39.6%, which proves that winners team were precise and dominant in relation to the defeated ones, or a total of 40.1% of attempts to the score in relation to the other parameters. The

winner team scored a goal from action with 6.1%, and the defeated teams (4.2%), which is a total 5.2%. Central players in the defeated team scored 0.9% of goals, and central player of the winning team scored 1.8% of goals. Total of scored goals is 1.4%.

Right bower of winners team scored 4.7% of goals, and defeated teams scored 3.8% of goals, making a total of 4.3%. Penalty shot (penalty) is achieved in a total of 1.7% where winners team achieved 1.7% and defeated team achieved 1.6% of goals. The attempt of giving goals from a penalty position which the goalkeeper defended or failed in total is 10.2%, of which defeated teams did not achieve score of 11.8% from a penalty position, and winners team did not achieve score 8.8%, from the same position. Whistle for a foul in the counter attack was made by team which won 16.8% and 23.5% from defeated team – and in total 19.9%, which indicates that at this championship a major role played in swimming segment and those who was prepared in this segment, won this championship. Sprint with counter attack and scored goal in total is 3.1% where 3.9% for winners team and 2.2% for defeated team.

The most significant differences were observed among the teams in the variable "center had goal" (C-Centre shot) which is very interesting because, in generally, they don't take a shot from these positions. This indicates that the defense tactics in training and warm-up games concentrated on right bower, the wing players as well as players on the outside but not on central players. In this case centers came to free space where they naturally took advantage of scoring a goal. Above mentioned variables

also indicate good precision in shooting. It must be noted that they worked more on the tactics of attack and defense, because of the majority of goals which were scored through elaborate actions or tactics. Francisco et al. (2009) in their study analyzed results and found that there are statistically significant differences in results. In the samples they observed thirty six parameters of attack and defense, in the women's category and forty-six parameters in the men's category. Hayley et al. (2010) in their study found that swimming with the ball reduces the speed of swimming in the men's water polo, but the precision remains unchanged. Defeated ones and the winner teams played stronger defense with sharper fouls («men's game»). After these fouls, they were awarded penalties and the winner team was more precise in performing penalties which of course had a positive impact on the outcome of the game. Argudo et al. (2008) concluded that the winners had better play without the ball and because that they succeeded in winning. Prieto et al. (2013) compared the results collected in both gender and test teams that are more successful individually in the first and second division of water polo league. They came to the conclusion that there is a statistically significant difference between men's and women's leagues in favor of men's teams and with greater difference in the second division. Hayley et al. (2010) in their study found that swimming with the ball reduces the speed of swimming in the men's water polo, precision remains unchanged. As part of this research it can be concluded that goalkeepers of both teams were on a mission as they successfully defended a large number of shots on goal. In their research Argudo et al. (2007) at 10 World

Championships in the male population between the winners team and defeated team found difference in the determination of the action, precise passing and shooting. If we compared these findings with findings by Argudo (2000), Argudo and Lloret (1998) and Argudo and Lloret's (1999), where the subject of the analysis is focused on tactical assessment at the European Water Polo Championships held in 1997, it is clear that between successful and unsuccessful teams in water polo, found levels of statistical significance is .05 in favor of the winning team.

Conclusion

This leads to the conclusion that it was a good set of defense tactics by team that dominated and won. Also, we conclude that they were prepared, had better motoric abilities and had faster swimmers because

of a lot of scored goals from the counter-attack. Another statement in the conclusion is that the modern game is rougher in comparison to the previous water polo game. Defeated teams made more fouls in their counterattacks which resulted in higher number of offenses with a penalty and subsequently resulted in greater success of the winner team in the execution of the shots.

As it is expected, the dynamics of the game was on the winner side, including better competition as the final results showed. The results can be used in water polo clubs for teaching and other similar institutions that deal with this issue. The research results can be a good basis for further research projects aimed at improving water polo game.

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RAZLIKE IZMEĐU POBJEDNIČKIH I PORAŽENIH TIMOVA U VATERPOLU NA SVJETSKOM PRVENSTVU ZA MUŠKARCE

Sažetak

Cilj rada je utvrđivanje razlika između ekipa koje su pobjeđivale i pobeđenih ekipa u vrhunskom vaterpolu – učesnici svjetskog prvenstva u muškoj konkurenciji. Uzorak ispitanika je predstavljalo 16 ekipa sa Svjetskog prvenstva u vaterpolu održanog u Šangaju 2011. kojom prilikom je izvršena analiza između ekipa koje su pobjeđivale i ekipa koje su pobjeđene, odnosno gubile utakmice. Analizirano je 45 utakmica sa podacima oficijalne WEB stranice "OMEGA" koja sadrži statističke podatke sa Svjetskog prvenstva u vaterpolu za muškarce (Šangaj – Kina, 2011. godine). Uzorak varijabli je baziran na određenim segmentima vaterpolo igre za muškarce u fazama napada i odbrane i one su: GS - goals scored; AAG - Attempt to achieve goals; A – Action shot; C – Centre shot; X – Extra player shot; 5 m – Penalty; 5 m1- Penalty Attempt; TF – Turnover foul and SP – Sprint. Rezultati H kvadrat testa pokazuju da postoje statistički značajne razlike ($p .000$) u analiziranim segmentima vaterpolo utakmice. Ekipe koje su pobjeđivale bile su motorički spremnije i imale su brže plivače jer je veliki broj golova postignut iz kontra napada. Takođe se može konstatovati i da je igra sadržala mnogo više prekršaja (grublja igra) u odnosu na ranije vaterpolo utakmice. Ekipe koje su gubile napravile su više prekršaja pri kontra napadu protivnika što je uzrokovalo veći broj kaznenih udaraca i potom uspijeh ekipa pobjednica u izvođenju tih udaraca. Generalno, može se konstatovati, da je u nadmetanju na terenu dinamika u igri bila na strani ekipa pobjednica što se i pokazalo konačnim boljim rezultatima.

Ključne riječi: *Takmičenje, Notacijska analiza, Tehnika, Performance.*

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EDUCATION OF SPORT MANAGERS IN SERBIA – A CURRENT AND FUTURE SITUATION

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Abstract

There is a catchphrase currently popular in the business world that says – it is easier for a company to recover from a financial loss than from a badly chosen manager. Highly knowledgeable, skillful, able and personable managers can give an organization competitive edge. An important factor in this aspect of organizational functioning is level and quality of managers' education (of the future and/or current managers). These tendencies are certainly present in sport. For very demanding sport branches, both in the area of sport training technology and in organization management, highly professional human resources with specific knowledge and applicable skills are a necessity. Current tendencies of transformation of higher education in Serbia are also affecting the education of sports managers. Even though, the schooling system for sport managers is still not clearly defined or formed, that is, the elements of study programs, which would encompass all educational institutions for sport, are not correlated, standardized and uniform, there have been certain improvements in the recent years. However, even with the clear standardization and accreditation requirements for higher education institutions, in practice, study programs are fairly inconsistent and unequal. Therefore, there is a question about validity and functionality of the Bologna process in education of sport managers in our country, because new generations of educated sport managers are supposed to create grounds for faster and more energetic transformation of sport activities in Serbia, and thus, bring it closer and include it in the world sports trends. The study is basically a qualitative and quantitative analysis of accredited study programs of higher education institutions which educate professionals in the field of sport science, with the emphasis on study programs within sport management.

Key words: education, sport managers, the Bologna process.

Introduction

In the contemporary academic discussions related to globalization and its effects on different areas in socio-economic

environment, only in the recent years has the subject of globalization policy in higher education become more intense. Namely, this happened just after the adoption of Bologna declaration

(Savićević, 2007), while more vigorous discussions about its real goals and limitations (Kulić, 2008) in our scientific circles occurred after 2005 (starting with the first round of accreditations of higher education institutions and their study programs).

The Bologna declaration defined several goals and priorities for the higher education reform in Europe and by its adoption, in our academic realm as well, where one of the common criteria is associated with the year of 2010 as a benchmark for the complete implementation of “the European Higher Education Area”. In this time period, numerous studies, discussions and academic articles dealt with analysis of Bologna process implementation in our country. There were those with critical and analytical viewpoint (Avramović, 2011; Mitrović, 2011; Stepanov, 2011; Nenadić, 2011), critical, socio-philosophical aspects of its existence were also covered here (Milošević, 2011; Radoš, 2013), and finally, affirmative and systematical explanation of the Bologna effects on our education (Spasojević, Kleut and Branković, 2012; Vukasović, 2012;). However, there are few studies dealing with specific (focused) analyses of certain study elements, whose lack is especially noticeable in sport science.

Modern globalization trends have mostly been analyzed from economic perspective in the contemporary literature. There are fewer discussions about interconnectedness of globalization and other areas from social life. More detailed analyses about relations between globalization and education started by the end of the 1990s, becoming more intense

in the last years of the past decade. What is common in all approaches is the viewpoint that globalization has a great impact on education and pedagogy in general, that is on its system and organization. The consequences of this impact have hit the transitional societies and economies the hardest, namely, their education systems, which have to adjust to demands of the “global market”. Therefore, the educational reforms in many transitional countries cannot be understood completely without their connection to globalization processes, just like the Bologna declaration cannot be considered outside of that context. To be more precise, the Bologna declaration is one of the aftereffects of globalization, but it is still not clear whether this document should be regarded as a step toward modernization and improvement of higher education or its basic function was simply to unify education systems in Europe. This kind of evaluation takes time, that is, “empirical verification” of that so called “optimal model of higher education”, without unnecessary “idealization” and glorification of Bologna declaration (Kulić, 2008, p. 537).

The development strategy of education in Serbia till 2020 has outlined a certain direction for the higher education development. The special angle has been the current political and economic trends in the region (the key point of reference – EU membership) with a clear stance about the need for a thoughtful, organized and quality development of education system as a main condition for development of Serbia toward society based on knowledge. Furthermore, it is emphasized in this document that Serbia would remain at the “European periphery” without the

reform of education system (not very competitive, unattractive for investments in sectors which create greater new value), facing ongoing emigration of talented and creative people and with blocked potential for development of democratic and just society. Thus identified circumstances also demand synchronization of education system in Serbia with European education system (Strategy, 2012).

The main mission of higher education as outlined in strategic plans till 2020 is continuous organization of study programs and research for the purpose of constant transfer and creation of scientific knowledge and professional competence of students (future experts). Its vitality can be seen through realization of the following parameters: restructuring of higher education institutions; defining of scope and standards for a candidate's entry into the system of higher education; assurance of quality control; modernization of study programs and introduction of new forms of education; research, innovation and enterprising component in higher education; intra-university and inter-university connection and cooperation; modernization of managing practices, management and business administration in higher education institutions; international openness and mobility (Strategy, 2012).

There is a catchphrase currently popular in the business world that says – it is easier for a company to recover from financial loss than from a badly chosen manager. Highly knowledgeable, skillful, able and personable managers can give an organization competitive edge. Hence, questions of choice and selection of a manager should be carefully considered in

sport organizations. An important factor in this aspect of organizational functioning is level and quality of managers' education (of the future and/or current managers).

Research premise

The Bologna declaration (signed in 1999 by ministers of higher education in several European countries) marked a beginning of a new model of higher education system focused toward unification of European academic space. First generations of students in Serbia who attended these new "Bologna" study programs, mostly finished their studies by now, therefore, it is possible to make certain conclusions about the present experience with the Bologna system of education. Education of sport managers is also included in it, that is, of sports professionals which are to perform different business tasks directly related to all aspects of management application in sport.

It is known that the essence of the Bologna process is marked by a reform of higher education, best seen in public responsibility for higher education and science, management of higher education and its social dimension with emphasis on importance and role of highly educated people in modern, globalized and all the more complex social processes which demand suitable qualifications. The implementation of this model of education in Europe assumes that higher education in its organizational physiognomy has to fulfill three basic factors: 1) mobility, 2) attractiveness and 3) employability.

In this education context, it is necessary to consider, that is, to clearly identify all professional-work needs of sport as a particular social field. In other words, it is

necessary to start with causes which are imposing differentiated education and adapted to the needs of managerial staff in sport¹; the education which should be separate from the general management field and focused toward specialization of sports knowledge (in all its aspects). This is conditioned by the presence of following factors (Nešić et al., 201, p. 221):

- Developing sport trends in the global environment, pertaining to both quantity and quality;
- The fact that the world sport is more and more present on the market, which creates the need and opens possibilities for marketing activities in sport, and this further requires the existence of specifically educated professional (managerial) work force;
- Education of sports managers has to be based on the essential guidelines from sport, which protect and safeguard sport's mission and spirit. Therefore, it is necessary for sports education to be realized within sport environment and by means closely linked to sport.
- Former general education of managers (especially sport managers) was based on insufficiently flexible and specifically targeted curriculum, where ensuing work situation of thusly educated sport professionals wasn't taken into careful consideration.

The aim of this preliminary research was identification of certain indicators of education determinants related to sport managers within the academic space of Serbia. Accredited study programs of higher education institutions in Serbia that educate future sport professionals were evaluated through quantitative and descriptive analysis performed via application of *ex post facto* method. The research attention was primarily focused on study programs for education of sport managers (sport management), that is, on future professionals which will deal with managing-leading or operative-executive tasks in sport.

Data were collected by content analysis, and the source of relevant information was the website of Commission for Accreditation and Quality Assurance² of National Council for higher education in Republic of Serbia, as well as the official websites of certain higher education institutions. The data were collected from two time periods – one from 2007 till 2010 (the period of “zero accreditation”) and another from 2010 till 2013 (the final period of the 1st cycle of higher education institutions accreditation and the beginning of the 2nd cycle of institutions and study programs' accreditation).

Results and discussion

Certain aspects of the higher education strategic development in Serbia might not be planned constructively nor implemented in the future, unless they are founded on the permanent identification

¹Managing-leading and operative- executive

²www.kapk.org – the official data published by July 9, 2010 and December 31, 2013. godine

and parameter analysis of the current situation in specific parts of the education system, or areas to which they are directed. In this context, an important place should belong to discussions about educational aspects in sport activities. High demands of modern sport as a significant social field, both in the area of sport training technology and in organizational management, require adequately trained and competent human resources, who as fundamental human potential possess specific knowledge and applicable skills. Sport management in our country is still facing a problem of “enlistment” of adequate managerial staff in sport (which is greatly needed in the immediate sport practice). There is a question with what knowledge, ability and skills will this workforce perform new, more complex and more responsible duties in sport. It is obvious that the present custom of selecting managerial staff from other areas, professions and scientific disciplines, cannot ensure quality and competent managerial human resources in the long term.

On the territory of the Republic of Serbia, thirteen higher education institutions

involved in education of personnel in the field of sport and physical education has successfully completed the accreditation process so far. Out of these, 12 institutions have been fully accredited (with work permit and accredited study programs), while one is in the process of accreditation of study programs (with work permit). In terms of ownership structure, the state is a founder of six institutions, while individuals are founders of the remaining seven (higher education institutions with a private founding investment). As compared to the period from 2007 to 2010, the number of higher education institutions in the field of sport science has risen by three (one state and two private ones).

Within the institutions analyzed, a total of 37 study programs, that include curriculums for education of professionals in the area of physical education and sport, have been accredited until now. Out of this number, future sport managers can be educated only via six programs, four of which are vocational, while two are of academic level (Table 1 and 2).

Table 1 – Accredited study programs in the field of sport science

status \ level		Academic	Vocational	Σ
State	2007-2010	14 41.2%	5 14.7%	19 55.9%
	2010-2013	17	4	21

		45.9%	10.8%	56.7%
Private	2007-2010	6 17.6%	9 26.5%	15 44.1%
	2010-2013	8 21.6%	8 21.6%	16 43.2%
total:	2007-2010	20 58.8%	14 41.2%	34 100%
	2010-2013	25 67.5%	12 32.4%	37 100%

Table 2 – Accredited study programs in the field of sport management

level status		Academic	Vocational	Σ
State	2007-2010	-	1 3%	1 3%
	2010-2013	-	1 2.7%	1 2.7%
Private	2007-2010	2 5.9%	2 5.9%	4 11.8%
	2010-2013	2 5.4%	3 8.1%	5 13.5%
Total:	2007-2010	2 5.9%	3 8.9%	5/34 14.8%
	2010-2013	2 5.4%	4 10.8%	6/37 16.2%

It is noticeable that the number of study program that are directly related to sport management, that is, to education of professionals for leading-managing and operative jobs in sport, have been constantly varying during the entire accreditation period, as well as before the start of the accreditation cycle. For example, in the period before the official start of accreditation of higher education institutions and study programs, or since the beginning of private initiative in higher education in our country (private universities, colleges, and other higher education institutions), there were around twelve study program for sport management in Serbia, out of which 7 was academic, while the rest of them were vocational (the period between 2000 and 2007). After that period, there was a significant decline in the number of study program for sport management (even though there was no decline in the number of higher education institutions), and in the period between 2007 and 2010, this type of professionals was possible to educate only through five study programs, out of which two were of academic level. The current situation in this area shows some improvement tendency because the number of study programs for sport management has increased by one since 2010 till now (only at the level of vocational studies) (Table 2).

These tendencies definitely express certain disharmony in the complex systematical approach to problem solution of professional work in sport in general, especially in the field of sport management. The old belief that sport management is a domain that primarily deals with the trade of athletes is still present in professional and often in academic circles as well. Nevertheless, sport jobs which involve development of professionals in the field of sport management are much more complex and interdisciplinary oriented, so they cannot be lightly regarded or trivialized in the context of business agency (management). This is indicated by the newest Nomenclature of sport professions and job titles in the Republic of Serbia (adopted in 2013) which defined jobs, professions and job titles in sport in greater detail including also leading-managing and operative-executive jobs. It can be observed (Table 3) that out of total 15 sport professions, four are directly related to the science of sport management. Namely, out of total 47 established sport professions, sixteen can be classified as sport management ones (and in the context of managerial levels in sport organizations, they encompass a whole range of jobs in sport organizations – from operative to top level management jobs) (Table 3).

Table 3 - Sport professions and job titles in Serbia(since 2013)

RB	The name of sport profession	Job title
1	Coach in sport	1) sport teacher 2) sport operative coach 3) sport coach 4) sport coach specialist 5) sport coach – teacher of physical education and sport with a relevant BA diploma
2	Instructor in sport	1) sport teacher 2) sport operative coach 3) sport coach 4) sport coach specialist 5) sport coach – teacher of physical education and sport with a relevant BA diploma
3	Organizer of recreational sports	1) recreational sports demonstrator 2) recreational sports guide 3) organizer of recreational sports 4) specialist for recreational sports 5) teacher of recreational sports
4	Organizer of sport business	1) organizer of sport manifestations 2) organizer of sport programs and projects 3) organizer of sport trainings and travels 4) organizer of maintenance of sport facilities 5) organizer of security in sport 6) organizer of antidoping activities 7) sport statistician

		8) sport scout 9) assistant for sport marketing 10) organizer of ticket sales
5	Manager in sport	1) operative sport manager 2) sport manager 3) sport manager specialist
6	Sport agent	1) sport agent
7	Referee in sport	1) sport referee 2) national sport referee 3) international sport referee
8	Sport guide	1) sport guide
9	Sport lifeguard	1) assistant lifeguard 2) lifeguard 3) lifeguard instructor
10	Professional athlete	1) professional athlete (with the name of a sport branch)
11	Sport documentalist	1) sport documentalist
12	Journalist in sport	1) sport journalist 2) sport reporter
13	Sport publicist	1) sport publicist
14	Counselor in sport	1) sport counselor 2) senior sport counselor
15	Medical practitioner in sport	1) club's physician 2) national team's physician 3) sport physiotherapist 4) senior sport physiotherapist

Total of sport professions: 15	Total of sport job titles: 47
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Source: *The rules for the nomenclature of sport professions and job titles, The Official Gazette RS No. 7 (2013)*

Only a brief inspection of the structure of activities, jobs and tasks which experts from the field of sport management should perform in sport organizations and institutions, indicates the complexity and high requirements of their competencies. Thus, for example, the job title *manager in sport* is defined as “the profession of a person who deals with the managing tasks in sport organizations, namely, the tasks of managing, organizing, coordinating and planning as well as controlling both a sport organization and the employed and contracted personnel and registered members (The rules for the nomenclature of sport professions and job titles, 2013, article 38). Within this profession the total of 12 groups with business activity outlines have been explicitly defined. Additionally, within the job title of *organizer of sport business* (that directs activities to levels of functional and operative management in organizations) it has been stated that “the organizer of sport business is the profession of a person who deals with tasks that are directly related to organizational functioning in the field of sport (secretaries, personnel responsible for security during sport activities, antidoping activities, planning and managing programs, issuing seasonal licenses and so on.)” (The rules for the nomenclature of sport professions and job titles, 2013, article 30). In the scope of this profession it has been explicitly defined as much as fifteen groups of business activity

outlines which are performed by this type of professionals in sport organizations. Furthermore, with the abovementioned professions and in this context, it is also necessary to have in mind the profession of a *sport agent* (it is a person whose job is to deal with tasks of intermediation during the transfer of an athlete from one sport organization to another), and here there are 5 basic groups of business activity outlines laid out; and finally, there is a *sport counselor* (a person who performs jobs of senior advisory and occupational nature in sport) with 6 groups of activity outlines. Therefore, it is evident that sport legislation establishes important determinants of competence and the complexity of business tasks, and thus also responsibility of human resources who perform them. Through the scope of operations, whose primary function is to ensure optimal work conditions of a sport organization as a whole, it is necessary to realize the conditions needed for realization of athlete’s maximum potential (through trainings and sport competitions as events where the training effects are verified and evaluated). For this reason, the appropriate attention must be paid to educational component of such personnel, both in terms of its “width” and also in terms of academic level.

Compared to the earlier period, currently accredited study programs and institutions of their realization, have a prescribed

enrollment quota, that is, the number of students which may attend it (Table 4).

Table 4 – Enrollment quotas of accredited study programs of sport science

level status		Academic	Vocational	Σ
Sport management	2007-2010	90 5%	135 7.5%%	225 12.5%
	2010-2013	190 7.9%	118 4.9%	308 12.8%
Physical education and sport	2007-2010	1074 60%	493 27.5%	1567 87.5%
	2010-2013	1492 62.1%	600 25%	2092 87.2%
Total:	2007-2010	1164 65%	628 35%	1792 100%
	2010-2013	1682 70%	718 29.9%	2400 100%

It is evident that the number of students, and thus future professionals in the field of sport management, is considerably lower compared to the total student population in physical education and sport. These tendencies are certainly not beneficial for the development of sport activities in the long term, given the already reduced and in practice “poorly” educated managing and functional-operative base of sport organizations. The percentage of no more than 12.8% of potential sport management

students, out of which only 7.9% is at the academic level, indicates bad positioning judgment of the higher education development elements and sport in general.

Taking into account the clear preference for and acceptance of the Bologna process in the field of sport and education, accredited study programs of sport management didn't (at the beginning) position Bologna's adequate application

clearly enough in the long term. This is especially evident in some segments, which are important from the position of the Bologna process. If one is to analyze vocational study programs in sport management, it is clear that a possible cross-mobility of students could be one of the problematic issues. The number of study subjects, the compatibility of their curriculum, and especially ECTS “difficulty” (regarded only formally), don’t indicate a high level of agreement among higher education institutions where the study programs are realized. A student of vocational sport management studies in Serbia is required to pass approximately 20 exams and complete a thesis. Out of this number, only 11 subjects can be said to show a certain level of compatibility curriculum-wise, which is about 55% of the average study program. Furthermore, ECTS aspect of these, and other study subjects, is fairly unequal. It is almost impossible to find two or more subjects with the same ECTS value in all four vocational study programs. The average agreement based on this criterion is around 19%.

The number of classes needed for mastering a subject matter also doesn’t show tendencies of high uniformity. A weekly class schedule goes on average from 2-5 (lectures) and 4 hours of practice. It is obvious that the abovementioned lack of uniformity is most pronounced when it comes to lectures. What is observed is that within all four analyzed vocational study programs the number of curriculum hours is equalized among the following subjects: Management in sport (sport management), Management of sport events, and Management of sport facilities, and this is in the part related to practice.

Additionally, the ratio of sport management vocational and academic studies doesn’t offer enough possibilities and satisfactory prospects for further academic advancement of the future professionals in this field. Only two study programs offer possibilities for advancement toward the highest academic levels in this part of sport “profession”, that is, only 5.4% out of all study programs within the sport science (Table 2).

Therefore, it can be generally concluded that when it comes to the education of sport managers in Serbia, the idea of “Bologna” cannot be given highly correlational marks, mostly because of the following reasons:

- Mobility – if one is observing study subjects and their content, it is possible to ensure mobility in the percentage of about 55%.

- Uniformity of ECTS “difficulty” across study subjects – there is around 19% of compatibility, which doesn’t provide the opportunity for transfer and/or continuation of studies at some other institution “without problems”;

- The results of programs (the outcomes of education) – viewed through differently formulated number of credit hours; they don’t ensure sufficient compatibility of study programs among accredited higher education institutions and study programs.

These tendencies certainly create the impression that the long-term plans for development of “sport profession” are primarily relying on the pragmatic side of kinesiological sciences (sport coaches,

physical education teachers), neglecting the very important aspect of organizational and managerial activities in sport institutions and organizations. And those (managerial) activities, in essence, should secure the appropriate business (and other) climate in which the expert jobs in kinesiology science can be realized. In the modern business environment, to which certainly the entirety of sport belongs, and where changes are very intense and all the more demanding, the successfulness of an organization and system can be ensured by in the long term.

Conclusion

The Bologna process, which has been implemented throughout the higher education of Serbia for several years, aside from its strivings toward modernization and improvement of higher education, also showed certain weaknesses in its practice up to the present time. Namely, the very beginning of its application wasn't taken in its original and essential sense, but rather it can be said that the idea of "Bologna" was accepted mostly formally and administratively. It is certain that a comprehensive and substantial analysis of the Bologna process implementation results in Serbia, as well as plans for its further development, have to be based on adequate, competent, and complex scientific researches. However, some partial and general indicators, based on the present experience and individual researches, can show certain tendencies in its present application.

Judging from the aspect of education of sport managers in Serbia, it can be concluded that the application of the

highly educated and skilful professionals that are able to apply all the necessary knowledge from the modern management science. Seen from the point of view of the current approach to solution of organizational (and other) problems in Serbian sport, where there is still understanding that management is an activity where one employs so called "social-sports workers" and/or personnel that "have time to deal with sport issues in their free time", this surely isn't possible and sustainable

Bologna process, from the very beginning, didn't have a firm foundation for the long term advancement of this type of professionals. Among other things, the limitations are observed in the following parts:

- Decreased number of study programs which are directly focused on education of sport managers, as compared to the period before the accreditation cycle started;
- Study programs for education of sport managers are mostly carried out at the vocational level of education, which makes (and it can make it impossible) further development of managerial personnel in sport harder;
- The lack of uniformity among study curriculums, namely, their formal constitution, can potentially be a hindering factor in the inter-institutional mobility of students, and this is one of the "Bologna's" important goals;
- The programs created thus far, through the ECTS point system, do not enable mobility of students without additional problems (testing, verifications, non-

(acceptance) of exams and such). It is already observable that when students pass certain exams and gain points, it is not clear enough what real knowledge/skills are reflected by the achieved “credits” (the outcomes of knowledge);

Sport management study programs do not follow as much as necessary the spirit of the Bologna declaration. Only at one higher education institution there are two levels of (academic) accredited studies, while others are related to vocational studies; this is the situation which minimizes the principle of three level studies. This leads to the problems in the application of “comparable diplomas”. On this occasion, one doctoral study program (management in sport) is not included considering the fact that it reflects scientific level of explanation of different fields in sport;

Current reports about the implementation of the Bologna process in Serbia warn how it is unrealistic to expect that all its goals should be achieved immediately, simultaneously and comprehensively. It is, after all, the situation in the general environment (of the European academic space that accepted “Bologna”), where it is noticed that countries do not go at the same pace in its implementation. In addition to the observed and recorded problems, it is concluded that we should work more actively on formulating of the adequate standards for the permanent, life-long system of advancement in higher education. These conclusions can undoubtedly be fully applicable to the field of sport managers’ education. However, the system on informal education in sport (and in sport management) shouldn’t be a dominant form of education of

professionals that will work in sport organizations and institutions, but only continuous upgrading of the competencies acquired through different levels of higher education. And it is precisely these tendencies, which strive to have the constituting system of sport managers’ basic competencies set at the level of “professional development”¹, that are emerging as the long-term perspective (and orientation) in the educational context of sport environment in Serbia.

³*And essentially that is „ the course for amateurs“*

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EDUKACIJA SPORTSKIH MENADŽERA U SRBIJI-U SADAŠNJOJ I BUDUĆOJ SITUACIJI

Sažetak

Trenutno popularna fraza u poslovnom svijetu kaže - lakše je za tvrtke da se oporave od finansijskog gubitka nego od loše odabranog upravitelja. Visoko obrazovan, vješti, sposobni i lijepi menadžeri mogu dati nekim organizacijama konkurentsku prednost. Važan čimbenik u tom aspektu organizacijskog funkcioniranja je razina i kvaliteta obrazovanja rukovodećih službenika (od budućih / ili sadašnjih menadžera). Ove tendencije su svakako prisutne u sportu. Za vrlo zahtjevne sportske grane, kako u području sporta, trenažne tehnologije i upravljanja

organizacijom, visoko profesionalni ljudski resursi sa specifičnim znanjima i vještinama su nužnost.

Trenutne tendencije transformacije visokog obrazovanja u Srbiji također utječu na obrazovanje sportskih menadžera. Iako, školstvo za sportske menadžere još uvijek nije jasno definirano ili formirano, to jest, elemente studijskih programa, koje bi bile obuhvaćene sve obrazovne ustanove za sport, nisu povezani, standardizirana i ujednačena, pojavili su se određeni pomaci u posljednjih nekoliko godina. Međutim, čak i sa jasnim normizacijama i akreditacije zahtjevima za visokim učilištima, u praksi, studijski programi su prilično nedosljedn i nejednaki. Dakle, postavlja se pitanje o ispravnosti i funkcionalnosti Bolonjskog procesa u obrazovanju sportskih menadžera u našoj zemlji, jer su nove generacije školovanih sportskih menadžera trebale biti temelj za bržu i energetska transformaciju sportskih aktivnosti u Srbiji, i na taj način, približiti i uključiti je u svijetu sportskih trendova.

Studija je u osnovi kvalitativna i kvantitativna analiza akreditiranih studijskih programa visokih sveučilišta koja obrazuju stručnjake iz područja sporta i znanosti, s naglaskom na studijske programe u sklopu sportskog menadžmenta.

Ključne riječi: obrazovanje, sportski menadžeri, Bolonjski proces.

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INFLUENCE OF ANTHROPOLOGICAL CHARACTERISTICS OF THE EXPRESSION AGILITY IN FOOTBALL

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Abstract

The main objective of this study is to determine the impact of anthropological characteristics of speed changes of direction players with and without the ball. The sample for this study consisted of forty-five players aged 14-16 years, mean body height 167.96 ± 10.05 and an average body weight of 55.81 ± 10.79 . To determine the influence of variables (anthropometric characteristics) on the criterion variable (tests for evaluating agility that is a variability speed direction players with and without the ball), was applied multiple regression analysis. To determine the reliability of the tests that were designed for the purposes of this study were calculated by two parameters: Krombachov variability index (Cronbach's Alpha) and internal correlation coefficient for each test separately (ICC). The results clearly indicate that the rate of change of the direction of movement without the ball statistically significant variables are: FAT, FATMAS, F2, SQJ. Multiple correlation coefficients (R) applied in the analysis range in the border od.444 to R.638. Also, the rate of change of direction with the ball (agility with the ball) have a statistically significant impact of the following variables: SBLVSL, SBRV20, F2, FAT, FATMAS, CMJL, MKRBNR. Multiple correlation coefficients (R) in applied analyzes move in the range of .546 to .710. Based on these results, we can say that the structure of training with players of this calendar age period, in order to improve the ability to change direction, ie agility, must be represented, which are aimed at reducing the amount of subcutaneous adipose tissue, development of perceptual abilities but also on the development of technical quality is the young players.

Key word:anthropolog, football, correlation

Introduction

Straight sprinting speed and agility are considered to be the most important features as in other sports as well as in football (Warren et al., 2001). Football is

characterized by a number of actions that require acceleration, top speed as well as agility (Kutlu et al., 2012). But football also characterized by a large number of actions that require a quick change of direction with and without the ball (Little

and Williams, 2005;). Agility is a synthesis of a large number of anthropological characteristics (Chandrasekaran et al., 2012). In support of this, and presented different definitions of agility. Agility is simply defined as the possibility of rapid and accurate directional changes (Baechle 1994, Draper and Lancaster 1985). In recent years, the agility is defined as the rapid movement of the whole body with a change in velocity or direction in response to the stimulus with the possibility that it is an open skill (Sheppard and Young, 2006). Agility allows football player to react to stimulus, starts quickly and efficiently, it is moving of the right direction and be prepared to change direction, and to quickly stop with a view to the execution of sports techniques (Milanovic et al., 2013, Jordan et al ., 2012). It is clear that these definitions comes respects and cognitive components of visual observation and making decisions that contribute to the manifestation of agility in the sport. There are in addition to the above of components involved acceleration, deceleration, change of direction in avoiding opponents, sprinting with change of direction with the aim of making contact with the ball, another player or the initiation of movement of the whole body as a reaction to a stimulus (Little and Williams, 2005; Jovanovic et al ., 2011).

Consequently, agility combines physical characteristics (physical qualities) and cognitive skills that are vital for successful performance of team sports (Bullock et al., 2012, Young et al., 2002). Agility is highly dependent on the coordination and control of movement. Accordingly, a large number of factors affecting the level of agility such as joint mobility, dynamic

balance, strength, flexibility, speed and the optimal biomechanical movement structure (Sporiš et al., 2010). Determining the relation of individual segments of the anthropological status of importance for the situation and competitive efficiency is of great importance because it may ultimately contribute to an adequate selection as well as the programming and control training (Blazevic and Malacko, 2007). Achieve better results of soccer requirements of modern approaches, concepts, patterns of activity in training technology with young soccer players, especially relating to the determination of their association with the situation and competitive efficiency (Doder et al., 2011).

Presented definitions of agility indicate a very large number of factors that affect the manifestation of agility with players. Since the age periods of the sample (14-16) suitable for agile development of young players, the objective of this study is to determine the influence of anthropological characteristics of the expression of agility players with and without the ball. Information obtained may contribute to adequate planning and developing those capabilities of which depends largely on the expression of agility young players. It should be emphasized that for the purposes of this Study konstruisani some of the tests for evaluating agility.

Methods

The sample

The sample for this study consisted of forty-five players aged 14-16 years, mean body height 167.96 ± 10.05 and an average body weight of 55.81 ± 10.79 . The main criterion for entry into the sample of

respondents was that the young players have spent at least twelve months in the training process in the same club. All the patients have undergone the standard physical examination. On the basis of the systematic review found that all respondents healthy and without significant abnormalities that could significantly affect the results of tests conducted. It should be emphasized that the respondents this study voluntarily. Before testing, primarily of parents of children and then by the administration of the club, we wins the approval for the implementation of diagnostic procedures.

The sample of variables

For the purposes of this research, a set of predictor and criterion variables. The system of independent / predictor variables constitutes a collection of fourteen variables.

Variables for assessment of body composition: FAT% - body fat PERCENTAGE, FATMASS - total weight loss of fat mass (kg, lb) in the body.

Variables for assessing cognitive abilities: F1 - a test of perceptual reasoning and possesses all relevant psychometric characteristics. In addition to measuring the speed of perception shape, it measures the speed rounding unit, the flexibility to draw on the material and perceptual ability manipulation of the perceptual space. The task consists of two groups of points, black with white veće grupe left and right side. The task is that among the points on the right side detects and identifies the group of points on the left side therein lies. Revealed a group of points respondent rounded pen and it must be identical to the default formation of the left, both in form

and number of points and in terms of spatial specificity. The test consists of 36 tasks, while taking the test time is limited to five minutes. F2 - has satisfactory psychometric characteristics of a measure perceptual speed and visualization which in itself includes a special ability with adaptive flexibility, speed rounding whole, fine differentiation and perceptual reasoning on the material. The resolution test is included, in addition to the perception of the figure, and manipulation to reorganize the given content. The test consists of eight seven p.m. tasks and time taking the test is limited to seven minutes. It should be emphasized that the applied tests for assessing perceptual abilities, applied in a number of studies that have dealt with similar issues. (Stojanovic et al., 2006; Bosnar and Matkovic, 1983; Bosnar and Gabriječić, 1983; Bosnar and Schneider, 1983).

The variables to estimate the explosive power: SJ - Squat Jump, CMJ - Counter Movement Jump, DJ - Drop Jump.

Variables for assessment of coordination: MKRBNR - drumming hands and feet (Kurelić et al., 1975).

Variables for assessment of situational-motor abilities: SBLVSL - Test dribbling slalom runs to the area with minimum dimensions 15x5 m Stands are postavljaju straight line. First stakal away from the starting line / finish line 1 no matter the distance between stands 2 meters At the sign of "now" subjects starting right on the first flag, bypasses and takes the ball to the other flag that goes around the left side. Respondent performed slalom managing to last zstavice that goes around and back up again taking the ball the same way. It

measures the time in tenths of seconds. SBRVPO - quick dribble by a semicircle. At the sign of "now" respondent takes the ball off the rim semicircle of radius 9.15 m, so you do not step on approach in semicircles nor foot, nor ball. When you pass the extended line length 2m on one side of the semicircle, is returned to the ball again after taking a semicircle, until you pass the finish line with a ball bounded by two flags width of 2m. It measures the time in tenths of seconds. SBRV20 - quick dribble to 20 meters from the start of the place. The area of 20 m has marked the starting line and finish line and also set up the cones at 3 m from the starting line. At the sign of "now" ispitanik dribbles the ball up quickly so

that in the space of 3 m once again make contact with the ball, and the next 17 yards at least three times makes contact with the ball and pass the finish line. It measures the time in tenths of seconds.

The system dependent / changing variables constitute a set of eight variables:

The variables for evaluating agility players without the ball: SP7-90 - Sprint with a change of direction after seven meters. Respondent strata between the lines and the finish line running three changes in the right direction kteranja and three changes in the left side at an angle of 90°. Distance between cones is seven meters (Figure 1). Time is measured in tenths of seconds.

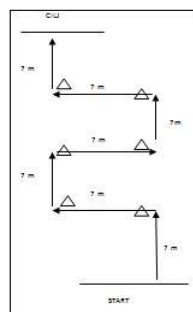


Figure 1

SP3-90 - Sprint with a change of direction after three meters. You examinees of the starting line and finish line running three promjenesmjera movement to the right and three changes to the left, at an angle of 90°. Athletes are detected during the test ranges on the same path as in the previous test (Figure 1), only now the distance between each cone is three meters. Time is measured in tenths of seconds.

arranged in a square and a distance three meters. Respondent true four changes, all in the right. Time is measured in tenths of seconds (Figure 2)

TRIMDES - sprinting with a change of direction after a three-meter-right side. Respondent to sign with moving satrtne lines and running around cones that are

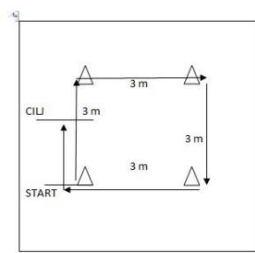


Figure 2

TRIMLIJ - sprinting with a change of direction after a three-meter-left side of the subject when the test is performed by moving the same path as in the previous test, only now the subject performed the test on the left side. Time is measured in tenths of seconds.

The variables for evaluating agility with players lotpom: applied the same tests as well as for evaluating agility players without the ball, only athletes are now doing tests with the ball.

Testing procedures

All tests were carried out in collaboration with the diagnostic center of the Faculty of Physical Education and Sports, University of Tuzla. Appliances that have been used for the purposes of these diagnostic procedures are: Body Composition Analyzer Tanita TBF-300A, Tokyo, Japan, anthropometry by Martin with measurement accuracy of 0.01 the appliance "optojump" Italian firms Mircogate. The measuring instrument to collect various data. Measurement inaccuracy is 1 millisecond (ms). Physical resources that have been used are: University Sports Hall, Hall of the Faculty of Physical Education and Sports, classrooms, faculty, facilities and Diagnostic Center, Faculty stadium campus of the University. Before the start of the test subjects were familiar with the project through a theoretical presentation

and demnstraciju. After that respondents have undergone heating protocol consisting of natural forms of movement (walking, running) - 5 min., Soccer aerobics exercises - 3 min., Specific exercises for the technique of adding in the movement - 3 min., Rectilinear dribble different contact surfaces - 3 min., and exercise techniques dribble with a change of direction - 3 min.

Statistical analysis

For the purposes of this study used regression analysis. It is very useful multivariate method that aims to determine the association between a set of independent / predictor variables and one dependent / criterion variable. Based on regression analysis can be performed to predict the criteria using the system of predictor variables. But how to avoid bulking predictor model, in the framework of the methods used regression analysis was used "backward" method of walking, which was established by "economical" prediction models. Backward method at the beginning of the selection of variables in the model includes all predictor variables, and thereby replace the criteria for entering variables in the model sets out the conditions for the release of variables from the model. The first criterion is the minimum value of F-ratio which a variable must satisfy in order to remain in the model and the other is the maximum significance criterion for exclusion, which

usually amounts to 0.1. In the further course of the algorithm observe those variables that have the smallest partial correlation coefficient with the criteria variable. Consequently, "backward" method are gradually excluded predictors that have a significant contribution to the prediction criteria. At the end of the obtained reduced predictor models, which means a smaller number of variables explain the impact of the criterion. To determine the reliability of the calculated two parameters: Krombahov inmdex variability (Cronbach's Alpha) and internal correlation coefficient for each test separately (ICC).

Results

Table 1 shows the results of applied regression analysis "backward" method. The table shows the results of regression analysis in the last iteration, when they finally obtained reduced predictor models, which means a smaller number of variables as well explain the common variance. Within the first four regression analysis criterion representing tests for evaluating agility footballers without the ball. Consequently in predictor system variables were not included variables for assessing situational-motor spsoobnosti. Within the other four (5-8) regression analysis criterion representing tests for evaluating agility players with the ball, and are therefore included in predictor system variables for assessing situational-motor spsoobnosti.

Results of the first four regression analysis uakzuju that significant predictors for evaluating agility players without the ball following variables: FAT, FATMAS, F2, SQJ. Multiple correlation coefficients (R)

applied in the analysis move in the border od.444 to R.638.

In regression analyzes in which the criterion for assessing the variables representing agility players with the ball, as significant predictors were allocated to the following variables: SBLVSL, SBRV20, F2, FAT, FATMAS, CMJL, MKRBNR. Multiple correlation coefficients (R) in applied analyzes move in the range of .546 to .710.

Table 1: Results of regression analysis primjenjnih anthropological characteristics of the expression of agility players with and without the ball

	r.b.	Criterion	Reliability of tests		Model Summary		ANOVA			Coefficients			
			ICC	α	R	R Square	Iteracija	F	Sig.		Beta	t	Sig.
Tests for evaluating agility bez lopte	1	SP790	.978	.978	.638	.407	9	14.392	.000	FAT	1.522	5.349	.000
										FATMASS	1.334	4.687	.000
	2	SP390	.912	.912	.468	.219	9	5.889	.006	F2	-.261	-1.902	.064
										SJ	-.422	-3.074	.004
	3	TRIMDES	.949	.949	.483	.234	9	6.403	.004	FAT	1.142	3.532	.001
										FATMASS	1.116	3.450	.001
	4	TRIMLIJ	.939	.939	.444	.197	9	5.149	.010	FAT	1.062	3.209	.003
										FATMASS	.963	2.907	.006
Tests for evaluating agility with the ball	5	SP790L	.993	.993	.681	.464	12	18.207	.000	SBLVSL	.580	5.036	.000
										SBRV20	.260	2.255	.029
	6	SP390L	.952	.952	.579	.335	12	10.563	.000	F2	-.237	-1.857	.070
										SBLVSL	.491	3.853	.000
	7	TRIMDESL	.994	.944	.710	.505	9	7.943	.000	FAT	.693	1.966	.056
										FATMASS	.807	2.334	.025
										CMJL	.289	1.960	.057
										MKRBNR	-.288	-2.050	.047
										SBLVSL	.429	3.095	.004
	8	TRIMLIJL	.903	.903	.546	.298	12	8.911	.001	MKRBNR	-.350	-2.683	.010
										SBRV20	.375	2.872	.006

Discussion

As we see from the results (Table 1), the most significant predictors of agility players without the ball are variables to estimate the percentage of subcutaneous fat and total fat in the body weight (in kg, lb). Wong et al., (2012) in his study found an association between BMI ($r = .57$), FTAMASS ($r = .41$) with speed changes of direction. In the second regression analysis as significant predictors were selected test for assessing perceptual speed and visualizations and test to evaluate combustible power (SJ). Explosive power is shown as a significant predictor in the prediction agility players without the ball. The reason probably lies in the fact that the higher the level of explosive strength conditioned small amount of adipose tissue in the body. Thus, MacDonald et al., (2013) found a high correlation between explosive power and the percentage of fat

in the body in volleyball ($r = .87$) and players ($r = .47$). SJ Test is a test for assessing explosive power-horizontanog type that we associate with good acceleration ability. Thus, in research that dealt with this issue, a significant link between the acceleration and maximum speed ($r = .62$) and the acceleration and agility ($r = .34$). Statistically significant effect on the individual criterion has a variable for assessing perceptual speed and visualization. Perceptivne skills are very important for good ability of anticipation. Some authors in their research found a strong association between mental concentration, prcepcije and anticipation with soccer tests $R = .94$ (McMorris and Graydon, 1996). Also, McMorris and Graydon (1997) found that the anticipation and perception significantly associated with typical ($R = .94$) and non-typical ($R = .79$) football situations. The results indicate

that the composition of the body associated with better players the ability to change the direction of movement without the ball. Some authors suggest that the increased amount of adipose tissue indicates programming training athletes in order to reduce body fat (fatmass), which should be first given to the structuring of training and eating habits (MacDonald et al., 2013, Wong et al., 2009).

We also see that the variables for estimating body composition proved to be significant predictors for agility players with the ball (criterion TRIDMESL). We can say that the increased percentage of subcutaneous tissue masnig emerges like ballast in the body and also the agility of players with and without the ball. Thus, Wong et al., (2009) found a high correlation between BMI and their fast running the ball ($r = .58$) and the ability to kicking the ball to score ($r = .54$). Test the speed of perception and visualization (F2) proved to be a significant predictor for agility players with the ball. From these results it was pathetic that zaključiti that agility players without the ball significantly depends on the perception of speed and logical reasoning. So Joksimovic et al., (2011) in their study

found a significant canonical correlation coefficient (Canonical R .61) between cognitive ability and precision when players and skiers. On the basis of these results it is clear that the test for assessing the realization of rhythmic structure-coordination in rhythm (MKRBNR) showed a significant predictor of agility players with the ball. Based on the above, we can conclude that it is important for agility anticipation, recognition of situations, visual scanning (visual scanning) Asto ultimately contributes to the timely assessment of change in Sierra movement (Young et al., 2002). Of course we see that a higher level of technical preparedness of players in this age certainly contributes to a better demonstration of agility players with the ball. Also Young et al., (2002) stating that all components affecting agility as an integral part of state and the technical quality of the player. All of the above leads to the fact that a player can possess a high level of agility but that field and game shows moderate agilnsot (Young & Farrow, 2006). This may be a low level of some of the other abilities that affect the expression of agility, eg weaker abilities in perception and decision-making.

Conclusion

In working with young footballers are very important information and establish relations between certain segments of the anthropological status and situational efficiency, because they can help more adequate selection of training content. The results of this study clearly indicate that these are elements of which depends greater agility new manifestation ie speed directional changes. Practice facilities

primarily need to be targeted in an aerobic zone with moderate intensity loads which will ultimately lead to samanjenja amount of subcutaneous fat. Also, for a faster change of direction with and without the ball having a major impact perceptual abilities. Accordingly, in training process should be represented facilities that are focused on the development of these skills: the game narrowed the field, plans, technical-tactical exercises with a limited

number of touch (1.2), various exercises on two doors (2:2, 3:3 +1, 4:2 +1), for possession of the ball game 4-4 in corridor, a game for possession of 5:5 to the increased space, etc. Implementation of these content of training in working with athletes of this calendar age period, we will influence the development of perceptual abilities and logical reasoning ability. It must be emphasized that the rate of change of direction of the ball is largely conditioned by the technical quality of the player. It refers to the fact that work on the technique requires special attention and it is certainly an integral part of the training process, a footballer. The reason is that

players must comply with the technical capability of running technique, which is a precondition for better stability, which is necessary when changing direction. Many abilities that affect the improvement of expression ie agility speed directional changes indicate the complexity of the problem. The only drawback of the studies would be constructed as tests that are "closed skill". In sealed exercises player knows in advance the path that moves and was therefore able to perform pre-planned movements. Accordingly gradient to conduct similar research but with constructed with tests that are "open skills"

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UTJECAJ ANTROPOLOŠKIH KARAKTERISTIKA NA ISPOLJAVANJE AGILNOSTI U NOGOMETU

Sažetak

Osnovni cilj ovog istraživanja jeste da se utvrdi utjecaj antropoloških karakteristika na brzinu promjene smjera kretanja nogometaša sa i bez lopte. Uzorak ispitanika za potrebe ovog istraživanja sačinjavalo je četrdeset i pet nogometaša uzrasta 14-16 godina, prosječne tjelesne visine $167,96 \pm 10,05$ i prosječne tjelesne težine $55,81 \pm 10,79$. Za utvrđivanje utjecaja preiktorskog skupa varijabli (antropološke karakteristike) na kriterijske varijable (testovi za procjenu agilnosti tj. brzine promjene smjera kretanja nogometaša sa i bez lopte), primjenjena je multipla regresiona analiza. Za utvrđivanje relijabilnosti testova koji su konstruisani za potrebe ovog istraživanja izračunata su dva parametra: Krombahov inmdex varijabilnosti (Cronbach's Alpha) kao i koeficijent interne korelacije za svaki test posebno (ICC). Dobijeni rezultati jasno ukazuju da na brzinu promjene smjera kretanja bez lopte statistički značajan utjecaj imaju varijable: FAT, FATMAS, F2, SQJ. Koeficijenti multiple korelacije (R) u primjenjenim analizama kreću se u granici od .444 do R.638. Također, na brzinu promjene smjera kretanja sa loptom (agilnost sa loptom) statistički značajan utjecaj imaju slijedeće varijable: SBLVSL, SBRV20, F2, FAT, FATMAS, CMJL, MKRBNR. Koeficijenti multiple korelacije (R) u primjenjenim analizama kreću se u granici od .546 do .710. Na osnovu dobijenih rezultata, možemo reći da u strukturi treninga kod nogometaša ovog uzrasnog perioda, kako bi se poboljšala sposobnost promjene smjera kretanja tj. agilnost, moraju biti zastupljeni koji su usmjereni na smanjenje količine potkožnog masnog tkiva, razvoj perceptivnih sposobnosti ali i na razvoj tehničkih kavaliteta mladog nogometaša.

Ključne riječi: antropologija, fudbal, korelacija.

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THE EMPLOYMENT STATUS OF ATHLETES IN SPORTS ORGANIZATIONS

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Original scientific paper

Abstract

Labour relations are regulated by the parent law, the Labour Act and specific regulations applicable in the domain of labour. Persons requiring the status of the employees in compliance with the regulations of each specific country expressing the will to accomplish personal, employment and functional relation with the employer, offer their status under specific conditions in the economic market with intention to get a new status enabling them to hold a single employment. Being an athlete or a preprofessional athlete represents categories and individual statuses that enable them to achieve a status of the employed athlete. There is an assumption, in accordance with the status and normativism, to offer employment status to athletes. This status holds a determined position and actions regulated by the highest legal acts of a certain country, by its laws as well as some international acts. Thus sport becomes a field offering new employment opportunities, with people who wish to employ their talents through professional engagement and earn for living as well as achieve the employment status. It is a relatively new dimension which opens new opportunities. Generally accepted regulations of the international law and confirmed international contracts make an integral part of the legal system of the countries arising from former Yugoslavia and have been permanently applied. Autonomous legal acts brought by the legal persons that are leaders in sport as a whole, elaborate certain provisions which have been neither adjusted to social reality nor updated. The above-mentioned facts as the so called "normative chaos" make disturbance in sport and cause diversified actions in the social domain known as support or driver of the modern society, in short – sport. Let us consider the position of an athlete – worker – employee from the perspective of employment in the Republic of Serbia.

Key words: *labour relation, athlete, professional athlete, working contract, rights and liabilities.*

Introduction

Labour relation is a consensual relationship between employer and employee with rights, obligations and responsibilities stipulated by the law, collective agreement or other legal document. The Labour Act is a general law according to its legal character applicable to all categories of employees and employers, unless a special law stipulates otherwise. Therefore, its integral, complete and direct application is meant in the working environments where there is no specific law. If there are specific laws, which bring thoughts closer to form one or more logical units of labor law character, its implementation is incomplete and subsidiary. It is incomplete, since there is no special, i.e. specific law, covering all the circumstances which we call labor law rights, obligations and responsibilities.

Subsidiary application is only in the states and status determinations where the special law does not regulate certain work related issues which is the case in the law governing the issues related to the athletes, the Sports Law⁵³ of the Republic of Serbia.

Sports Act, although by its nature in terms of labor law is a special law⁵⁴ and takes precedence over the Labor Law, is essentially a normative determination for the sport and its subjects, including athletes, so we will conditionally, for our convenience consider it as *lex generalis* in the new legal determination of an athlete. We must emphasize⁵⁵ that the Labour Act is

a parent law for all categories of employees in a complete legal system unless otherwise provided by law, and in this case it is.

It is necessary to consider other laws that determine the legal nature of the entity or determination of the subject of employment which is named and in the status of an employed party has the status position of the employee.

We should also point out certain work environments, where athletes can achieve their function, which do not have employment but do have other important status determination. These are institutions of public services. The importance of public service is interesting for us in terms of labor law, only as an employer and the definition of the concept of the working environment but not as the subject of employment of the athletes.

Namely, organizations of public service are established by the state, province, city or municipality in the fields of education, schooling, health, physical education and sport. Although they regulate the area of sport and athletes, a person in the sport has not been determined, nor has the legal possibility to formalize his employment status with the status position of the athlete, through the necessary publicity in the form of employment. Employment status of the athletes may be established only in a sports organization.

It is significant to note in this section that it would be timely in the spirit of the Olympics, gender equality and suspicion in any attempt of discriminatory views, that this paper considers, as well as in the Law on Sports, that any term related to position, profession, or occupation, is expressed in the grammatical masculine gender,

⁵³Law of sports ((Sports Act)("Official Gazette of RS", no. 24/2011 and 99/2011-dr. laws.))

⁵⁴*Lex specialis*.

assuming natural masculine and feminine gender of persons to whom they apply.

Subjects of employment in sport

Sports organization is, in terms of the provisions of the Law on sports, an organization which was established and has full capacity and publicity for the performance of sports activities.⁵⁶ Sports organizations can be set up as an association (hereinafter referred to as the sports association) or as a company, in accordance with the law, and the issues that are not regulated by the Law on sports, general rules on associations or companies shall be applied. So those are the working environments for the employment of athletes.

An athlete is a person engaged in sport activities, i.e. an amateur athlete is the athlete whose salary is not the goal of sports activities and who is not engaged in these activities as a profession while a professional athlete is an athlete who is engaged in sports activities as a sole or main occupation.⁵⁷ So the person who has the status of an athlete and the concomitant status position of professional athlete, meets the normative definition of the Law on sports to gain the status of an employee.

An employee is an individual who is voluntarily employed by the employer.⁵⁸ In order to gain the status of an employee in

the general labour regime, a person⁵⁹ needs to meet certain requirements: to be at least 15 years old and meets any other requirements to do certain jobs, determined by the law or by the regulation on the organization and sistematization of working positions.⁶⁰ This is stipulated by the Labour Act which determines the general condition and special conditions for employment. The general condition is the age and special requirements are left to autonomous acts of the organization to be determined. The previous law, apart from the age of 15 years who has a protective function and origin in biological, medical, psychological and sociological standards on a man, there was a general requirement of overall medical fitness⁶¹ that would be now and in this case particularly interesting from a theoretical point of view of labor law and morality as well as a measure which would once again warn about the need to protect the health of athletes.

Concerning this legal position we hold an opinion that any work without fulfilling the general conditions would be null and void, the same as it is stipulated by the law itself and would not produce work related effects. However, interesting and legally possible is the position of professor Ivosevic who points out that this situation although formally viable, thanks to the Institute of factual employment, changes its legal nature. An employee, after beginning his

⁵⁶Article 31 Law of sports ("Official Gazette of RS", no.24/2011 and 99/2011-dr. laws.)

⁵⁷ Ibid, Art. 3, paragraph 1. point 6-8.

⁵⁸Article 5st.1.Labour Law ("Official Gazette of RS", no. 24/05, 61/05, 54/09, 32/13)

⁵⁹ Vladan S. Perisic *Officialism and law officers*, Novi Sad, 2008th p.21-23rd.

⁶⁰ 24. Paragraph 1. Labour Law RS.

⁶¹Perišić, S. V., Avramović, N., Jelena Perišić, *Mens sana in corpore sano in modern sport*, Serbian Journal of Sports Sciences 2013, 7(3): str. 154.

work without fulfillment of the general condition, performs certain rights which last as long as the exercise of labor rights has been prevented. And even then it can not be disputed or as professor Ivošević says, "cancel" the previous actual exercise of labor rights. The nullity of such work or employment, can only act in the future, then the time of the actual work must be regarded as the period of holding and exercising the right of employment i.e. the period of the "possession of those rights." Interruption of this situation at the same time means the loss of all the rights which were available at the time of exercise.

The employment views

Law on Sport stipulates that athletes can engage in sports activities independently or within an organization in the field of sports, athletes can engage in sports activities as amateurs or professionals.⁶² Sports activities in accordance with the contract of sports activities of amateur athletes is considered work outside employment in accordance with the law.

The rights, duties and responsibilities of a professional athlete shall be regulated by law, sports rules of the competent national branch of sports associations, collective agreement, employment rules (when a collective agreement with the employer is not concluded) and the labor contract between the athletes and sports organizations. A special collective agreement is concluded between a representative trade union and the appropriate representative association in sport, in accordance with the Law on sports.

For us, a professional athlete strengthened by this provision of the Law on sport, gains the status of labor law subject and acquires, rights, obligations and responsibilities defined by the Law on Sports and the Law on Labour.

A contract of employment of athletes

According to the Law on sports the subject of the employment – an athlete i.e. a professional athlete, has certain rights and obligations on the basis of sporting rules, collective agreements⁶³ and a contract of employment or the rights, obligations and responsibilities of the professional athlete shall be regulated by law, sports rules of the competent national branch of sports association, collective agreement, employment rules (when a collective agreement with the employer is not concluded) and the labor contract between the athletes and sports organizations. A special collective agreement is concluded between a representative trade union and the appropriate representative association in sport, in accordance with the law.

According to the Law on sport his employment was placed in the field of contracts of employment which has labour determination and status of the contract of special kind - sui generis contract.

At the same time, the state through laws determines the contents of such contracts,

⁶²Art. 8 Labour Law RS

⁶³Collective agreements are the sources of law in radnopravnoj areas relating to employment conditions and labor relations as well as employees and employers ii interrelations their representatives, trade unions and employers' associations, ie. their representatives at all organizational levels. Task of building relationships in the liberal labor law sector weakens their role and let the primacy of the state.

rights, obligations and responsibilities giving a certain public law character to the employment. Although in the present legal system the state is not the employer of employees, except for the regime of labor relations in state bodies and public sector, where it determines the contents of its offer, as opposed to the general regime where principally and legally theoretically the employer and employee contract "work and wages for their work." Only general and theoretically.

Professional athlete is employed with a sports organization by signing a contract of employment for a specified time period not exceeding five years. After this period, the professional athlete may re-enter into a contract with the same or other sports organizations.⁶⁴ This provision has deviated from the rules of labor law to conclude a contract for an indefinite period as a rule. Employment for a certain time is an exception and is applied in cases of replacement of a temporarily absent employee until his return, and to perform tasks in time, no longer than 12 months. This is obviously provided to perform tasks that do not have a permanent character and all of the inability of athletes to be engaged in sports activities at the age which is fruitful in normal operating mode but in the sport has a considerable psychological, physical and motor shorter working span. Working abilities of athletes certainly could not be held to 65 years of life.

Downtime less than 30 days do not affect the length of the working relationship. Athletes and sports organizations in the contract referred to in paragraph 1 of this Article may make specific arrangements

giving one-time fee to athletes which do not have the character of earnings (Charge for the contract, compensation for the use of athletes' character).

Sports Act regulated the disruptions in the same manner as the labor law which says "The interruption of work is not considered downtime less than 30 working days." However, according to the Labour Law it is 30 working days and Law on sport 30 days. It's not the same.

Especially it is not the same thing as the Law on sports states that downtime less than 30 days does not affect the duration of employment, it is not legally relevant. It is longer. The longer period causes redundancy. It changes the essence of labor-law relations since it is interrupted. The legal question is whether the legislator wanted something special to set, and if so, why and what would it does differently from the parent Act. The essence and relations, would not be hurt with such determination but it's still different. We think that the difference is caused by technical and editorial errors or ignorance of the essence of labor law matters. As if they wanted it to look like a serious normative frame and then made it specific. We'll call it an error in the technical legal sense and propose to adapt it to the now "emergency and pro-European reform law" by the Labour Law, which was adopted by Serbia shall be applied just in time for the completion of this work that explains ita "earlier imperfectins". Even if it lacks these provisions there would be the same or even better rule of "30 working days" which would occur through subsidiary application of the provisions of the general regime because then the rule *lex specialis derogate legi generali* would not be true. Thus we

⁶⁴Art. 12, paragraph 1 and 2 Law of sports.

have the legal and actual dilemma of whether the legislature expressed its normative frame the way it wanted or it is this just evidence of the need for updating the provisions of the Law on sport.

Provision that athletes and sports organizations in the contract can agree on giving off fees to athletes which do not have a character of salary (remuneration on behalf of the contract, compensation for the use of the character of athlete, is not work, but the customary law related and as such will not be specifically commented on. It is good that it exists, certainly as an upgrade compared to the general regime, because in essence it increases the earnings of the employed athletes. It can be determined in the same way in case of the athlete who is not employed. There is also a view that it should be removed from the provisions of labor law character, because labor law relationship recognises only salary that is achieved instead of wages, in certain cases of absence from work. Such a fee could be determined as awards, contracting stimuli or bonus to the fixed amount of the earnings.

The employment contract will regulate working hours of the athlete. It is fundamentally different from employees in the general regime⁶⁵, reasonable and justifiable. It is regulated by the employment contract on the basis of an autonomous act of sports organizations and adapts to the regime of preparing or competition.

This is a good solution, working hours of the athlete does not have any essential element

of the content and quality in the performance of his work duties.

References to another employer

A legal provision that professional athletes⁶⁶ may be temporarily assigned to other sports organization, based on a written agreement of sports organizations where he was sent and sports organizations where he is employed, with the approval of a professional athlete⁶⁷ speaks of the need of economic nature of organization where athletes work and the right of the employer, if they are not necessary that these employees to be temporarily assigned to work with another employer. Here again we have a sketchy norm and it gives fewer rights to professional athletes than employees in general mode.

In fact, it leaves the possibility to an employer - sports organization to make an agreement with another organization about the period which is temporary according to the estimation of the contractor. It would be good that sports law defined temporary period, as in the general mode – one year. Provision that it can be more than a year will be eliminated by the paragraph 4 of Article 174 of the Labor Law, which contract with the new employer limits to a certain time and then paragraph 6 provides that after the expiry of this period, the employee returns to the former employer. The above solution places the professional athlete in a less favorable position than an employee in the general regime and since the interpretation of legal norms must not be let to the owners of the sports-profit

⁶⁵Mode where applicable registration law.

⁶⁶ Art.35. Regulations on the nomenclature of occupations and sports titles ("Official Gazette of RS", no. 30/99)

⁶⁷Art. 2 s. 6 Law of sport

organization, it would be advisable to interpret the standard norm as a desire of the creator of the norm to approximate the status of athletes as employees in the general mode⁶⁸. Such vagueness and ambiguity, to help professional athletes, will be solved by conditional application of rules for employee benefits, and will be classified in the same type of reasoning of general standards mode. The same is for temporality, since the standard set the maximum duration of one year. Also, as a precaution, this standard shall be classified in accordance with Article 10, paragraph 2 of the Law on sport, as discriminatory and direct application of the laws and eliminated as invalid.

Top athletes can be professionally engaged in sport activities in individual sports as freelance professional athletes, or entrepreneurs.⁶⁹ This provision of law is a typical example of self-employment in the sport and represents a precedent and the possibility of choice and freedom of operation. We think that it is premature for this level of social development and the structure of ownership in the sport. The future certainly offers perspective and it's certain to be a feature of rich and stable societies.

Conclusion

Reviewing the exposed forms of employment of athletes, with its breadth of the Olympic idea, the resolution of the European Ministers responsible for Sport, No. 5/84 "On employment in the sport," the highest legal act, laws, regulations and guidelines of National Sports Development

Strategy, and the fact that sport is a subject of Community law in an economic activity, we have an unambiguous point of view, that labor of athletes should be regulated by the general mode of operation, the Labour Law, with all existing forms of employment. At the same time it should allow a more flexible form of regulation of social rights of athletes. Laws regulating health and social security for athletes should give the opportunity for a privileged status, enabling them compulsory insurance in case of disability, age and other cases, since they are stable initiators of health status of the nation and wider social adhesion with all the essential elements and the remaining slogan "Sport for All".

⁶⁸*In favorem laboratoris*.

⁶⁹ Art. 13.st.1. Law of sport

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RADNO PRAVNI STATUS SPORTISTA U SPORTSKIM ORGANIZACIJAMA

Sažetak

Radni odnosi su uređeni matičnim zakonom, Zakonom o radu i posebnim zakonima koji se primenjuju u oblasti rada. Lica koja žele status zaposlenih u skladu sa propisima svake pojedinačne države izražavajući volju da ostvare ličnu, radnopravnu i funkcionalnu vezu sa poslodavcem, svoj status sa određenim uslovima, nude na tržištima ekonomskog karaktera i pretenduju na novi statusni položaj koji im omogućava jedini radni odnos. Sportista i profesionalni sportista su kategorije i statusi pojedinca koji im omogućavaju sticanje statusnog položaja zaposlenog sportiste. Znači, postoje pretpostavke u smislu statusa i normativnog određenja koje sportistima daju radnopravni statusni položaj. Isti ima determinisane položaje i radnje koji su uređeni najvišim pravnim aktom posmatrane države, zakonima ali i određenim međunarodnim dokumentima. Sport postaje poligon za nova zapošljavanja, ljudi žele da svoje talente uključe u profesionalni odnos i „zarađujući za život“ ostvare i radnopravni status. To je relativno nova dimenzija i otvara koncept novih mogućnosti. Opšteprihvaćena pravila međunarodnog prava i potvrđeni međunarodni ugovori sastavni su deo pravnog sistema eks Yu država i oni se takođe permanentno primenjuju. Autonomni akti pravnih lica koja su nosioci sporta kao celine razrađuju pojedine odredbe koji nisu dovoljno prilagođene društvenoj stvarnosti i upodobljene sa realnim okvirom. Sve to, kao „normativna ujdurma“ drma sport i stvara šarenolikost postupanja u društvenoj sferi koju zovemo-oslonac ili pokretac savremenog društva ili kratko - sport. Zato, osmotrimo sportistu-radnika-zaposlenog iz ugla rada u RS.

Ključne reči: sportista, radni odnos, ugovor o radu, zarada, prava i obaveze

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ANALYSIS OF STUDENTS' ATTITUDES ON HAVING A TENNIS SCHOOL

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Original scientific paper

Abstract:

A survey was conducted with the aim of determining students' interest in having a tennis school. The sample consisted of 66 students from grade 6. The case study presented in this paper is an analysis of the attitudes of students. The research problem is related to determining the attitudes of students and their parents about having a tennis school. The main objective of this study is the inclusion of a large number of school-age children, under the expert leadership, in conducting organized sports activities in the field of tennis to create a habit of playing sports, discover new talents, and promote the sport of tennis. The aim of the research is to determine whether there is enough interest in having a children's school of tennis. The target group consisted of ten (10) to eleven (11) year-olds, including all three grade 6 classes (3 classes) for a total of 66 students. The results show that there is a great interest among students of this school to attend a tennis school.

Keywords: Sports, tennis, games, health, recreation.

Introduction

Meeting different needs makes children complete, helps them to function harmoniously, to easily complete their schoolwork, which has a positive impact on health. Regular physical activity and play are important for the physical, mental, psychological, and social development. Good habits are developed early, and are of great importance for children in primary school education. Studies have shown that physically active children are more likely to remain active as adults. Playing tennis enhances the heart and lungs, supports fat

burning, improves coordination and balance, and has a positive effect on bone density. Although tennis can be played in pairs, and so develop teamwork and coordination, playing one-on-one (singles) provides a terrific aerobic workout. Little tennis players aged 7 and 12 years have superior cardiovascular endurance compared to their peers who are recreationally engaged in another sport. Oxygen consumption and its capacity decrease with age, however, when it comes to tennis players, this sport reduces the drop-down path that we associate with

aging. The mental and emotional benefits of tennis are also very important. In this sport you learn to be focused, which later transfers to other areas of life. On the field, you learn to think several moves ahead, to quickly adapt to changes, to assess the behavior of your opponent, and try various strategies on the way to victory. All of these skills will be useful regardless of the profession that you choose. Also, you can learn to be a humble winner and a gracious loser. You will improve your hand - eye coordination.

Research methodology

The sample

The sample on which the study was conducted included students from the Tušanj Primary School from Tuzla, 66 of them, aged 10-11 years (grade 6), of whom 36 girls and 30 boys.

The sample of variables

For the analysis of attitudes we used a questionnaire (Likert scale) with 5 questions (-I do not agree at all- I do not agree- I am not sure- I agree - I completely agree, which were related to students' attitudes toward having a tennis school.

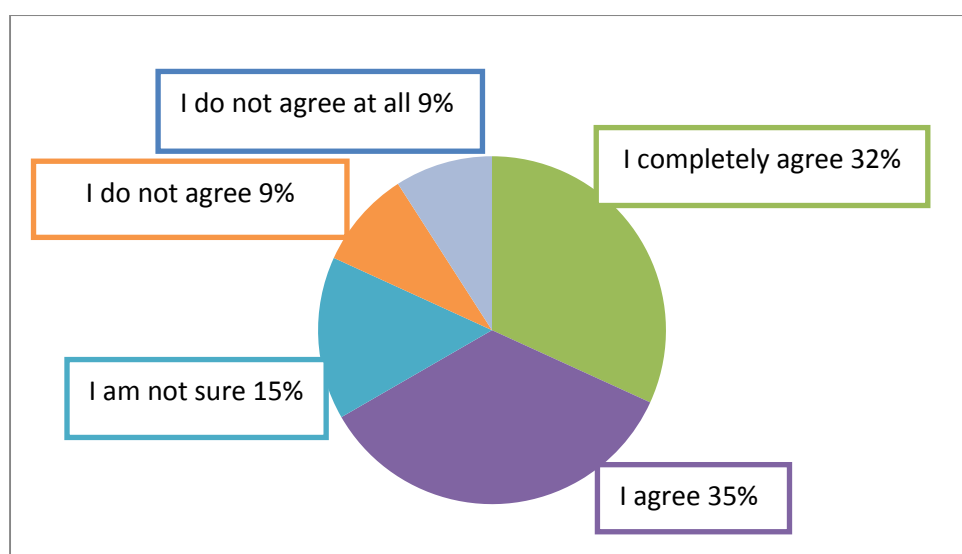
The data processing method

In this paper we used descriptive statistics, such as graphical methods, in order to detect patterns and descriptions of data sets, summarizing data and presenting them in an appropriate form. Also, in this study we used a survey by which we collected data pertaining to the opinion of respondents on having a tennis school.

Results and discussion

Based on the obtained results it can be concluded that the students replied to the questions that were related to sports, tennis, health, and leisure in order to obtain a clear interest in having a tennis school in the following way:

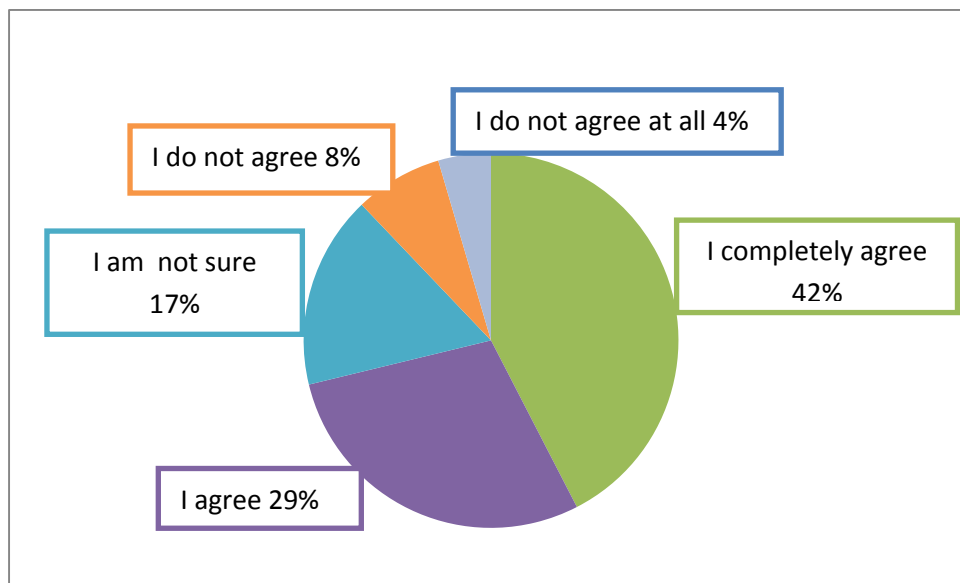
1. Do you agree that your time should be used more efficiently?



Based on the results obtained for the first question of the questionnaire we can conclude that most of the students agree that their time should be used more efficiently. In other words, they themselves are aware that the time they spend outside of school should be directed

in a "more efficient" direction. From the above chart we can see that 18% of the students of this school do not agree that their time should be used more efficiently, and so it is presumed that they may already be using their time more actively.

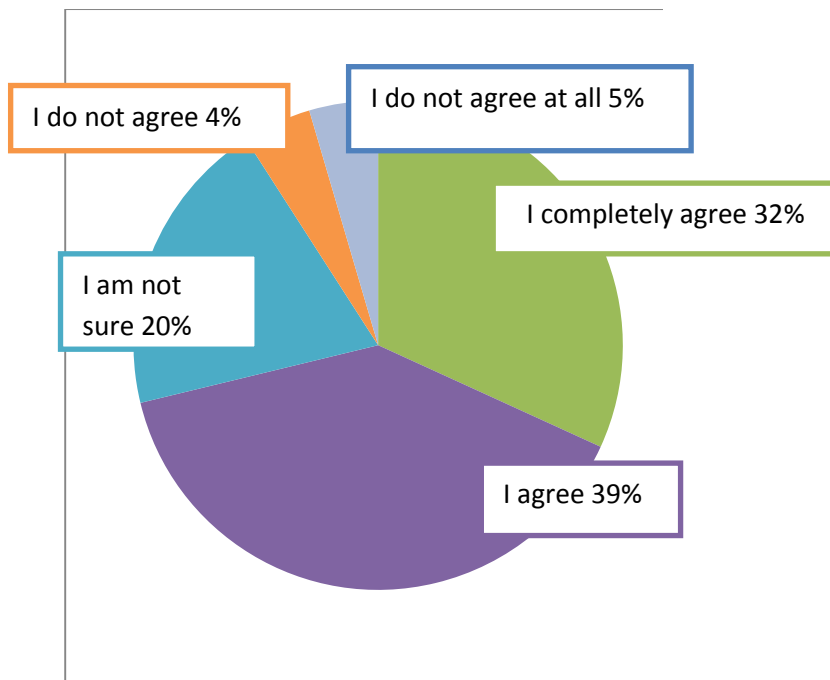
2. Do you agree that sports should be a part of your free time?



From the following question we can clearly see that the majority of students, 42% of them, completely agree that sports should be part of their daily routine, i.e., 71% of the students think so. While a small number of them, 12%, do not believe

that sports should be a part of their lives, so the assumption is that children are not sufficiently aware of the fact that their time outside of school should be filled with some sports activities.

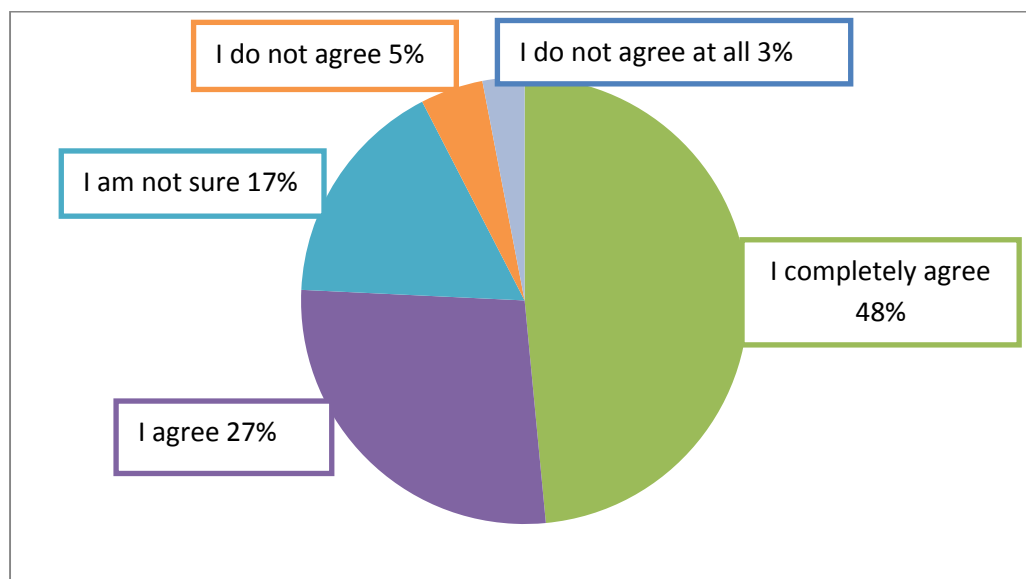
3. Do you agree that sports are important for your health?



When asked whether students think that sports are vital to their health we see that most of the students agree that this is important; as many as 71% agreed, while 9% disagreed. Again we have a group of students for whom we presume that they

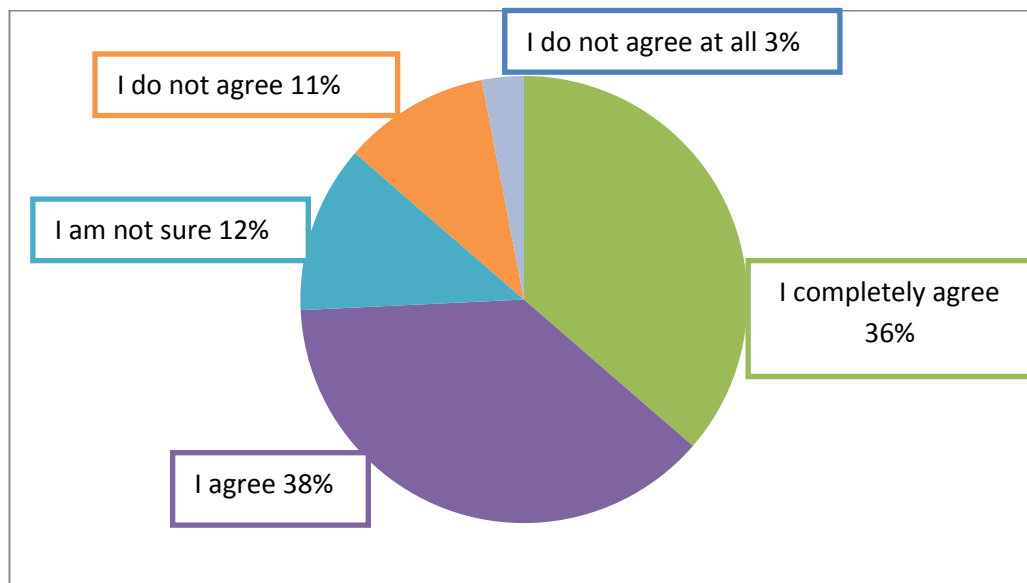
are not familiar enough with the importance of sports for their development and health.

4. Do you agree that tennis is an interesting sport?



The following graph shows that 48% of the students completely agree that tennis is an interesting sport, so we have 75% of students who agree that tennis is interesting, and 8% who do not. We assume that some students simply are not familiar with tennis as a sport.

5. Would you like to attend a tennis school?



In the end, our survey shows that 74% of students want to be part of this project, while 14% do not want it, so it is presumed that they may already be engaged in a sporting activity or just do not want to get involved in such activities.

interesting sport, and the fact that so far they have not had the opportunity to learn or play it.

Conclusion

Data analysis tells us that the children are aware that free time, time spent outside of school, should be used more efficiently, and that children should spend less time on the computer and playing video games. The responses to question 2 lead to a conclusion that most of the children agree that sports should be a part of their programmed activities. The analysis of the questions that the children answered showed that most students considered tennis to be interesting. The analysis of the data shows us the positive interest of students when it comes to having a tennis school. For these questions in the survey we can conclude that the positive responses to questions stem from the children viewing tennis as an

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ANALIZA STAVOVA UČENIKA O ODRŽAVANJU ŠKOLE TENISA

Sažetak

Istraživanje koje je sprovedeno, imalo je za cilj utvrditi interes učenika o održavanju škole tenisa. Uzorak ispitanika činilo je 66 učenika VI-ih razreda. Predmet istraživanja u ovom radu predstavljao je analizu stavova učenika. Problem istraživanja se odnosio na utvrđivanje stavova učenika i njihovih roditelja o održavanju škole tenisa. Osnovni cilj ovog istraživanja je uključivanje što većeg broja djece osnovnoškolskog uzrasta, pod stručnim rukovodstvom, u organizovano sprovedene sportske aktivnosti iz područja tenisa radi stvaranja navike za bavljenje sportom, otkrivanje novih talenata, te promovisanje sporta tenisa. Cilj istraživanja jeste utvrditi dali postoji interes djece o održavanju škole tenisa. Ciljna grupa su djeca od deset (10) do jedanaest (11) godina, i to sva odjeljenja VI-ih razreda (3 odjeljenja). Ukupno 66 učenika. Dobiveni rezultati nam ukazuju da postoji veliki interes učenika ove škole za održavanje škole tenisa.

Ključne riječi: Sport, tenis, igre, zdravlje, rekreacija.

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COMPARISONS OF THE MOTOR DIMENSIONS IN MULTIVARIATE SPACE, WITH YOUNG ATHLETES AND NONATHLETIC TREATED WITH EUROFIT TESTS

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Original scientific paper

Abstract

With the phenomenon named motor status among high school youth and athletes, have dealt a number of authors which from a different ways approached the phenomenon and have tried in different ways to explain it. The subject of this research in the paper represents the differences in motor space which appear among high school youths that deal with a particular sport or non-athletes. The sample of respondents for this study constitutes of 240 respondents, high school youth between the ages of 15 and 16 years (+ / - 6 months) males, divided into three subsamples of 80 respondents as follows: high school youths that deals with Judo, high school youth who are engaged in karate, and high school youth non-athletes. The measuring instruments for this study incorporate Euro fit battery of tests. The applied variables in this study were treated with standard descriptive procedures, with which were calculated the basic central and dispersion parameters. To test the normality and the distribution of the results were used: the coefficient of the curvature of the results (Skew), coefficient of extension of the results (Kurt) and Kolmogorov-Smirnoff method. Besides the basic statistical parameters also it was calculated the correlation coefficient (p). The determination of the possible differences between the treated groups (judo athletes, karate athletes and non-athletes) in the manifested space was conducted by univariate and multivariate analysis of variance (ANOVA MANOVA).

Key words: judo athletes, karate athletes, non-athletes, differences

Introduction

Sport, especially the supreme around the world and in our country tends to have faster development: improving the readiness of the athletes, constant monitoring, changing the terms of the training workout and refining its methods and means, introducing new rules, technologies, equipment etc. The process of achieving supreme sports results is more and more based on scientific research methods and, on the one hand by detecting and identifying the factors that determine success in sports and on the other hand, determining the effect of sport on personality structure. Objective guarantee in achieving supreme sports results can only give a maximum adjustment between the sport and the personality factor, as well as finding measurement instruments with whom the level of development of these factors can be objectively detected. This is especially important because, "The value of research papers in the field of sports consist primarily in finding and determining the most economical and most effective factors that are important for achieving supreme sports results, revealing the structure of personality and finding appropriate measuring instruments " Malacko (1971). The special treatments that are conducted in karate and judo athletes within the training process always pursue the formation of anthropological dimensions that are relevant to the realization of highly specific sporting activities that lead to successful high-performance sports quality. The intent of the desired changes, or bringing in optimal balance of all relevant anthropological characteristics required to perform certain special actions are performing throughout situational training exercise series. To achieve that kind of work requires a lot of relevant information so that the process can be successful. In the process of training because of the innovative work requires the application of scientific methodology to

determine the developmental characteristics of the anthropological characteristics and their relationships through the use of effective methods and organizational forms, with appropriate intensity and range of loads and proper selection of motor exercises. Various sports and martial arts are involved in the complex process of developing the human being, and there are in a state matter which whit its content, philosophy, principles and methodology of performance, act as the physical and mental development of the human (physical state, coordination, motivation, self-determination, etc.) (Slizhik, 2005). The identification of the motor structure is a prerequisite for the development of the transformation processes in kinesiology and sport (Katikj, 2003)

Work method

The sample of respondents for this study consists of a high school youth aged 15 to 16 years (+ / - 6 months) males, divided into three subsamples of 80 respondents including: high school youth that deals with Judo sport, high school youth which deals with karate and high school youth non-athletes or high school students who regularly attend classes in physical education at school.

Research subject in this paper represents the motor dimensions with high school youth who are engaged in certain sports and non-athletes. The main goal of the research is to determine the differences in motor space which appears in high school youth who are engaged in sports and non-athletes.

Measuring instruments for this study consists of Eurofit tests battery as follows: Flamingo balance test (MFTP1), Taping with hand (MTAP), Reach in a sitting position (MDSP), Long jump from place (MSDM), Palm Grip (MSTD), Lying-sitting (MLES), endurance in pull-ups (MIZG), Running here and there-10 × 5 m (MT10_5M). The object and purpose of the study and also the characteristics and size of the sample determined the basic methods for processing the data that were used in this study. The data obtained from the measurements were processed using the program systems univariate and multivariate analysis of the data. Analyses were processed in the program Statistica for Windows 10.0 and program package IBM SPSS Statistics for Windows 20, and also were used some other appropriate programs.

Variables applied in this study were treated with standard descriptive procedures, which were calculated basic central and dispersion parameters and the function of their distribution was determined and the basic parameters of the function of the examined spaces: minimum values of results (Min), maximum values of results (Max), arithmetic mean (Mean), standard deviation (Sd). To test the normality of the distribution of the results were used: the coefficient of curvature results (Skew), coefficient of extension of the results (Kurt) and Kolmogorov - Smirnov method. For determination of the possible differences between the treated groups (Judo athletes, karate athletes and non-athletes) in the manifest space were applied: univariate method ANOVA and multivariate method MANOVA.

Results and discussion

The results presented in Table no. 1 are for the three groups of respondents, analyzed with multivariate analysis of variance (MANOVA) of the motor tests according to Eurofit battery of tests. From the results analysis it can be concluded that there are inter-group differences in the examined space. Based on the results of Wilk's Lambda which is = .188, along with Rao's R-approximation = 29.176 and the degree of freedom $df_1 = 24$ and $df_2 = 896$ give significance to the differences $Q = .00$ ($p\text{-level} = 0.00$) on all of the analyzed space.

Table no. 1 Analysis of variance (ANOVA) and multivariate analysis of variance (MANOVA) in the three groups of subjects

Wilks'					
	Lambda	Rao's R	df 1	df 2	p-level
1	,188	29,176	24	896	0,00

	Meansqr	Meansqr	F(df1,2)	
	Effect	Error	3,316	p-level
MFTP1	1136,088	157,976	7,191	,000
MTAP	97,747	2,036	48,009	,000
MDSP	1424,987	20,612	69,133	,000
MSDM	3679,386	226,409	16,251	,000
MSTD	3924,271	137,087	28,626	,000
MLES	520,521	10,671	48,778	,000
MIZG	3164,744	159,199	19,879	,000
MT10_5M	327,114	2,038	160,528	,000

By applying univariate analysis of variance (ANOVA), it can be observed statistically significant difference among the three groups of respondents in all the variables from Eurofit battery of tests, with the significance level of $p\text{-level} = .00$. Because with the analysis of variance is not possible to reliably confirm the contribution of individual variables in the overall level of difference, which could be determined by a series of t -tests, with which would be analyzed the differences of all possible pairs of the arithmetic mean, which in other hand can lead to accumulation of a large number of errors. Because of these facts in the further analysis will be used LSD test with Post-hock analysis, it could be determined the individual contribution of each variable.

The Table no. 2 shows the results of intergroup differences among the three groups of participants in the variable 'Flamingo balance test' (MFTP1), with the LSD test (Post-hock), it was determined that there are statistically significant differences in: the first group (judo athletes) with the second group (karate athletes) at the level of $p = .00$, and in the third group (non-athletes) at the level of $p = .00$. The second group (karate athletes) with the third group (non-athletes) at the level of $p = .00$. The values of the results are in favor of judo athletes than karate athletes and lowest values are for non-athletes. These are the expected results due to the fact that balance as motor skill is present in the part of the training in judo and in karate. By analyzing

Table no. 2 LSD test for variable MFTP1

	{1}	{2}	{3}
{1}	11,45	10,65	9,69
{2}		,00	,00
{3}		,00	,00
	,000	,00	

Table no. 3 where are shown the results of the intergroup differences among the three groups of participants in the variable 'Taping with hand' (MTAP), with the LSD test (Post-hock), it could be determined that there are statistically significant differences in: the second group (karate athletes) with the third group (non-athletes) at the level of $p = .04$, while with the other groups there aren't any statistical significant differences. One of the specifics of the training in karate athletes is the performance of quick explosive segment movements of the upper limbs, which is probably the reason for karate athletes to have the best results in this variable compared to the other two groups.

Table no. 3 LSD test for variable MTAP

	{1}	{2}	{3}
{1}	39,76	40,83	36,70
{2}		,59	,12
{3}		,59	,04
	,12	,04	

Table no. 4 LSD test for variable MDSP

	{1}	{2}	{3}
{1}	25,65	27,53	32,59
{2}		,01	,00
{3}		,01	,00
	,00	,00	

Analyzing Table no. 4 or the differences of the intergroup differences among the three groups of respondents in the variable 'Reach in a sitting position' (MDSP), with the LSD test (Post-hock), were determined statistically significant differences in: the first group (judo athletes) with the second group (karate athletes) at the level of $p = ,01$, with the third group (non-athletes) at the level of $p = ,00$.

The second group (karate athletes) with the third group (non-athletes) at the level of $p = ,00$. In this case the likelihood of such results is the cause of the regular training process of judo and karate athletes, where during the training attention is paying to the flexibility and mobility of the whole body, and also on the back muscle Lode and the trunk benders.

Table. 5 LSD test for variable MSDM

	{1}	{2}	{3}
	220,66	212,51	214,35
{1}		,00	,01
{2}	,00		,44
{3}	,01	,44	

The results of intergroup differences among the three groups of respondents in the variable 'Long jump of place' (MSDM), with the LSD test (Post-hock) are shown in Table no. 5, and it was determined that there are statistically significant differences in the first group (judo athletes) with the second group (karate athletes) at the level of $p = ,00$, with the third group (non-athletes) at the level of $p = ,01$, while the second group (karate athletes) there is no statistically significant difference with the third group (non-athletes).

If you look at Table no. 6 which shows the results of intergroup differences among the three groups of participants in the variable 'Grip on palm' (MSTD), with the LSD test (Post-hock), statistically significant differences were seen in: first group (judo athletes) with the second group (karate athletes) at the level of $p = ,$ and the second group (karate athletes) with the third group (non-athletes) at the level of $p = ,00$. Thus obtained values of the test grip on palm, are surprising because the values are in favor of non-athletes. This phenomenon is surprising because in both judo athletes and karate athletes the palm grip is quite often expressed during the training workout

Table no. 6 LSD test for variable MSTD

	{1}	{2}	{3}
	86,87	80,19	88,87
{1}		,00	,28
{2}	,00		,00
{3}	,28	,00	

Possible explanation is if in the sample of respondents non-athletes are prevailing respondents that are coming from rural environments (for which we have no clear picture) active in domestic duties and obligations of agriculture, and from that part to get higher scores on the variable 'Grip on palm'.

According to the analysis of Table no. 7 which shows the results of intergroup differences among the three groups of respondents in the variable "lying-sitting" (MLES), with the LSD test (Post-hock), it can be concluded that there are statistically significant differences in the first group (judo athletes) with the third group (non-athletes) at the level of $p = ,00$.

Table no. 7 LSD test for variable MLES

	{1}	{2}	{3}
{1}	25,61	24,89	27,90
{2}		,16	,00
{3}		,16	,00
		,00	,00

The second group (karate athletes) with the third group (non-athletes) at the level of $p = ,00$, and between the first two groups there are no statistically significant differences. In this case the likelihood of such results is the cause of the regular training process of judo and karate athletes, where during the training attention is paying to the quality of the abdominal muscle groups.

Table no. 8 LSD test for variable MIZG

	{1}	{2}	{3}
{1}	55,69	48,54	53,44
{2}		,00	,26
{3}		,00	,01
		,26	,01

The displayed results in Table no. 8 of intergroup differences among the three groups of respondents in the variable “endurance in pull-ups” (MIZG), with the LSD test (Post-hock), was noted that there are statistically significant differences in: first group

(judo athletes) with the second group (karate athletes) at the level of $p = ,00$. The second group (karate athletes) with the third group (non-athletes) at the level of $p = ,01$, while statistically significant differences were not observed between the first group judo athletes and non-athletes.

In Table no. 9 are shown the results of intergroup differences among the three groups of respondents in variable Running here-there 10×5 m (MT10_5M), with the LSD test (Post-hock), and it was determined that there are statistically significant differences among all three groups of respondents.

Table no. 9 LSD test for variable MT10_5M

	{1}	{2}	{3}
{1}	20,88	19,78	17,62
{2}		,00	0,00
{3}		,00	,00
		0,00	,00

Conclude

A survey was conducted on a sample of 240 respondents, divided into three subsamples of 80 respondents at the age of 15 to 16 years (+ / - 6 months) males. The research subject in this paper represents the motor dimensions with high school youth who are engaged in certain sports and non-athletes.

The main goal of the research is to determine the differences in motor space which are appearing in high school youth who are engaged in sports and non-athletes. Measuring instruments for this study consist of Eurofit battery of tests. By applying the univariate (ANOVA) and multivariate method (MANOVA), the differences are defined between the treated groups (judo, karate athletes and non-athletes) in the manifest. By applying the univariate analysis of variance (ANOVA), statistically significant difference were determined among the three groups of respondents in all of the variables from the Eurofit battery of tests, at the level of significance $p\text{-level} = .00$. By applying LSD test with Post-hock analysis, in most cases were determined the differences in favor of

athletes subsamples in opposite of non-athletes. Pronounced differences are found among the variables for the assessment of 'balance', 'frequency of the upper limb', 'flexibility', 'explosive force of the trunk' 'static strength of upper limbs' and with the test 'Running here and there-' 10×5 m (MT10_5M). A difference was established with values in favor of non-athletes in the variable 'Grip on palm'. Probably this results was obtained if in the sample of respondents non-athletes are prevailing respondents that are coming from rural environments (for which we have no clear picture) active in domestic duties and obligations of agriculture, and from that part to get higher scores on the variable 'Grip on palm'.

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USPOREDBE MOTORIČKIH DIMENZIJA MULTIVARIJANTNIH PROSTORA MLADIH SPORTAŠA I NONATHLETIC LIJEČENH ISPITIVANJEM EUROFITOM

Sažetak

Fenomen nazvan statusom motorike među srednjoškolskom omladinom i sportašima, bavio se veliki broj autora koji iz različitih načina prilazio i fenomen su pokušali na razne načine da ga objasne. Predmet ovog istraživanja u radu predstavlja razlike u motornom prostoru koji se pojavljuju među srednjoškolcima mladima koji se bave određenim sportom ili nesportisti. Uzorak ispitanika u ovom istraživanju predstavlja 240 ispitanika, srednja škola za mlade dobi od 15 i 16 godina (+ / - 6 mjeseci) muškog spola, podijeljenih u tri od 80 ispitanika poduzorke kako slijedi: srednjoškolci louths da se bavi džudo, mlade iz srednjih škola koji su angažirani u karateu, a visoka škola mladost nesportista. Mjerni instrumenti za ove studije uključuju Euro fit baterija testova. Primijenjene varijable u ovoj studiji su tretirane sa standardnim procedurama opisnim, s kojima su izračunati osnovne središnje i disperzione parametre. Za testiranje normalnost i distribucija rezultata korišteni su: koeficijent zakrivljenosti rezultata (Skew), koeficijent proširenja rezultata (Kurt) i Kolmogorov-Smirnoff metod. Pored osnovnih statističkih parametara također je izračunat koeficijent korelacije (p). Određivanje mogućih razlika između tretiranih grupa (džudista, karate sportaša i nesportista) u prostoru manifestne je urađena univarijabilnom i analizama varijance (ANOVA) Manova.

Ključne riječi: džudisti, karatist, ne-sportaš, razlike.

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INFLUENCE OF CUTTING BODY WEIGHT TO ATHLETE STRENGTH BY USING DIFFERENT TYPES OF DIETING

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Original scientific paper

Abstract

Despite the effort that was made in every combat sport, there are numerous studies which shown that a large number of athletes significantly reduce their body weight a few days before the competitions in an attempt to gain an advantage against lighter, smaller, and weaker opponents. But the right choice of weight reduction, often preach by coaches is to cut weight before final events, through the preparation process using properly based dieting. The aims of this study were two-fold (i) to emphasize the importance of proper weight loss dieting, (ii) to show differences in squat movement while dieting in two different approaches. Ten athletes from Free Fighters Gym, MMA club were analyzed. All samples were dieting on both nutrition plans carbohydrate cycling (CHC) and low carbohydrate intake (LCH). After two weeks of every diet, they were performing the compound movement, squat in three replications. Wilks Coefficient was used as an ultimate formula very often in evaluating the strength in sport, a coefficient that can be used to measure the strength of a weight lifter against other weight lifters, despite the different weights of the athletes. It can be concluded that Wilks coefficient decreased, but not in accordance with authors expectations. The assumptions that glycogen storage in liver will not be enough during low carbohydrate intake was not confirmed in this study. There were even individuals like number 8 that had better results on a smaller carbohydrate intake. It can be explained by the role of genetics or response of the body that could give higher results when less insulin is excreted and when levels of this hormone were stable in accordance with Hofmann, 2014. Part of genetic, environment presented through training and interaction between genetics and environment should be reconsidered and estimated in this kind of researches.

Keywords: *carbohydrate cycling, low carbohydrate intake, strength.*

Introduction

Mixed Martial Arts (MMA) had a tremendous expansion over the last years with an increase in the number of practitioners on all levels as well as followers and spectators. It is often referred to as the world's fastest growing

sport and there are positive examples of growth everywhere around the Globe. MMA has in terms of following the popular websites receive more than a million visitors a month, and the sport is also very popular on TV.

Modern mixed martial arts is a sport that has similarities with Pankration due to the combination of techniques. The core of MMA consists of boxing, as well as kick boxing and muaythai (Thai boxing), wrestling (free style and Greco-Roman), grappling (Brazilian jiu-jitsu) and judo. Although Pankration was significantly different from MMA in the sense that the ancient sport largely lacked rules, the athletic challenge that comes from combining a wide range of techniques spurs just as much interest today as it did in ancient times. But the most important fact of this sport for manuscript is implementation of weight training into preparations of athletes.

The athletes in this sport are sorted in weight classes, as in judo, wrestling or other combat sports. The purpose of the classification is to ensure equitable matches in strength, agility and leverage (Artioli et al., 2010). Despite this effort that was made in every sport, there are numerous studies which shown that a large number of athletes significantly reduce their body weight a few days before the competitions in an attempt to gain an advantage against lighter, smaller, and weaker opponents (Kiningham et al., 2011). These athletes are determined to achieve their goals and will do everything needed, including often combinations of potentially harmful weight loss methods such as severe restriction of food and fluid intake, exercising in rubber or plastic suits, using saunas, taking diet pills and even vomiting (Woods et al., 1988). Throughout a season, these athletes regularly participate in many competitions and are, therefore, causing their body weight to fluctuate. It can be very dangerous and often fatal because of great differences in micro/macro nutrients intake, frequently combined with diuretics, water manipulation and reduction of sodium and potassium. The fact that in MMA weight-in is a day earlier before the match gives athletes even more

opportunities to cut more weight. But the right choice of weight reduction, often preached by coaches is to cut weight before final events, through the preparation process using properly based dieting. In modern sport, there are numerous kinds of dieting (de Bruinet al., 2007). Most of the modern diets are based on sets of multidisciplinary researches, mostly nutritional, medicinal and genetical facts.

In this manuscript two diets will be considered: carbohydrate cycling (CHC) and low carbohydrate intake (LCH). Differences in strength of the athletes will be shown when they are cutting weight on different diet plans. Both of these diet plans have been very explored and confirmed their significance by the American Nutrition Association and some facts were published by Brehm et al., 2003. There are a lot of researches conducted to treat the obesity (Kastratović et al., 2013) and dieting as one of them.

One of the main compound lifts in weight preparation of every athlete is squat movement. It can be performed in many different ways, but for this research it was chosen that conventional low bar style will be executed.

The aims of this study were two-fold (i) to emphasize the importance of proper weight loss dieting, (ii) to show differences in squat movement while dieting in two different approaches.

Material and Methods

Samples

Ten athletes from Free Fighters Gym, MMA club were analyzed. All samples were dieting on both nutrition plans as already mentioned carbohydrate cycling (CHC) and low carbohydrate intake (LCH). After two weeks of every diet, they were performing the compound movement, squat in three

replications. Only average values will be shown. Between two diets, there was a pause for three weeks to refeed and achieve the previous weight and strength so the first diet influence was neutralized. All athletes were in the range 17-19 years old. Health markers from blood samples were analyzed before each dieting. Athletes used basic supplementation during this research 5 g of creatin monohydrate, a nitrogenous organic acid that occurs naturally in vertebrates and helps to supply energy to all cells in the body, primary muscle by increasing the formation of adenosine triphosphate (ATP), synergy of zinc 50 mg and vitamin C in range up to 2 g per day, to improve antioxidant protection of athletes and to maintain general health. Athletes were primed with 4 g of cinnamon daily for 15 days to improve insulin sensitivity before dieting in accordance with Anderson, 2008.

Nutrition

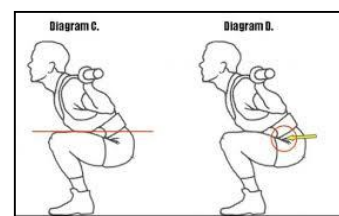
While dieting athletes were all using the same food and following the instructions of nutritionist. Protein intake during CHC was stable $1.5 \text{ g}\cdot\text{kg}^{-1}$ of athletes body mass (bm). Protein sources used were: chicken breast, eggs, cottage cheese and beef meat. Only protein from animal sources were counted because of the incomplete amino acid profile of proteins that origin from plants (Mladenov et al., 2012). Fats were up to $0.5 \text{ g}\cdot\text{kg}^{-1}$ of bm, mainly added from olive oil. The carbohydrate intake was based on white rice and oat meal. The carbohydrate rotation by days in week was 150-100-0-100-150-0-200. Food with high carbohydrate content has been used and for checking of nutritional values website <http://nutritiondata.self.com/> served well.

Protein intake during LCH was stable $2.0 \text{ g}\cdot\text{kg}^{-1}$ of bm of athletes mass. Fats were up to $1.0 \text{ g}\cdot\text{kg}^{-1}$ of bm and the carbohydrate intake

was stable $100 \text{ g}\cdot\text{kg}^{-1}$ of bm. All sources of macro nutrients were as same like in the previous CHC nutrition plan.

Compound movement and statistics used

For evaluation of strength in weight lifting different compound movement can be used, but in this research only squat was analyzed. The decision was made that this lift be performed after analyzing all athletes technique. The squat attempts were accepted when the imaginary line of the hips pass the parallel (Picture 1).



Picture 1: Representing proper squat attempt

Source: http://westcoastsc.com/wp-content/uploads/2011/07/squat_depth_image-550x341.jpg

To make the manuscript scientific squat attempts were not shown in kilograms. Wilks Coefficient was used as an ultimate formula very often in evaluating the strength in sport. The Wilks Coefficient or *Wilks Formula* is a coefficient that can be used to measure the strength of a weight lifter against other weight lifters, despite the different weights of the athletes. It presents calculation based on one repetition max.

$$Coeff = \frac{500}{a + bx + cx^2 + dx^3 + ex^4 + fx^5}$$

where the other unknown are:

x is the body weight of the lifter in kilograms

Coefficients for men are:

a=-216.0475144

b=16.2606339

c=-0.002388645

$d=-0.00113732$

$e=7.01863E-06$

$f=-1.291E-08$

and for every athlete it was calculated in mentioned way.

Results and Discussion

It was hardly predictable what the results will be, especially if we consider the fact that even in CHC there are days with lower carbohydrate intake and it is common sense that during those day lifts should be lighter. Basically, it was assumed that if the glycogen storage in liver was full lifts should not be shown any difference if the training duration do not exceed two hours (Burke et al., 1993). Initial facts were that with both diets *de novo* lipogenesis will be circumvented. If the carbohydrate intake always was on the limit to reefed the glycogen storage in liver and provide the energy, but not to commence lipogenesis explained by Acheson et al. (1988) it will be possible to set an experiment like this. All assumptions were in accordance with Hellerstein (1999). Strength of athletes was evaluated and shown (Table 1), as already mentioned, through the calculation of Wilks coefficient (Wc) to avoid differences in categories same as many before (Engstrom et al., 2011; Donatelli et al., 2000).

Table 1: Wilks coefficient (Wc) in athletes across two type of dieting, carbohydrate cycling (CHC) and low carbohydrate intake (LCH).

N _o	Wc (CHC)	Wc (LCH)
1	83,7	82,9
2	97,8	97,5
3	96,5	95,8
4	93,2	90,2
5	81,6	77,5
6	79,5	71,5

7	91,6	91,3
8	78,1	80,2
9	95,6	94,8
10	92,5	92,5

It was expected that some difference will be noticed, especially due to the fact that during CHC lifting were performed on a day with 200 g of carbohydrates.

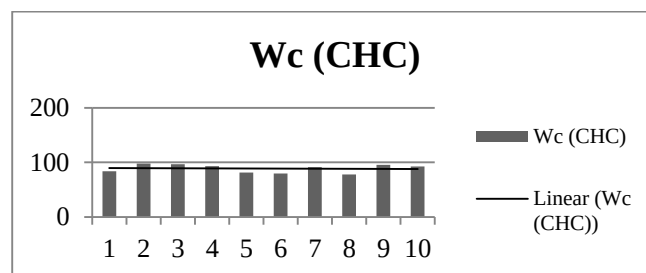


Figure 1: Wilks coefficient (Wc) in athletes during carbohydrate cycling (CHC).

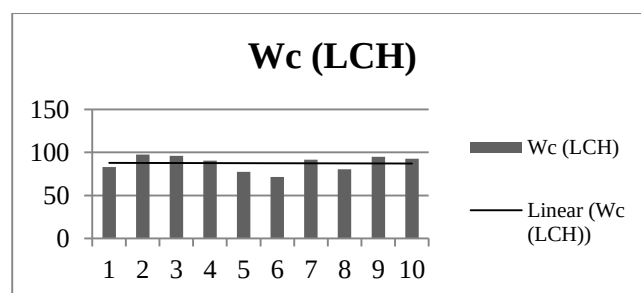


Figure 2: Wilks coefficient (Wc) in athletes during low carbohydrate intake (LCH).

The assumptions that glycogen storage in the liver will not be enough during low carbohydrate intake was not confirmed in this study. There were even individuals like number 8 (Figure 1 and 2) that had better results on a smaller carbohydrate intake. It can be explained by the role of genetics or response of the body that could give higher results when less insulin is excreted and when levels of this hormone were stable in accordance with Hofmann, 2014. One of the individuals, number 10 shows exactly the same results during both nutrition plans. The results of other eight individuals were in

accordance with the authors expectations because if the carbohydrate intake on lifting day. In repetitions there was a slight difference in individuals who took oat meal instead of white rice in term of decreased one of the repetitions (data not shown). It could be explained by the fact that they response better on higher insulin peak and via versa due to a difference in glicemic index of particular carbohydrate (Foster-Powell et al., 2002).

Conclusion

There are different conclusions to be made on a results like this, did body react to a different diet or not? How big is the genetical role, including will of athletes in this research. Part of genetic, environment presented through training and interaction between genetics and environment should be reconsidered and estimated in this kind of researches. It can be concluded that Wilks coefficient decreased, but not in accordance with authors expectations.

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UTICAJ SKIDANJA TEŽINE KORIŠĆENJEM RAZLIČITIH DIJETA U BORILAČKOM SPORTU

Sažetak

Uprkos naporima koji se ulažu u svakom borilačkom sportu, niz studija je pokazao da ogroman broj sportaša značajno spušta kilažu nekoliko dana prije takmičenja ne bi li sudjelovalo u nižim kategorijama gdje su protivnici lakši, manji i slabiji. Ali zapravo pravi način skidanja kilaže, često propovijedan od strane trenera, je pravilna dijeta. Ciljevi ove studije bili su dvojaki, da se istakne važnost pravilnog spuštanja kilograma u borilačkim vještinama i pokazati razliku u snazi dok natjecatelji drže dve različite dijetete. Deset sportista iz MMA kluba „Free Fighter Gym“ su analizirani. Svi su se pridržavali dva plana ishrane: rotacije ugljikohidrata i niskog unosa ugljikohidrata. Nakon što su u dijeti bili dva tjedna izvodili su kompleksni pokret, čučanj u tri ponavljanja. Wilksov koeficijent, koji se često koristi u sportu za procjenu snage i pomoću koga je moguće porediti sportiste bez obzira na njihovu kilažu, je korišćen. Zaključeno je da je Wilksov koeficijent na dijetama opao, ali ne u skladu sa autorovim očekivanjima. Polazna pretpostavka da je glikogenski depo u jetri nije dovoljan za izvođenje ovako teškog treninga nije opovrgnuta. Primećene su individue, poput subjekta broj 8, koji su imali bolje rezultate na smanjenom unosu ugljikohidrata, što se može objasniti činjenicom da je njegovo tijelo bolje reagovalo na manje skokove inzulina i kada su nivoi ovog hormona bili stabilni, što je bilo u skladu sa istraživanjima Hofmana, 2014. Udeo genetike, spoljne sredine manifestovane kroz trening i međusobne interakcije ta dva trebalo bi da posluži kao osnov za buduća slična istraživanja.

Ključne reči: rotacija ugljikohidrata, niski unos ugljikohidrata, snaga.

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