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Vol. 21, № 1, 2023



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## A DIFFERENT APPROACH TO TEACHING TRADITIONAL DANCE IN PHYSICAL EDUCATION CLASSES

UDC 793.3:371.214

**Eugenia Nikolaki<sup>1</sup>, Maria Koutsouba<sup>1</sup>, Fotini Venetsanou<sup>1</sup>,  
Giorgos Lykesas<sup>2</sup>, Giorgos Fountzoulas<sup>1</sup>, Despina Savidou<sup>3</sup>**

<sup>1</sup>School of Physical Education and Sport Science,  
National and Kapodistrian University of Athens, Greece

<sup>2</sup>School of Physical Education and Sport Science,  
Aristotle University of Thessaloniki, Greece

<sup>3</sup>Department of Primary Education of Corfu, Greece

**Abstract.** *The aim of the present study was to investigate the implementation of the Laban Notation-based method for Teaching Dance (LANTD) in the teaching of traditional dance (TD). In particular, the study examines the impact of the LANTD method on students' dance performance and intrinsic motivation. For that purpose, sixty-three (N=63) 5<sup>th</sup> and 6<sup>th</sup>-grade students (32 boys and 31 girls), aged 11-12 years ( $M = 11.76 \pm 0.62$ ) were divided into the experimental group (EG) and the control group (CG). A quasi-experimental intervention study was used with pre and post-tests. Both groups were taught Greek TD for twelve consecutive physical education lessons. The EG was taught TD using the LANTD method, while the CG was taught TD with the traditional reproductive method (the mimetic approach). Students' dance performance was assessed with the Dance Performance Assessment Instrument whereas their intrinsic motivation was assessed with the Intrinsic Motivation Inventory in its Greek version. For data analysis, repeated-measures ANOVAs were utilized. The results revealed that the EG compared to the CG demonstrated significantly higher improvement in dance performance ( $F_{(1,61)} = 6.20, p < .05, \eta^2 = .10$ ), interest/enjoyment ( $F_{(1,61)} = 22.37, p < .001, \eta^2 = .27$ ), and effort/importance ( $F_{(1,61)} = 8.51, p < .05, \eta^2 = .12$ ). In addition, students of the EG improved their perceived competence. It can be argued that the LANTD method of teaching TD was more effective than the traditional method at improving dance performance and promoting intrinsic motivation. However, more research is required to provide further evidence of the effectiveness of the LANTD method in the teaching practice of TD.*

**Key words:** *dance performance, intrinsic motivation, Laban movement analysis, Labanotation system*

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**Corresponding author:** Eugenia Nikolaki

School of Physical Education and Sport Science, National and Kapodistrian University of Athens, Greece

E-mail: [evinikolaki@gmail.com](mailto:evinikolaki@gmail.com)

## INTRODUCTION

Physical education (PE), as a course included in the primary and secondary education curriculum, aims to enhance students' physical, emotional, spiritual, and cognitive development (Gallahue & Cleland, 2003; Pangrazi, 2001; Weiss, 2011), engaging students in a broad range of activities, including traditional dance (TD). TD has been integrated into the PE curriculum in several countries for a long time (Dania, 2013; Koutsouba, 2012; Mattsson & Lundvall, 2015; Marquis, 2017). TD is a masterful activity that occurs through improvised or purposefully selected movements in a rhythmically coordinated way, usually to music, within a given space. At the same time, TD serves as an effective means of preserving tradition, cultural heritage, and national identity (Kringelbach & Skinner, 2014; Lykesas, 2017).

As stated in the literature, students participating in TD activities gain the same physical, cognitive, and affective benefits to that of other PE activities (Marquis, 2017). Regarding physical benefits, research evidence has shown that TD can improve the students' movement repertoire, develop coordination, balance, posture, and flexibility and boost muscular strength and stamina (Argiriadou et al., 2017; Chatzihidioglou, Chatzopoulos, Lykesas, & Doganis, 2018; Cone & Cone, 2003; Lykesas, Giosos, Theocharidou, Chatzopoulos, & Koutsouba, 2018; Ross, 2006; Venetsanou & Kambas, 2004). As far as the cognitive domain is concerned, TD can foster creativity, critical thinking, and self-perception (Argiriadou et al., 2017; Burkhardt, & Brennan, 2012; Darginidou, Goulimaris, Toumpalidou, & Filippou, 2020; Koutsouba, 2021; Lykesas, Chatzopoulos, Koutsouba, Douka, & Bakirtzoglou, 2020; Fountzoulas, Koutsouba, & Nikolaki, 2018). From an affective perspective, TD can cultivate children's social relationships and enhance their communication skills (Darginidou et al., 2020; Koutsouba, 2004; Fegley, 2010; Lykesas et al., 2018; Ward, 2013).

Although TD has been identified as a valuable activity in the actual teaching process, there is widespread concern about the effectiveness of existing traditional teaching methods on students' dance performance and engagement in the learning process (Rhone, 2017). More specifically, as far as the didactics of TD is concerned, the most widely applied teaching method is the mimetic one, in which students learn the movement vocabulary of the dance by observing and imitating their teacher (the mimetic approach) (Dania, Koutsouba, & Tyrovola, 2015; Dania & Tyrovola, 2017). In this method, students are required to be well-disciplined and obedient, while focusing their attention on predefined, motor-oriented, rather than cognitive-oriented tasks. Consequently, students are not actively engaged in the learning process and are passive information receivers (McCombs, 2004; Sanchez, Byra, & Wallhead, 2012). Researchers on the content of TD confirm that this traditional method of teaching does not keep students' interest piqued, reduces their intrinsic motivation to perform the task, and leads them to indifference and boredom (Lykesas & Zachopoulou, 2006; Lykesas, Dania, Koutsouba, Nikolaki, & Tyrovola, 2017; Lykesas et al., 2018; Lykesas et al., 2020; Pappaioannidou, Derri, & Filippou, 2015; Pitsi, Diggelidis, & Papaioannou, 2015). However, intrinsic motivation plays a crucial role in students' learning and the development of PE (Biddle, 2001). In particular, within PE, intrinsic motivation is significantly and positively correlated with adaptive outcomes, including performance, satisfaction, task value, enjoyment, and physical activity intentions (Chen, Wang, L., Wang, B., & Zhuo, 2020; Ntoumanis & Biddle, 1999; Standage, Duda, & Ntoumanis, 2003; Warburton, 2017).

To both reduce the 'mechanical' nature of TD teaching and foster the students' engagement, dance scholars and practitioners suggest the need for new pedagogical approaches to teaching TD in PE (Dania, 2013, Elyagutu & Hazar, 2017, Lykesas, Koutsouba & Tyrovola, 2009;

Venetsanou & Kambas, 2004). The implementation of the LANTD method (Dania, 2013, 2018; Dania, Tyrovolas, & Koutsouba, 2017) could be a form of pedagogy that will better support a positive and productive learning environment in which students can learn TD more efficiently. The LANTD method is based on the Laban Movement Analysis (LMA) and Labanotation, two widely accepted systems for analyzing, notating, and understanding human movement, developed by Rudolf Laban (Laban, 1975, 1980). LMA is a system in which all movements of the whole body are components of four major categories, namely Body, Effort, Space, and Shape. Labanotation is the symbolic language for notating movement. Using abstract symbols, Labanotation provides information of direction, level, time of the moving part of the body, and on the type of movement that can be read easily and directly, similar to reading notes for music, or numbers for math (Guest, 2005).

Utilizing the above-mentioned system, the LANTD method aims to facilitate students to learn how dance is structured and how dance can be expressed in its simplest forms. By providing two different representations of the information, both visual and verbal, the LANTD method helps students gradually learn the developmental progression of dance (kinetic elements, cells, kinetic motifs, dance phrases, segments, parts, and dance choreography) in relation to the musical structure and rhythm, by absorbing information regarding the elements of movement before directing it to their body. In other words, students learn: a) the parts of the body that are used, as well as the interrelationships within the body and others, b) the directions and paths of the movement, c) the changing forms that the body creates in space during movement, and d) the qualitative changes in the energy of movement with respect to inner intention. The effectiveness of the LANTD method in comparison with the mimetic approach, as far as the dance performance is concerned, was supported in teaching Greek traditional dance courses to university students, aged 20-22 (Dania, 2013).

In light of the above, and having in mind that few research reports exist concerning the implementation of different TD teaching methods in PE classes at the primary school level, the present study aims to investigate the impact of the LANTD method on students' dance performance and intrinsic motivation of 11-12-year-old students in TD. Taking into consideration the main characteristics of the LANTD method, it was hypothesized that it can improve students' dance performance and increase their intrinsic motivation more than the traditional reproductive method (the mimetic approach) of teaching TD.

## METHOD

### Participants

A total of 63 5<sup>th</sup> and 6<sup>th</sup>-graders of two elementary schools in Naoussa, Northern Greece, (32 boys and 31 girls), aged 11-12 years ( $M = 11.76 \pm 0.62$ ) volunteered to participate in the present study, following the submission of a parental consent form. The study was approved by the Ethics Committee of the School of Physical Education and Sport Science of the National and Kapodistrian University of Athens (1100/13-02-2019).

### Measurements

To assess students' dance performance, the Dance Performance Assessment Instrument (DPAI) (Dania, Hatziharistos, Koutsouba, & Tyrovolas, 2014), an observational assessment

instrument based on the systematic monitoring of dancers, was used. DPAI has been constructed according to the principles of LMA. It includes thirty criteria (specific movement and dance protocol standards) that assess particular elements of the structure and quality of dance movement, grouped into six categories: a) Body, b) Time, c) Space, d) Weight, e) Shape, and f) Flow. Indicative criteria for each assessment category of the DPAI are described in Table 1. The assessment of students' dance performance is done by two independent judges, specialized in the Labanotation system, by video observation taken during the performance of the dance. In addition, judges are provided with a video showing the assessment dance performed by a model that is used as a reference point. The judges assess the dance performance of each dancer separately. Each criterion is scored individually using numerical values (0=does not meet the performance standard, 1=meets the performance standard). The maximum score for each category is 5, while the maximum total sum for all categories, which represents the Total Index (TI) of dance performance, is 30. The scores of the two judges are summed up per category and the TI. In the present study, the "Tsamiko" dance was selected as the assessment dance. "Tsamiko" is one of the most widespread and popular traditional dances of Greece. It is danced by men and women in an open circle with arms in a W-hold to slow music in 3/4 time. It is characterized by strict and slow tempo pauses, turns, and free improvisation. Students' dance performance was assessed based on the basic step of the dance. Construct validity and reliability of the DPAI for assessing 11-12 year-old-children's dance performance in TD have been checked in a previous study and were found to be excellent (Nikolaki, Koutsouba, Venetsanou, Lykesas, & Fountzoulas, 2021). In the present study, the intraclass correlation coefficient (ICC) values for both measurements (initial= .95, final= .98), indicated excellent reliability between raters.

To evaluate the students' intrinsic motivation on the three scales (interest/enjoyment, perceived competence, effort/importance) of the Intrinsic Motivation Inventory (IMI) (McAuley, Duncan & Tammen, 1989), its Greek version (Papacharisis & Goudas, 2003) was used. In the context of PE in Greece, this questionnaire is one of the most frequently used instruments and its psychometric properties have been established in several studies (e.g., Goudas & Dermitzaki, 2004; Goudas, Dermitzaki & Bagiatis, 2000; Papacharisis, Simou, & Goudas, 2003; Tsigilis & Theodosiou, 2003). Each scale is composed of 5 items. Students answered the items following the stem: "In Greek TD lesson...". Responses were given on a 5-point Likert type scale (5 = strongly agree, 1 = strongly disagree). Example items include: "... the activities were fun to do" (interest/enjoy), "... I was trying very hard" (effort/importance), "... I am satisfied with my performance" (perceived competence). In the present study the alpha reliabilities (Cronbach, 1951) of the scales of the questionnaires for both measurements indicated acceptable scale reliabilities (initial from .84 to .89, final from .87 to .93).

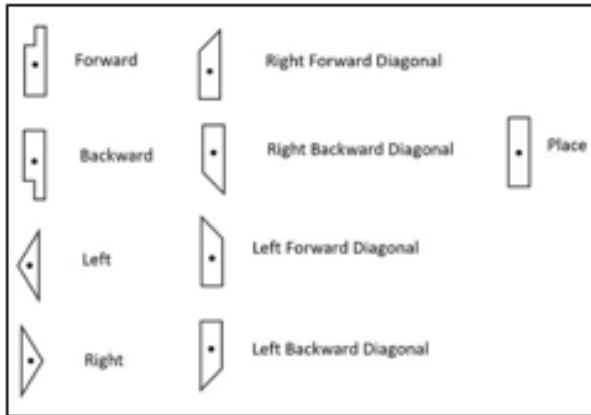
**Table 1.** Indicative criteria for each DPAI assessment category

Categories	Criteria
BODY	Placement of the body's center of gravity in regard with its stance
TIME	Performance of movement in relation to the music tempo
SPACE	Spatial focus or attention during movement
WEIGHT	Shift of weight (i.e., when changing place or support)
SHAPE	Directional or like movement
FLOW	Performance of pauses

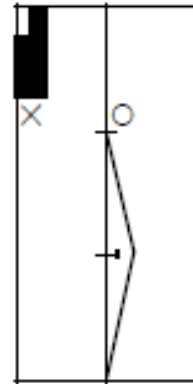
### Research design – procedure

A quasi-experimental intervention study was used with pre and post-tests. For that purpose, 63 students were divided into the control and the EG, of approximately equal size (31 and 32 students, respectively). It was not possible to incorporate randomization as there were four natural classes already established by the school center. Both groups were taught Greek traditional dance for twelve consecutive PE lessons, according to the physical education curriculum. The EG received the intervention and was taught GTD with LANTD, by a teacher who had previous knowledge of and experience with the Labanotation system. The CG was taught GTD with the traditional reproductive method (the mimetic approach). Both groups were taught a total of 10 traditional dances (Zonaradikos, Tsamikos, Tik Momon, Enteka, Kalamatianos, Pentozali, Raikos, Podaraki, Gaida, Syrtos Makedonias). The material used to teach the EG consisted of 12 lesson plans, specially designed to implement the LANTD method, taking into consideration the students' age and level of experience. Lessons were developed to be as understandable as possible for students to use, leading them gradually from easy and simple to more difficult and complex tasks. The main groups of Labanotation symbols, and its fundamental rules, were taught at a basic level, yet in adequate depth, for students to understand the structure of the dance and to obtain a fundamental notation competence. Only the necessary symbols for the simple notation of traditional dances by students at a beginner level were used. This is due to the fact that the primary focus was mainly concerned with the analysis of leg movements, as well as of movements' direction and timing.

At the beginning of the learning process, the students became familiar with the Labanotation system. In particular, through entertaining games and activities, the students learned the symbols that are used in the Labanotation system, how these symbols are laid out on the Labanotation staff for the description of dance movements, and what these symbols indicate depending on their placement on the staff. Following this stage and with the knowledge acquired previously, the students learned to decompose a dance choreography while learning it. *More specifically*, students learned to read and recognize the kinetic motifs of the dance (the smallest unit of a dance form) and to find similarities and repetition within the dance choreography. Additionally, students paid attention to movement writing, in order to think carefully about how the dance is structured and to understand that an entire dance is built around the development and variation of a few contrasting motifs. As far as the instructional process is concerned, in all the lessons, dance learning was divided into four phases. In the first phase (the introductory part), the students were engaged in enjoyable and authentic activities in order to explore the basic structural elements of the dance. Therefore, symbol recognition games, simple notation relay races, and card games were used. In the second and third phase (the main part), the students were initially enrolled in rhythmic activities and then engaged in group activities for dance analysis, performance, and composition, by both observing the teacher demonstrate and analyze the dance and using notation charts. In the final part, all of the students performed the dance choreography that was demonstrated by the teacher and reflected on their learning experiences based on the feedback that was offered by him/her (Figure 1, 2, 3).



**Fig. 1** Symbols for direction and level



**Fig. 2** Example of kinetic motif



**Fig 3** Example of Labanotation “Tsamikos”

Along with text material, pictures, and videos PowerPoint slides were also used in the educational process to be supported, as well as interactive activity games (i.e. symbol recognition games, simple notation relay races, card games).

## Statistical analyses

The data were analyzed using IBM SPSS Statistics for Windows, Version 24. Descriptive statistics were computed for the dance performance and the three scales of intrinsic motivation. To investigate any possible differences between “LANTD” and the mimetic approach in (a) dance performance and (b) intrinsic motivation variables (interest/enjoyment, perceived competence effort/importance) repeated measures ANOVAs (group  $\times$  measurement) were computed. Post hoc comparisons using the Sidak test were performed when significant interactions were found. Moreover, effect sizes were also examined via partial eta squared, in which small, medium, and large effects were operationalized as 0.01, 0.06, and 0.14, respectively (Cohen, 1988). The significance level was set at .05.

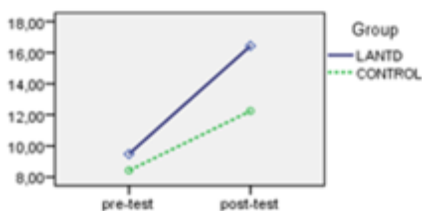
## RESULTS

The descriptive statistics and an analysis of variance for the study variables are shown in Table 2. As far as the participants' dance performance is concerned, the ANOVA results revealed a significant group  $\times$  measurement interaction ( $p=.016$ ) of a medium to large effect size. In addition, the main effect of measurement was statistically significant ( $p=.000$ ), while the main effect of the group was not ( $p=.088$ ).

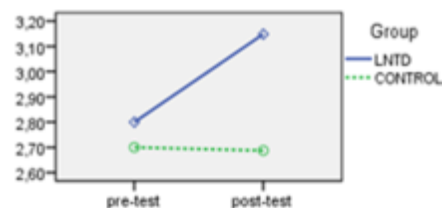
**Table 2** Means and standard deviations of the study variables and ANOVA results

Measure	Pre-test		Post-test		ANOVA results		
	EG	CG	EG	CG	group $\times$	group	measurement
Item	M(SD)	M(SD)	M(SD)	M(SD)	measurement	t	
DP	9.49 (6.65)	8.42(5.24)	16.43(7.97)	12.25 (5.84)	F=6.20*	F=3.00	F=73.84**
					$\eta^2=.10$	$\eta^2=.04$	$\eta^2=.54$
IE	2.80 (.67)	2.70 (.74)	3.15 (.82)	2.68 (.83)	F=22.37**	F=2.17	F=19.37**
					$\eta^2=.27$	$\eta^2=.03$	$\eta^2=.24$
EI	3.01 (.68)	3.19 (.87)	3.13 (.81)	3.08 (.94)	F=8.51*	F=3.30	F=.00
					$\eta^2=.12$	$\eta^2=.05$	$\eta^2=.00$
PC	3.60 (.47)	3.87 (.72)	3.64 (.49)	3.92 (.75)	F=.27	F=.10	F=5.76*
					$\eta^2=.00$	$\eta^2=.00$	$\eta^2=.86$

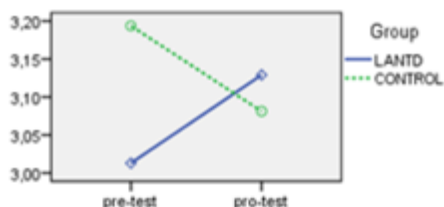
Abbreviations: EG - experimental group, CG - control group, DP - dance performance, IE - interest/enjoyment, EI - effort/importance, PC - perceived competence, \*  $p < .05$ , \*\*  $p < .001$



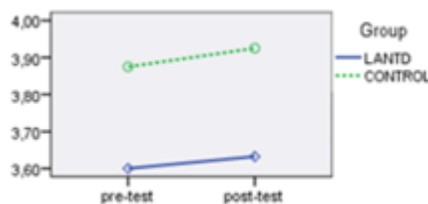
**Fig. 4** Changes in dance performance



**Fig. 5** Changes in interest/enjoyment



**Fig. 6** Changes in effort importance



**Fig. 7** Changes in perceived competence

As seen in Figure 1, before the intervention, the EG presented a slightly higher dance performance than the CG (mean difference = 1.06) but this difference was not statistically significant ( $p=.484$ ). Over time, both groups significantly increased their dance performance ( $p=.000$ ); however, the EG presented a greater improvement (mean difference=7.0) than the CG (mean difference=3.8), resulting in a statistically significant difference between the two groups at the post-test (mean difference = 4.19,  $p=.020$ ).

As far as the students' intrinsic motivation is concerned, the ANOVA results showed significant main effects of measurement for interest/enjoyment ( $p=.000$ ) and perceived competence ( $p=.019$ ), but not for effort/importance ( $p=.963$ ). The main effect of the group was not significant for any of the variables. Furthermore, the group x measurement significant interaction was found for interest/enjoyment ( $p=.000$ ) and effort/importance ( $p=.005$ ), with a large and a medium to large effect size, respectively. More specifically, the results of the pre-test did not show significant differences between the control and the EG in any variable. However, as seen in Figures 2 and 3, after the intervention, the EG significantly improved both their interest/enjoyment (mean difference=.348) and effort/importance scores (mean difference=.116), whereas the CG presented a slight decrease (mean difference= -0.12 and mean difference= -.11 for interest/enjoyment and effort/importance, respectively); thus, at the post-test the EG surpassed the CG in interest/enjoyment (mean difference =.46,  $p=.031$ ) and effort/importance (mean difference= -.048,  $p<.05$ ). Regarding the participants' perceived competence, the results show that over time the participants of the EG slightly improved their scores (mean difference= 0.32), while a significant improvement was observed for the participants of the CG (mean difference= 0.50,  $p=0.45$ ). However, the difference between the two groups (.27) was not significant.

## DISCUSSION

This study aimed to investigate the impact of teaching TD with the LANTD method on students' dance performance and intrinsic motivation. Specifically, the study tested the hypothesis that the LANTD method of teaching TD is more effective than the mimetic approach at increasing students' dance performance and determinants of intrinsic motivation such as interest/enjoyment, effort/importance, and perceived competence. In general, the hypothesis was supported by the results. In particular, significant differences were found in the sections of dance performance, interest/enjoyment, and effort/importance in favor of the LANTD method, while no difference was observed between the two methods in perceived competence. As a consequence, the findings could serve as initial evidence in support of the effectiveness of the LANTD method, indicating its usefulness for teaching TD in young children aged 11-12.



The finding that students taught TD with the LANTD method improved their dance performance to a greater extent than those who followed the mimetic approach is in line with the study of Dania (2013), who developed and implemented the LANTD method in adult dancers. Similar results were also observed in the study of Elyagutu and Hazar (2017), who confirmed that students who taught TD with a method based on Laban movement notation improved their learning outcomes at a higher rate than those who learned TD through the traditional method. According to researchers, effective dance learning necessitates that students know how to dance rather than simply repeat a sequence of dance steps (Lykesas, 2017; Dania, 2013; Langton, 2007). Based on the above, a possibility that could account for the higher dance performance of the LANTD group is that the LANTD method, compared to that of the mimetic approach, helped the students gain a thorough understanding of the conceptual context and the formal structures of the TD (Dania et al., 2015; Dania et al., 2017). More specifically, through the use of the LANTD method the students adopted a consistent movement vocabulary, learned the movement principles and enhanced their ability to define the kinetic motifs of the dance and how these motifs are organized and associated with each other into a meaningful whole. In other words, the findings of the present study indicate that putting the dance on paper helps young students to both retain information and learn how to recognize and understand dance when they see it.

In addition to assessing dance performance, interest/enjoyment, effort/importance, and perceived competence were also assessed since these factors are conceptualized as important resources of intrinsic motivation (Deci & Ryan, 1985). The results indicated that the LANTD group of students significantly increased their levels of interest/enjoyment and effort/importance from the pre to the post-test, compared to students involved in the mimetic approach group, whose scores dropped between the two tests. As far as the perceived competence is concerned, the results show that there was no difference between the compared groups. However, a close look at the data revealed that the two groups showed the same improvement in perceived competence, which suggests that the LANTD method plays an equally important role in the reinforcement of the above determinant of intrinsic motivation.

From a practical point of view, students of the LANTD group compared to those of the CG were given more autonomy, choices, and options with different tasks that were more stimulating, interactive, and memorable. It can therefore be deduced that students who were taught TD with the LANTD method found the lesson more challenging and enjoyable. In the absence of similar research studies on the topic, it is noted that the present results are in line with those of other studies that showed that students who were taught TD with the self-check method (Pitsi, Diggelidis, & Papaioannou, 2015), the music and movement teaching model (Lykesas & Zachopoulou, 2006; Lykesas et al., 2017; Lykesas, et al., 2010), or interdisciplinary programs (Pappaioannidou, Derri, & Filippou, 2015) felt intrinsically motivated to a much greater extent than those who taught TD with the mimetic approach and direct instruction.

Finally, taking into consideration the values of  $\eta^2$  it can be argued that the effects were large enough to be meaningful in a practical sense. The practically significant improvement in the dance performance and intrinsic motivation can be attributed to the learning strategies and activities that were used in the LANTD method in each phase of the instructional process. Observation, imitation, and modeling were also used in the teaching-learning process of the LANTD method. However, the aforementioned learning strategies were fostered by new broad exploratory activities that focus both on skill movement competence and cognitive thinking development, as well as on students' engagement and motivation to learn. The importance of

improving the quality of teaching in PE is emphasized by several researchers (Logan, Robinson, Wilson, & Lucas, 2011; Rink & Hall 2008; Ward, 2013). Therefore, this study pinpoints the need for physical education teachers to widen their initial schemes of knowledge about the implementation and the precise usefulness of different methods of teaching TD. A well-rounded arsenal of effective instructional methods may maximize their efficiency and increase student learning opportunities.

Nevertheless, this study has certain limitations that should be acknowledged. Firstly, the participants come from a specific region, thus, they do not reflect the general population and the findings of the study cannot be generalized. In addition, the predefined participants' age limits the generalizability to other populations. Future research should, therefore, examine the effectiveness of the LANTD method on dance performance and motivation among children of different school ages. Secondly, further exploration regarding the application of the LANTD method in different dance categories, types, styles, or genres of dance would be worthwhile. However, having in mind the lack of research regarding TD teaching methods and despite existing limitations, the findings of the present study offer new, potentially useful practical knowledge about the teaching of TD.

## CONCLUSIONS

The aim of the present study was to examine the differences between the LANTD method and the traditional reproductive method (the mimetic approach) on dance performance and intrinsic motivation of 11 and 12-year-old students in TD. The findings of the study show that there was a significant difference in favor of the LANTD method. Students who taught TD with the LANTD method demonstrated significantly higher dance performance and significantly greater levels of intrinsic motivation in terms of interest/enjoyment and effort/importance compared to those who followed the traditional teaching method of TD. Furthermore, an improvement in perceived competence was observed for the EG. It can be stated that the LANTD teaching method was more effective, and thus the students in the EG scored higher on dance performance. In addition, it appears that the LANTD method created an attractive learning environment that is extremely important for an efficient and qualitative lesson. However, more experimental research is needed regarding the best instructional implementation of the LANTD method in teaching TD.

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## ALTERNATIVNI PRISTUPU UČENJU TRADICIONALNOG PLESA U OKVIRU ČASOVA FIZIČKOG VASPITANJA

*Cilj ovog istraživanja bio je da se predstavi primena LANTD metode za učenje tradicionalnog plesa (TD). Pre svega, istraživanje se bavi uticajem LANTD metode na izvođenje plesa i intrinzičnu motivaciju studenata. Ukupno je 63 (N=63) učenika petog i šestog razreda (32 dečaka i 31 devojčica), starosti 11-12 godina (M = 11.76±0.62) podeljeno u eksperimentalnu grupu (EG) i kontrolnu grupu (CG). Pseudo-eksperimentalni metod korišćen je u istraživanju, uz pre-test i post-test. Obe grupe učenika učile su grči TD tokom dvanaest uzastopnih časova fizičkog vaspitanja. EG učila je TD kroz LANTD metodu, dok je CG TD učila tradicionalnih mimetičkim pristupom. Izvođenje plesa ocenjivano je DPA instrumentom, dok je intrinzična motivacija procenjivana grčkom verzijom IM inventara. Podaci su obrađeni ANOVA testom za ponovljena merenja. Rezultati su pokazali da je EG, u poređenju sa CG, imala značajni napredak u izvođenju plesa ( $F_{(1,61)} = 6.20, p < .05, \eta^2 = .10$ ), interesovanju/uživanju ( $F_{(1,61)} = 22.37, p < .001, \eta^2 = .27$ ), i trudu/značaju ( $F_{(1,61)} = 8.51, p < .05, \eta^2 = .12$ ). Pored toga, učenici EG poboljšali su svoju kompetenciju. Može se reći da je LANTD metoda učenja TD bila efikasnija od tradicionalne metode za izvođenja plesa i promovisanje intrinzične motivacije. Ipak, potrebno je sprovesti veći broj istraživanja kako bi se prikupili dalji podaci o učinkovitosti LANTD metode za učenje TD.*

*Ključne reči: izvođenje plesa, intrinzična motivacija, Laban analiza pokreta, Labanotation sistem*



**Research article**

## **THE PETTLEP METHOD AS A VALID LEARNING METHOD FOR IMPROVING THE JUMP TECHNIQUE OF YOUNG FEMALE RHYTHMIC GYMNASTS**

*UDC 796.412.012.21-055.2*

**Nataša G. Roška<sup>1</sup>, Lidija Moskovljević<sup>2</sup>,  
Tijana Purenović-Ivanović<sup>3</sup>, Boris Popović<sup>1</sup>**

<sup>1</sup>University of Novi Sad, Faculty of Sport and Physical Education, Novi Sad, Serbia

<sup>2</sup>University of Belgrade, Faculty of Sport and Physical Education, Belgrade, Serbia

<sup>3</sup>University of Niš, Faculty of Sport and Physical Education, Niš, Serbia

**Abstract.** *The PETTLEP motor imagery method is a widely used approach in the process of improving the performance of sport activities. In comparison to more traditional imagery protocols, PETTLEP-based imagery provides a more detailed learning experience. Consisting of many domains that are helpful in achieving better results by applying processes such as physical factors, environmental details, task and time factors, learning and perspective moments, the PETTLEP method is an advanced approach recommended by many studies which confirm its effectiveness. The purpose of this study was to determine the effects of the PETTLEP imagery method in training sessions involving young female rhythmic gymnasts (RGs) on the performance advancement of selected jump techniques in Rhythmic Gymnastics (RG). Forty-nine female RG novices aged 6 to 8.99 and thirty-one aged 9 to 10.99 were involved in this study and divided into two subgroups (training with and without the PETTLEP method). The mutual training methods were hour-long training sessions twice per week, with a mandatory task of learning and improving the technique of the vertical jump with straight legs and with a turn, the “Cabriole” forward jump, and the “Scissors” leaps with a switch of the legs forward. Group two was the one following the PETTLEP method in the learning process. The quality of the jump techniques was evaluated by national and international RG judges according to a modified scale for assessment of the adoption of jump techniques in RG, adjusted according to the FIG Code of Points for RG. The data were analysed with a repeated measures ANOVA, effect size  $r$ , and Cohen’s  $d$  effect. The results of the analysis showed that both groups showed signs of improvement. There was no significant between-group difference in the effect size.*

**Key words:** *motor imagery, action observation, performance improving*

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**Corresponding author:** Nataša G. Roška

University of Novi Sad, Faculty of Sport and Physical Education, Lovćenska 16, 21101 Novi Sad, Serbia

E-mail: [natasapencic@gmail.com](mailto:natasapencic@gmail.com)

## INTRODUCTION

The role of the psychological preparation of athletes is very important for success in any sport. Athletes who have undergone psychological preparation are better able to employ their physical capabilities acquired via training in a way that is both rational and effective. This contributes, especially in unfavorable competition circumstances, to performance at competitions that represent the highest degree of stressful situations, and on the other hand, to applying mental learning technique, where the quality of the athletes' technical preparation is influenced by their ability of imagining the motor action (Smith, Holmes, Whitmore, Collins, & Devonport, 2001; Smith, Wright, Allsopp, & Westhead, 2007; Smith, Wright, & Cantvelli, 2008).

Numerous studies support the psychological preparation of athletes in the form of effects of mental training-motor imagery on the motor task performance (Battaglia, D'Artibale, Fiorilli, Piazza, Tsopani, Giombini, & di Cagno, 2014; Holmes & Collins, 2001; Jeannerod, 2001; Munzert, Zentgraf, Stark, & Vaitl, 2008; Moran, Guillot, MacIntyre, & Collet, 2012). Mental training efficacy in improving sports performance is widely recognized (Smith et al., 2001, 2007, 2008). Several studies, conducted to establish the mechanism underlying the performance-enhancing effects of imagery, showed overlapping neural representation (Grezes & Decety, 2001). A strong correlation between real and simulated movements was found in several studies (Heremans, Helsen, & Feys, 2007; Nikulin, Hohlefeld, Jacobs, & Curio, 2007; Sharma, Jones, Carpenter, & Baron, 2008).

Motor imagery is a cognitive process of the mental simulation of an action in the absence of physical movement (Jeannerod, 1995). It is also defined as a state of general activation during which a person feels themselves performing an action. "Imagery, in the context of sport, may be considered as the creation and re-creation of an experience generated from memorial information, involving quasi-sensorial, quasi-perceptual, and quasi-affective characteristics, that is under the volitional control of the imager, and which may occur in the absence of the real stimulus antecedents normally associated with the actual experience" (Morris, Spittle, & Watt, 2005).

Through the development of the implementation of imagery used in sport, imagery firstly had a cognitive function closely related to imagery content such as performing either single motor tasks (Cognitive Specific – CS) or executing game plans and strategies (Cognitive General – CG) (Paivio, 1985). The other function, as proposed by Paivio (1985), was the motivational function and was characterized by motivational and emotional imagery content such as goal setting or being self-confident (Motivational Specific – MS), or dealing with arousal (Motivational General – MG). In the 2000s, imagery models were based on how and when athletes use mental imagery according to factors such as the sport situation, the imagery type, the outcome, and the athletes' imagery ability as proposed by Martin, Moritz, & Hall (1999). The development of imagery continued later on, describing in greater detail where, when, and why athletes use imagery, and as well what athletes image (Munroe, Giacobbi Jr., Hall, & Weinberg, 2000). From a functional perspective, the PETTLEP method was proposed by Holmes & Collins (2001). This method was devised to maximize the effect of mental training on sports performance by co-imagining motor action. The model is derived from neuroscientific and behavioural functional equivalence literature, and is based on the proposition that the same areas of the brain are activated during imagery, compared to actually engaging in the task. Consequently, the neuronal activity develops strengths, which leads to performance improvements. The model includes seven identifiable elements which serve as



an orientation for both athletes and coaches, helping them to create more effective imagery use: the physical (Physical), the principle of the living environment (Environment), the task (Task), time (Timing), learning (Learning), emotional control (Emotions), and perspective (Perspective) (Holmes & Collins, 2001; Smith et al., 2007, 2008) based on the functional equivalence hypothesis (Finke, 1979; MacIntyre, 1996). The PETTLEP approach should simulate, as closely as possible, all aspects of the motor action execution situation.

The extension of the PETTLEP model includes action observation and imitation of others. The related neurological phenomenon has received considerable attention in the neuroscience literature (Rizzolatti & Craighero, 2004). The influence that watching oneself or others can have on one's own performance, as well as on psychological variables such as self-efficacy and self-regulation, has been well recognized (Mc Cullagh, Law, & Ste-Marie, 2012). Various terms have been used to describe this phenomenon, including observational learning or modelling, and recent research showed how athletes use observation in realistic sport settings to enhance sport performance (Munzert et al., 2008; Ste-Marie, Law, Rymala, Craig Halld, & McCullagh, 2012). Despite the different interpretations of the functional equivalence validity of the PETTLEP model, on top of recent research findings, the importance of matching the imagined and actual motor skills closely is largely recognized (Ramsey, Cumming, & Edwards, 2008; Wakefield, Smith, Moran, & Holmes, 2013). In fact, some studies have found PETTLEP-based intervention to be effective with tasks such as long jumps, gymnastic jumps, and strength tasks (Wright & Smith, 2009; Lebon, Collet, & Guillot, 2010; Reiser, Büsch, & Munzert, 2011). Similar results were found in a study conducted to examine the influence of the mental training protocol with video observation and the PETTLEP mental training associated with physical practice on the improvement of gymnastics jump performance (Battaglia et al., 2014). Smith et al. (2007) found positive effects of PETTLEP-based imagery intervention on a full-turn straight jump on the beam among 7 to 14-year-old gymnasts. In the field of Rhythmic Gymnastics (RG), it can be seen that, given the intense training that rhythmic gymnasts (RGs) undergo (di Cagno et al., 2012) to prevent fatigue-related injuries and to reach a competitive level, mental training programs may be a means of enabling them to enhance their performance and avoid overtraining. Actually, RGs tend to include mental training in their training program only when they are injured or to control competition-related stress (Bertollo, Saltareli, & Robazza, 2009; Guidetti, di Cagno, Gallotta, Battaglia, Piazza, & Baldari, 2009).

Given that the technique of performing all of the movements in RG is characterized by accuracy, precision, amplitude, consistency, softness, expressiveness, for the quality technical performance of elements of movement structures in RG, many years of systematic repetition, practice, and mastering of basic RG movement structures are necessary (Moskovljević & Dobrijević, 2018), as well as an adequate approach to the learning process. This study hypothesized that an eight-week intervention, consisting of video observation and PETTLEP combined with physical practice, could be a useful method for improving jump techniques among RG novices. This study aimed to evaluate whether the combination of video observation, PETTLEP imagery, and physical practice could improve the adoption of the selected jump techniques of RG novices. Another aim of this study was to investigate the difference of the effect of applied PETTLEP imagery and physical practice between the age groups (whether the effect was greater in the older age group or in a younger one), and to investigate if this method is an adequate approach to teaching jump techniques among RG novices aged 6 to 8.99. The purpose of this study was to evaluate the potential benefits of the PETTLEP imagery method in the training sessions of female RGs for the performance improvement of their jump techniques.

## METHOD

**Participants**

Forty-nine female RGs aged 6 to 8.99 and thirty-one aged 9 to 10.99 were involved in this study and divided into two groups: PP – physical practice alone and PP+MI – physical practice with PETTLEP. For each group the results are presented by subgroups: PP age 6 to 8.99 years (n=20), PP age 9 to 10.99 years (n=12); PP+MI age 6 to 8.99 years (n=29) and PP+MI age 9 to 10.99 years (n=19). The participants in both groups are RG novices (beginners without any training experience), “C” program group competitors, members of two RG clubs from Serbia (Club 1 was a PP alone group, Club 2 was a PP + MI group) who were informed about the study and its scientific values and benefits.

**Measures**

Video recordings of all of the three jump techniques were made for every participant and were taken before and after the applied training method (initial and final measurements, retrospectively). All of the measurements were taken by the authors in a room with optimal climatic conditions (~24°C). The quality of these jump techniques was evaluated according to a modified scale for assessing the adoption of three jump techniques in RG according to the FIG Code of Points for RG (FIG, 2022). This modified scale consists of five scores described in Table 1. Three RG judges of both national- and international-level gave scores independently and according to this scale. From the three marks awarded for each jump, the average mark for the task performed was calculated. Before starting the evaluation of the participants, each judge was fully informed by the authors of the research with the entire evaluation procedure. Also, the study participants were given instructions on how to perform the technique of three selected jumps before the performance. The rest period between three performances of each jump test lasted for 30 seconds, while the rest period between different jump tests lasted for 2 minutes. The overall study treatment lasted eight weeks.

**Table 1** The modified scale for assessing the adoption of jump techniques in RG adjusted according to the FIG Code of Points for RG

Score	Description
Score 1:	The jump was not performed, that is, the jump does not have a well-defined, fixed and correct shape.
Score 2:	The jump was performed with a large deviation from the correct shape (execution penalty: -0.50 points, irregular shape with a major deviation), with a large number of technical errors in the body segments position.
Score 3:	The jump was performed with a medium deviation from the correct shape (execution penalty: -0.30 points, irregular shape with a medium deviation), with a medium number of technical errors in the body segments position.
Score 4:	The jump was performed with a small deviation from the correct shape (execution penalty: -0.10 points, irregular shape with a small deviation), with a small number of technical errors in the body segments position.
Score 5:	The jump has a fixed, well-defined and correct shape, and it is without technical errors (no execution penalty).

### Experimental design

Mutual training treatment, as shown in Table 2, were hour-long training sessions twice per week, with a mandatory task of learning and improving the technique of the vertical jump with straight legs and with a turn, the “Cabriole” forward jump, and “Scissors” leaps with a switch of the legs forward.

At the baseline, the PP alone group applied training sessions of RG in the following manner: warm up, learning the technical elements, i.e. Difficulties of Body (DB): Jumps/Leaps, Balances and Rotations according to the FIG Code of Points for RG (FIG, 2022), learning Pre-Acrobatic elements and strength exercises. The learning method of the DB in this group consisted of a verbal explanation and practical demonstrations of the motor task. The PP+MI group had the same training session, where the MI was applied in the process of learning the Jumps DB.

Before and after the experimental session, jumps technique was evaluated for each gymnast participating in the study. A repeated measures design was used to compare two different types of training aimed on the improvement of the adoption of jumps technique in RG: (a) video observation and PETTLEP mental training associated with physical practice for the experimental group, and (b) physical practice alone for the control group.

**Table 2** Experimental design

		Pre-test						Post-test	
Experimental	Week 1	Week 2	Week 3	Week 4	Week 5	Week 6	Week 7	Week 8	
	video observation, PETTLEP and Jumps	video observation, PETTLEP and Jumps	video observation, PETTLEP and Jumps	video observation, PETTLEP and Jumps	video observation, PETTLEP and Jumps	video observation, PETTLEP and Jumps	video observation, PETTLEP and Jumps	video observation, PETTLEP and Jumps	
Control	Week 1	Week 2	Week 3	Week 4	Week 5	Week 6	Week 7	Week 8	
	verbal explanation and practical demonstration of Jumps	verbal explanation and practical demonstration of Jumps	verbal explanation and practical demonstration of Jumps	verbal explanation and practical demonstration of Jumps	verbal explanation and practical demonstration of Jumps	verbal explanation and practical demonstration of Jumps	verbal explanation and practical demonstration of Jumps	verbal explanation and practical demonstration of Jumps	
Jumps								Jumps	

Before the experimental session began, the participants of experimental group were informed about the learning method that will be applied in their training sessions and how this procedure will take place (the procedure was explained to them in detail).

The mental training protocol used in this study consisted of video observation and PETTLEP mental training. The experiment protocol took place as follows (Groups 2a and 2b): a three-minute video observation of three different jump techniques selected from the FIG Code of Points for RG (FIG, 2022): the vertical jump with straight legs and with a turn, the “Cabriole” forward jump, and “Scissors” leaps with a switch of the legs forward from a 3<sup>rd</sup> person perspective (a three-minute video showing a video and audio representation of “A” program RGs); five repetitions of imagining each jump technique for three minutes, five performances of each variation of jumps for the same duration (Wright & Smith, 2007; Lebon et al., 2010). The video observation was preferably performed before the visualization techniques, and the jump techniques were performed at each training session. During the video observation, it was necessary for the each of the participants to stand in front of a large screen (112x150 cm) located approximately 1m in front of them.

### Statistical analysis

The data were analysed using the Statistical Package for Social Sciences, version 20.0 (IBM SPSS 20.0, SPSS Inc, Chicago, USA). Basic descriptive statistic data were determined for all of the variables: average value (Mean) and Standard Deviation (SD). The normality of data distribution was tested using the Mann-Whitney *U* test. The effects of the treatment on improving the RG jump techniques were determined with the Repeated Measures ANOVA analysis (4x2 RM ANOVA), along with effect size *r* and Cohen’s *d* effect. The level of significance was set at  $p < 0.05$ .

## RESULTS

The basic descriptive statistic data are shown in Table 3. The results of the Mann-Whitney *U* test show normal data distribution in the majority of the variables. However, there are some statistically significant differences in this test for the variables “Cabriole” in the PP alone group age 6 to 8.99 for the pre-test, at a significance level  $p = 0.02$ ; and for the variable “Scissors” and “Cabriole” in the PP alone group age 9 to 10.99 for the pre-test, at a level of statistical significance  $p = 0.05$  and  $p = 0.00$ , respectively.

The results of the Repeated Measures ANOVA for the Vertical jump are shown in Table 4. The results show statistically significant differences for the variable time and training method ( $p = 0.00$ ). These results indicate that this jump technique was improved by the implementation of both training methods. Plot 1. shows that higher results of the assessed jump techniques were gained in the PP alone groups for both of the age subgroups (PP age 6 to 8.99 and PP age 9 to 10.99).

**Table 3** The basic statistical data

Groups	Variables	test	Mean	SD	Mann-Whitney U
PP alone 6-8.99	Vertical jump	pre	2.35	1.10	.91
		post	3.15	.94	.85
	“Scissors”	pre	2.20	.59	.34
		post	2.75	.81	.69
	“Cabriole”	pre	1.53	.68	<b>.02*</b>
		post	2.38	1.15	.51
PP + MI 6-8.99	Vertical jump	pre	1.93	.90	.35
		post	2.61	.78	.45
	“Scissors”	pre	2.05	.70	.99
		post	2.61	.70	.87
	“Cabriole”	pre	1.36	.78	.72
		post	2.15	1.05	.51
PP alone 9-10.99	Vertical jump	pre	3.61	.53	.22
		post	4.00	.35	.45
	“Scissors”	pre	3.28	.51	<b>.05*</b>
		post	3.89	.54	.47
	“Cabriole”	pre	3.14	1.12	<b>.00*</b>
		post	4.03	.85	.35
PP + MI 9-10.99	Vertical jump	pre	2.47	.80	.79
		post	3.19	.85	.82
	“Scissors”	pre	2.65	.72	.83
		post	3.14	.69	.18
	“Cabriole”	pre	2.11	1.17	.32
		post	2.98	1.10	.86

Legend: Mean – average value, SD – standard deviation, Mann-Whitney *U* test – significance, PP alone group (age 6 to 8.99), PP + MI group (age 6 to 8.99), PP alone group (age 9 to 10.99), PP + MI group (age 9 to 10.99), pre – descriptive statistics for the measurements of pre-testing, post – descriptive statistics for the measurements of post-testing, Vertical jump – vertical jump with straight legs and with a turn, “Scissors” – “Scissors” leaps with a switch of the legs forward, “Cabriole” – the “Cabriole” forward jump.

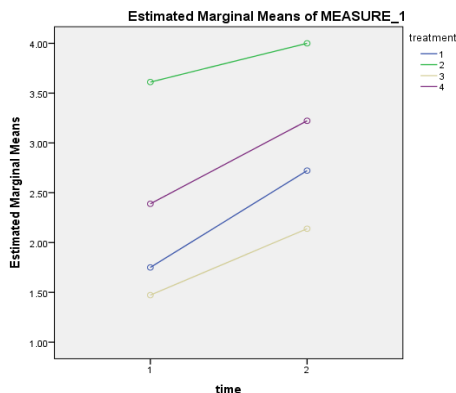
\*Statistically significant differences ( $p < 0.05$ )

**Table 4** The results of the Repeated Measures ANOVA for the Vertical jump

Multivariate test	Sig	Partial Eta Squared
time	<b>.00*</b>	.87
training method	<b>.00*</b>	.93
time* training method	.04	.58
Test of between subjects effects	Sig	Partial Eta Squared
time*training method	<b>.00*</b>	.99

Legend: Sig - Statistically significant differences ( $p < 0.05$ ); time – factor 1; training method – factor 2.

The results of the Repeated Measures ANOVA for the “Scissors” jump are shown in Table 5. The results show statistically significant differences for the variables time and training method ( $p=0.00$ ). These results indicate that the “Scissors” jump technique was improved in both the PP and PP +MI group. In Plot 2, the results show that higher results were gained in the PP alone groups for both of the age subgroups (PP age 6 to 8.99 and PP age 9 to 10.99).



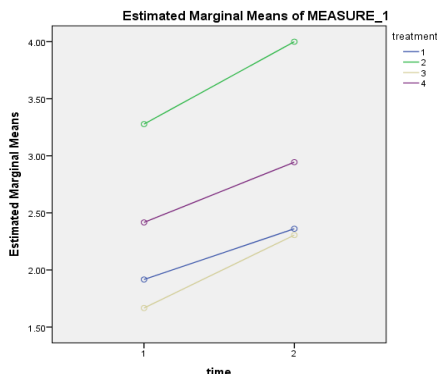
**Plot 1** Vertical jump (time\* training method)

Legend: training method 1- PP (age 6 to 8.99); training method 2- PP (age 9 to 10.99); training method 3- PP +MI (age 6 to 8.99); training method 4- PP+MI (age 9 to 10.99).

**Table 5** The results of the Repeated Measures ANOVA for the “Scissors” jump

Multivariate test	Sig	Partial Eta Squared
time	.00*	.81
training method	.00*	.97
time*training method	.38	.28
Test of between subjects effects	Sig	Partial Eta Squared
time*training method	.00*	.99

Legend: Sig – Statistically significant differences ( $p<0.05$ ); time – factor 1; training method – factor 2.



**Plot 2** The “Scissors” jump (time\*training method)

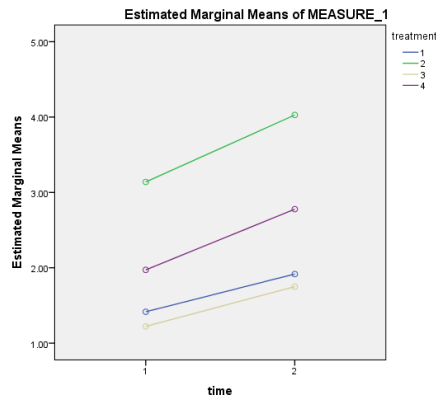
Legend: training method 1- PP (age 6 to 8.99); training method 2- PP (age 9 to 10.99); training method 3- PP +MI (age 6 to 8.99); training method 4- PP+MI (age 9 to 10.99).

The results of the Repeated Measures ANOVA for the “Cabriole” jump are shown in Table 6. The improvement of this jump technique influenced by the applied training methods is present in both the PP alone group and the PP + MI group for both age subgroups. The results show statistically significant differences for the variables time and training method ( $p=0.00$ ). Plot 3. shows that the results were higher in the PP alone group for both of the age subgroups (PP age 6 to 8.99 and PP age 9 to 10.99).

**Table 6** The results of the Repeated Measures ANOVA for the “Cabriole” jump

Multivariate test	Sig	Partial Eta Squared
time	<b>.00*</b>	.81
training method	<b>.00*</b>	.87
time*training method	.39	.27
Test of between subjects effects	Sig	Partial Eta Squared
time*training method	<b>.00*</b>	0.95

Legend: Sig – Statistically significant differences ( $p<0.05$ ); time – factor 1; training method – factor 2.



**Plot 3** The “Cabriole” jump (time\* training method)

Legend: training method 1- PP (age 6 to 8.99); training method 2- PP (age 9 to 10.99); training method 3- PP +MI (age 6 to 8.99); training method 4- PP+MI (age 9 to 10.99).

By analysing the effects of the intervention shown in Table 7., Cohen’s d thresholds indicate a large effect of the applied training method for the “Cabriole” jump in the PP alone group age 6 to 8.99 ( $d=0.90^*$ ), the “Scissors” and “Cabriole” jump for the PP +MI group age 6 to 8.99 ( $d=0.80$  and  $d=0.85$ , respectively). In the older age group (9 to 10.99) the Vertical jump stands out with a large effect ( $d=0.87$ ) in both the PP and PP + MI group. All the other effects were in the range of medium effect ( $d=0.50$  and  $>0.80$ ). The Effect size r thresholds show that all of the results are in the medium range ( $r=0.30 - 0.50$ ).

**Table 7** The Effect size results

Groups	Variables	d	r
PP alone 6-8.99	Vertical jump	.78	.36
	“Scissors”	.78	.36
	“Cabriole”	<b>.90*</b>	.41
PP + MI 6-8.99	Vertical jump	.66	.31
	“Scissors”	<b>.80*</b>	.37
	“Cabriole”	<b>.85*</b>	.40
PP alone 9-10.99	Vertical jump	<b>.87*</b>	.40
	“Scissors”	.69	.32
	“Cabriole”	.76	.37
PP + MI 9-10.99	Vertical jump	<b>.87*</b>	.40
	“Scissors”	.70	.33
	“Cabriole”	.77	.36

Legend: d – Cohen’s d, r – effect size; the PP alone group (age 6 to 8.99), PP + MI group (age 6 to 8.99), PP alone group (age 9 to 10.99), PP + MI group (age 9 to 10.99), Vertical jump – the vertical jump with straight legs and with a turn, “Scissors” – “Scissors” leaps with a switch of the legs forward, “Cabriole” – “Cabriole” forward jump.

\*Effect size (small:  $r=0.10-0.30$ ; medium:  $r=0.30-0.50$ ; large:  $r>0.50$ )

\*Cohen s d (small:  $d=0.20$ ; medium:  $d=0.50$ ; large:  $d=0.80$  and  $>$ )

## DISCUSSION

This study aimed to evaluate whether the combination of video observation, PETTLEP imagery, and physical practice could improve the quality of execution of selected jump techniques among RG novices. Our main results show that both training methods led to an improvement in the assessed RG jump techniques. The main results of this study showed that the quality of these three jump techniques was significantly improved after eight weeks of a mental training protocol combined with physical practice, which is similar to the results of the study done by Battaglia et al. (2014). Further analysis of the intervention in terms of superiority of the PP alone and PP combined with the PETTLEP method of motor imagery indicated that in this population, the physical practice alone method had a little advantage. Considering the age of the participants and their level of experience in RG, this is understandable and expected. However, the positive outcomes in effect size in the group that applied the motor imagery method indicate that this method can be a useful tool in the process of learning and mastering RG content. The study results confirmed the claim that PETTLEP imagery and physical practice could improve the quality of execution of jump techniques among RG novices. In further research, the effect of the PETTLEP method should be examined among more experienced and older RGs, considering that this method provides a more detailed experience for its practitioners and requires more attention, concentration with the aim of making the end result of imagery more successful (Wright & Smith, 2009; Lebon et al., 2010; Battaglia et al., 2014). In previous studies that applied the PETTLEP method, a smaller percentage examined its benefits on a sample younger than nine years old, and the most common age was that of seniors – 16+ years (Wright & Smith, 2009; Lebon et al., 2010; Battaglia et al., 2014). This study contributes to the imagery literature by investigating the effects of this method among participants under the age of nine (RGs start their training process at the age of four) and by highlighting important things that



needed to be considered when delivering PETTLEP imagery interventions to children (Quinton, Cumming, Gray, Geeson, Cooper, Crowley, & Williams, 2014).

The testing results of the effect of the applied PETTLEP imagery and physical practice method among the different age groups showed that both groups had similar effect size results in the range of medium effect. The only notable difference that occurred was seen in the scores gained for each jump technique among the older age group of participants (the quality of execution of their jump technique was greater). That means that after only an 8-week long intervention, the older group mastered the performance of these jump techniques better than the younger one. This is justified by the fact that jumps among RGs are a complex motor task. This suggests that applying the PETTLEP method among children 6+ years of age is possible, but certain factors such as experience and competition level must be taken into account (Quinton et al., 2014). Moreover, Quinton et al. (2014) highlighted the important aspects that need to be considered when delivering PETTLEP imagery interventions to children, such as the imagery type used, performance environment, frequency of imaging, and the performer's age and level of experience. Also, the issue of individual preference is absolutely crucial for successful interventions (Smith & Collins, 2004).

The potential benefit of the PETTLEP imagery method in the training sessions of young female RGs is that this method provides a handful of details when learning a motor task, and it can also be a useful tool for mastering the complex motor tasks, but in the case of more experienced practitioners (Smith & Collins, 2004). However, this method can be used for the improvement of strength (Wright & Smith, 2009; Wakefield & Smith, 2011), and the majority of previous studies have assessed flight time and reactivity (Arampatzis, Schade, Walsh, & Brüggemann, 2001) which is highly correlated with jumping ability (Smith et al., 2007; di Cagno, Baldari, Battaglia, Brasili, Merni, Piazza et al., 2008; di Cagno, Baldari, Battaglia, Monterio, Pappalardo, Piazza, & Guidetti, 2009). These studies also showed an improvement in muscle stiffness. Lebon et al. (2010) also reported that a combination of mental training and practice could lead to an improvement in strength, and strength and power are known to be contributing factors to high performance among RG (di Cagno, Battaglia, Giombini, Piazza, Fiorilli, Calcagno, & Borrione, 2013). Considering that jump performance in gymnastics is especially improved by eccentric muscle action (Hilfiker, Hübner, Lorenz, & Marti, 2007), the improvement in the Hopping and Drop Jump reinforces the concept that mental training, video observation, and PETTLEP can be used to enhance jump performance, to limit excessive physical work load, and post-exercise fatigue.

Within sport, deliberate and systematic imagery use has been recognized as a means of facilitating performance improvements through skill and strategy learning, as well as the regulation of thoughts, emotions, and arousal levels (Martin et al., 1999; Cumming & Williams, 2012). Interventions meant to train athletes on how to use imagery have been successfully introduced in a wide range of sports, including figure skating, flat-race horse racing, gymnastics, hockey, netball, and rugby, resulting in enhanced performance and other outcomes such as self-confidence (Cumming & Ste-Marie, 2001; Evans, Jones, & Mullen, 2004; Callow & Waters, 2005; Smith et al., 2007; Wakefield & Smith, 2011; Cooley, Williams, Burns, & Cumming, 2013).

## CONCLUSION

We were guided by the idea that the way we assessed the quality of these selected RG jump techniques was an adequate teaching method for RG novices, considering that the study participants had no previous experience in RG. A beginner training program is based on learning basic sport-specific techniques, and it is not possible to anticipate that it will have a large impact on strength and muscle stiffness and influence jump height. Therefore, we address that implementing PETTLEP with the goal of improving jump techniques in RG. Among children aged 6 to 10.99 it is possible, but certain factors such as experience, level of experience, and imagery ability must be taken into account when applying this method in their training program.

## STUDY LIMITATIONS

This study has some limitations that need to be avoided and/or corrected in future research: a small number of study participants; an absence of RG apparatus handling; the method applied only to the learning process of RG jumps of low value (0.10); it was not applied in the learning process of other specific RG body techniques such as Rotations, Balances, Pre-Acrobatic elements, Dance steps combination, etc.; it was not applied with motor tests such as strength, eccentric muscle action; it was not applied with a kinaesthetic analysis of motor tasks; PETTLEP should be included in different gymnastics disciplines; more objective tests are needed; the method was not applied with experienced or more experienced RGs regardless of age. Although the intervention included observation and imagery, we did not assess how much each of these interventions contributed to the effects obtained. Another limitation was that Movement Imagery Questionnaire-Revised was not administered as part of this intervention because of the age of the participants; a pre and post intervention imagery ability assessment would have been helpful to better test the efficacy of this mental training protocol.

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## PETTLEP METODA KAO VALIDNA METODA UČENJA ZA POBOLJŠANJE TEHNIKE SKOKOVA KOD MLADIH RITMIČKIH GIMNASTIČARKI

*PETTLEP metoda mentalnog motornog učenja (učenje putem zamišljanja) je široko primjenjivana metoda u procesu poboljšanja sportskih performansi. U poređenju sa tradicionalnijim protokolima mentalnog učenja, učenje putem zamišljanja zasnovano na PETTLEP-u pruža detaljnije iskustvo učenja. S obzirom na to da se ova metoda sastoji od domena koji pomažu postizanje boljih rezultata primenom procesa zamišljanja, kao što su fizički faktori, detalji okoline, faktori zadataka i vremena, učenje i perspektivni moment, PETTLEP metoda je napredan pristup preporučen od strane mnogih studija koje potvrđuju njenu efikasnost. Svrha ove studije bila je da se utvrde efekti PETTLEP metode učenja u treninzima mladih ritmičkih gimnastičarki na poboljšanje tehnike izvođenja elemenata skokova u ritmičkoj gimnastici (RG). U ovoj studiji učestvovalo je četrdeset devet ritmičkih gimnastičarki, početnica, uzrasta od 6 do 8.99 godina i trideset jedna uzrasta od 9 do 10.99 godina, podeljenih u dve podgrupe (sa i bez PETTLEP metode). Zajednički trenažni tretman bili su treninzi RG u trajanju od jednog sata, dva puta nedeljno, sa obaveznim zadatkom učenja i usavršavanja tehnika vertikalnog skoka sa ispruženim nogama i okretom od 3600 tokom leta, „mornarskog” skoka – „Cabriole” napred i skoka „makazice” sa promenom nogu napred iznad horizontale. Grupa 2 je primenjivala PETTLEP metodu u procesu učenja ovih tehnika. Kvalitet izvođenja tehnike skokova ocenjivan je prema modifikovanoj skali za procenu kvaliteta skokova u RG, prilagođenoj prema Pravilniku Međunarodne gimnastičke federacije, od strane domaćih i međunarodnih RG sudija. Podaci su analizirani univarijantnom analizom varijanse za ponovljena merenja, veličinom efekta R i Cohenov-im d efektom. Rezultati analize su pokazali da je do poboljšanja došlo u obe grupe. Nije bilo značajne razlike u veličini efekta tretmana između grupa.*

Ključne reči: *motorno učenje, posmatranje motornih radnji, poboljšavanje performansi*

Research article

**EXAMINING LEXICAL SELECTION IN SPORTS  
TERMINOLOGY: THE CASE OF UNDERGRADUATE STUDENTS  
OF SPORTS AND PHYSICAL EDUCATION**

UDC 800.866-057.87

**Marta V. Veličković<sup>1</sup>, Aleksandra A. Janić<sup>2</sup>**

<sup>1</sup>Department of English, Faculty of Philosophy, University of Niš, Serbia

<sup>2</sup>Department of Serbian Language and Literature, Faculty of Philosophy, University of Niš, Serbia

**Abstract.** *The subject matter of the paper is the lexical selection between Anglicisms and their Serbian equivalents in Serbian sports terminology. The paper aims to determine the current tendencies in the use of synonymous sports terms on a sample of students of sport and physical education. The measuring instrument was an online questionnaire, completed by 117 respondents. It consisted of 60 sets of sports terms, one Anglicism and one or two of its Serbian equivalents. The data were analyzed qualitatively, but the frequencies of use of the select terms were presented in percents. Working within the set hypotheses, and based on the morpho-syntactic structure of the Anglicisms, the number of lexemes of the Serbian equivalents, and the morpho-syntactic structure of the syntagms, it was determined that the morphologically simpler Anglicisms are more often selected as sports terms (for example **gol**<sub>SER.</sub> – **goal**<sub>ENG.</sub>, **servis**<sub>SER.</sub> – **serve**<sub>ENG.</sub>, **slajs**<sub>SER.</sub> – **slice**<sub>ENG.</sub>, **sparing**<sub>SER.</sub> – **sparring**<sub>ENG.</sub>, **faul**<sub>SER.</sub> – **foul**<sub>ENG.</sub>), while those with a more complex structure were selected less frequently than polylexemic Serbian equivalents, often containing postmodification (**igrač sa osnovne linije**<sub>SER.</sub> – **baseliner**<sub>ENG.</sub>, **korak sa prednožnim pogrčenjem**<sub>SER.</sub> – **knee lift**<sub>ENG.</sub>, **trka sa preponama**<sub>SER.</sub> – **steeplechase**<sub>ENG.</sub>, **udarac kroz noge**<sub>SER.</sub> – **tweener**<sub>ENG.</sub>, **utrčavanje uz čeonu liniju**<sub>SER.</sub> – **baseline cut**<sub>ENG.</sub>). The results of this study do not only have lexicographic implications. They are also relevant for the field of English for Specific Purposes (ESP), in terms of assessing the preferences of Serbian students of sport and physical education for either Anglicisms or their equivalents, thus indicating the current trends in the field of Serbian sports terminology as well. In addition, the results can also influence General English (GE) language classes meant specifically for students of sport and physical education, as well as the sports terminology used in everyday teaching practices at various faculties of sport and physical education.*

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**Corresponding author:** Marta V. Veličković

Department of English, Faculty of Philosophy, University of Niš, Ćirila i Metodija 2, 18101 Niš, Serbia

E-mail: [marta.velickovic@filfak.ni.ac.rs](mailto:marta.velickovic@filfak.ni.ac.rs)

**Key words:** *sports terminology, Anglicisms, translation, lexical selection in terminology, Serbian language*

## 1. INTRODUCTION

A term is a word or a group of words with a specialized meaning, used to denote a particular concept related to a field of study (cf. Randelović, 2015). It is a part of a broader lexical system known as terminology, and prior to being accepted undergoes a process of standardization. The meaning of a term is in part dependent on the system of lexical units it belongs to (see L'Homme (2005); Milić, 2006, 2015a; Ilinčić, 2019; Panić Kavgić (2021)).

Changes to existing systems of terminology include the introduction of new terms or the redefinition or alteration of existing ones and are usually the result of two dominant factors. The first one is the omnipresence of English as the *lingua franca*. The second is innovation in general. This leads to the internationalization of languages of science and professions (mainly through affixation and the introduction of loanwords), with a tendency towards homogenization and uniformity. If the same terms are used in a variety of L1 contexts, cascading knowledge and increasing the precision of the used terms is an expected and welcome outcome (see Randelović, 2015).

This paper aims to analyze whether a sample of students of sport and physical education select either Anglicisms or their Serbian equivalents in sports terminology. It includes a linguistic-based analysis of select sports terms. A description of this kind might lead us to determine the general tendencies in the use of sports terms, and therefore potential changes in Serbian sports terminology.

## 2. THE METHOD

A convenience sample of 117 students of the Faculty of Sport and Physical Education, University of Niš was included in the study. Students of all four years at the undergraduate level voluntarily agreed to participate: first year students made up 38.5% of the sample, second year 13.7%, third year 7.7%, and fourth year students 40.2%. The L1 of all the respondents was Serbian. On average, they had studied English for 11.26 years (with a standard deviation of 2.41), which amounts to a full elementary school education of eight years in total, and high school education which is an additional four years of school. They provided self-reported data regarding their knowledge of English: level A1 was reported by 19.7% of the respondents, A2 by 12%, B1 by 32.5%, B2 by 23.1%, C1 by 8.5%, and level C2 by 4.3%. Their average age was 20.43 years (the age range was 18 to 22, with a standard deviation of 1.5); and their distribution in terms of gender was 40 female (34.19%) and 77 male students (65.81%).

When it comes to their professional participation in competitive sports, the respondents provided the following information: 31 (26.5%) played football, 13 (11.11%) played basketball, while 8 (6.84%) each played volleyball and handball. Of the remaining students, six trained judo (5.13%), two each (1.71%) trained ping pong, gymnastics, swimming, karate, athletics, and whitewater kayaking, and one (0.85%) participated in folklore, taekwondo, sports gymnastics, tennis, boxing, futsal, orienteering, and kickboxing. The range of years of sports training, as provided by the respondents, was 3 to 20 years, on average 9.82 yrs. Considering that Serbian L1 speakers of various

professional backgrounds do not understand Anglicisms to the same extent, as exemplified by Panić Kavgić (2006), our respondents were solely students of sport and physical education well-versed in sports terminology.

A survey questionnaire, prepared in Google Forms and made available online, consisting of 60 sets of Anglicisms and either one or two of their corresponding Serbian equivalents, was distributed to the institutional addresses of the selected student population in October and November, 2022. In accordance with the existing findings that professional terminology mostly consists of nouns (Randelović, 2015; Panić Kavgić, 2021), only nouns were chosen as the stimuli in this study.

The material for the questionnaire was extracted from the following dictionaries: *Novi englesko-srpski rečnik sportskih termina* (NESRST, 2021, 1<sup>st</sup> edition), *Srpski rečnik novijih anglicizama* (SRNA, 2021, 1<sup>st</sup> edition), and *Englesko-srpski rečnik sportskih termina* (ERST, 2006, 1<sup>st</sup> edition). During the design process, the authors analyzed all the English nouns included in the aforementioned dictionaries and selected only those whose translational equivalents contained an Anglicism, and which had a monolexic or polylexemic Serbian equivalent, in order to analyze their comparability in terms of frequency of use. All the nouns included in the questionnaire are monosemic, which is congruent with sports terminology pertaining to a single sport, rather than multiple ones.

The respondents were given a forced-choice elicitation task: they were asked to select the sports term they favored out of a sequence of two or three (one Anglicism and one or two Serbian equivalents). The data obtained were analyzed primarily qualitatively, but a quantitative element was also present.

What follows are the 60 sets of synonymous Anglicisms (60 in sum) and their Serbian equivalents (76 in sum), alphabetized based on the first Anglicism in the set, as they were presented to the respondents in the questionnaire. Even though the original English language sports terms were not included in the questionnaire, they are illustrated below for clarity:

- 1) *baseliner*<sub>ENG.</sub> – *bejslajner*<sub>SER.</sub>, *igrač sa osnovne linije*<sub>SER.</sub>; 2) *baseline cut*<sub>ENG.</sub> – *bejslajnkats*<sub>SER.</sub>, *utrčavanje uz čeonu liniju*<sub>SER.</sub>; 3) *back door*<sub>ENG.</sub> – *bekdor*<sub>SER.</sub>, *prolaz iza leđa odbrane*<sub>SER.</sub>, *pritajeni napad*<sub>SER.</sub>; 4) *beach volleyball*<sub>ENG.</sub> – *bičvolejs*<sub>SER.</sub>, *odbojka na pesku*<sub>SER.</sub>; 5) *block*<sub>ENG.</sub> – *blok*<sub>SER.</sub>, *rampa*<sub>SER.</sub>, *izblokirani šut*<sub>SER.</sub>; 6) *booster*<sub>ENG.</sub> – *buster*<sub>SER.</sub>, *navijač-sponzor*<sub>SER.</sub>; 7) *visor*<sub>ENG.</sub> – *vizor*<sub>SER.</sub>, *kačket bez temena*<sub>SER.</sub>; 8) *winner*<sub>ENG.</sub> – *viner*<sub>SER.</sub>, *direktan poen*<sub>SER.</sub>; 9) *goal*<sub>ENG.</sub> – *gol*<sub>SER.</sub>, *pogodak*<sub>SER.</sub>; 10) *goal-getter*<sub>ENG.</sub> – *golgeter*<sub>SER.</sub>, *najbolji strelac*<sub>SER.</sub>; 11) *double-double*<sub>ENG.</sub> – *dabl dabl*<sub>SER.</sub>, *dvostruki dvocifreni učinak*<sub>SER.</sub>; 12) *double-footed*<sub>ENG.</sub> – *dabl futer*<sub>SER.</sub>, *igrač koji koristi obe noge*<sub>SER.</sub>, *igrač koji dobro igra obema nogama*<sub>SER.</sub>; 13) *downhill*<sub>ENG.</sub> – *daunhil*<sub>SER.</sub>, *spust*<sub>SER.</sub>, *slobodni spust*<sub>SER.</sub>; 14) *dribbling*<sub>ENG.</sub> – *dribling*<sub>SER.</sub>, *vođenje lopte*<sub>SER.</sub>, *vođenje lopte sa fintom*<sub>SER.</sub>; 15) *dribbler*<sub>ENG.</sub> – *dribler*<sub>SER.</sub>, *igrač koji je prevario protivnika*<sub>SER.</sub>; 16) *drop shot*<sub>ENG.</sub> – *drop-šot*<sub>SER.</sub>, *skraćena lopta*<sub>SER.</sub>; 17) *add-out*<sub>ENG.</sub> – *ed-aut*<sub>SER.</sub>, *prednost primača servisa*<sub>SER.</sub>; 18) *add-in*<sub>ENG.</sub> – *ed-in*<sub>SER.</sub>, *prednost servera*<sub>SER.</sub>; 19) *L-grip*<sub>ENG.</sub> – *elgrip*<sub>SER.</sub>, *izvrnuti hvat*<sub>SER.</sub>; 20) *carving skis*<sub>ENG.</sub> – *karving skije*<sub>SER.</sub>, *skije sa izraženom bočnom geometrijom*<sub>SER.</sub>; 21) *cutman*<sub>ENG.</sub> – *katmen*<sub>SER.</sub>, *osoba zadužena za posekotine i povrede*<sub>SER.</sub>; 22) *kicker*<sub>ENG.</sub> – *kiker*<sub>SER.</sub>, *rampa za skokove, skakaonica na stazi*<sub>SER.</sub>; 23) *coaching*<sub>ENG.</sub> – *koučing*<sub>SER.</sub>, *savetovanje tokom meča*<sub>SER.</sub>; 24) *cross step*<sub>ENG.</sub> – *kros-step*<sub>SER.</sub>, *iskorak ka lopti*<sub>SER.</sub>; 25) *matchmaker*<sub>ENG.</sub> – *mečmejker*<sub>SER.</sub>, *ugovarač meča*<sub>SER.</sub>; 26) *knee lift*<sub>ENG.</sub> – *nilift*<sub>SER.</sub>, *korak sa prednožnim pogrcenjem*<sub>SER.</sub>; 27) *pass*<sub>ENG.</sub> – *pas*<sub>SER.</sub>, *dodavanje*<sub>SER.</sub>; 28) *playmaker*<sub>ENG.</sub> –

*plejmejker*<sub>SER.</sub>, *kreators igre*<sub>SER.</sub>; 29) *play-off*<sub>ENG.</sub> – *plejof*<sub>SER.</sub>, *doigravanje*<sub>SER.</sub>; 30) *reserve*<sub>ENG.</sub> – *rezerva*<sub>SER.</sub>, *rezervni igrač*<sub>SER.</sub>, *zamena*<sub>SER.</sub>; 31) *record*<sub>ENG.</sub> – *rekord*<sub>SER.</sub>, *najbolji rezultat*<sub>SER.</sub>; 32) *rival*<sub>ENG.</sub> – *rival*<sub>SER.</sub>, *protivnik*<sub>SER.</sub>, *protivnički igrač*<sub>SER.</sub>; 33) *return*<sub>ENG.</sub> – *ritern*<sub>SER.</sub>, *vraćen servis*<sub>SER.</sub>, *povratni udarac*<sub>SER.</sub>; 34) *sidecut*<sub>ENG.</sub> – *sajdkat*<sub>SER.</sub>, *bočni luk skije*<sub>SER.</sub>; 35) *side step*<sub>ENG.</sub> – *sajd-step*<sub>SER.</sub>, *bočni korak*<sub>SER.</sub>, *korak u stranu*<sub>SER.</sub>; 36) *serve*<sub>ENG.</sub> – *servis*<sub>SER.</sub>, *početni udarac*<sub>SER.</sub>; 37) *slice*<sub>ENG.</sub> – *slajs*<sub>SER.</sub>, *zasečena lopta*<sub>SER.</sub>; 38) *snowboarding*<sub>ENG.</sub> – *snoubording*<sub>SER.</sub>, *skijanje na dasci*<sub>SER.</sub>; 39) *sparring*<sub>ENG.</sub> – *sparing*<sub>SER.</sub>, *vežbanje sa partnerom*<sub>SER.</sub>; 40) *split step*<sub>ENG.</sub> – *split-step*<sub>SER.</sub>, *međukorak*<sub>SER.</sub>, *pripremni korak*<sub>SER.</sub>; 41) *steeplechase*<sub>ENG.</sub> – *stiplčejs*<sub>SER.</sub>, *trka sa preponama*<sub>SER.</sub>; 42) *striker*<sub>ENG.</sub> – *strajker*<sub>SER.</sub>, *centarfor*<sub>SER.</sub>; 43) *tie-break*<sub>ENG.</sub> – *tajbrejk*<sub>SER.</sub>, *peti set*<sub>SER.</sub>; 44) *tweener*<sub>ENG.</sub> – *tviner*<sub>SER.</sub>, *udarac kroz noge*<sub>SER.</sub>; 45) *team*<sub>ENG.</sub> – *tim*<sub>SER.</sub>, *ekipa*<sub>SER.</sub>, *grupa igrača*<sub>SER.</sub>; 46) *triple-double*<sub>ENG.</sub> – *tripldabl*<sub>SER.</sub>, *trostruki dvocifreni učinak*<sub>SER.</sub>; 47) *fan club*<sub>ENG.</sub> – *fan-klub*<sub>SER.</sub>, *navijački klub*<sub>SER.</sub>; 48) *foul*<sub>ENG.</sub> – *faul*<sub>SER.</sub>, *greška*<sub>SER.</sub>, *prekršaj*<sub>SER.</sub>; 49) *fair play*<sub>ENG.</sub> – *fer-plej*<sub>SER.</sub>, *korektna igra*<sub>SER.</sub>; 50) *finish*<sub>ENG.</sub> – *finiš*<sub>SER.</sub>, *završetak utakmice*<sub>SER.</sub>; 51) *feint*<sub>ENG.</sub> – *finta*<sub>SER.</sub>, *varka telom*<sub>SER.</sub>; 52) *floater*<sub>ENG.</sub> – *flouter*<sub>SER.</sub>, *šut sa visokim lukom*<sub>SER.</sub>; 53) *freestyle*<sub>ENG.</sub> – *fristajl*<sub>SER.</sub>, *slobodan stil*<sub>SER.</sub>; 54) *futsal*<sub>ENG.</sub> – *futsal*<sub>SER.</sub>, *mali fudbal u dvorani*<sub>SER.</sub>; 55) *hot shot*<sub>ENG.</sub> – *hotšot*<sub>SER.</sub>, *spektakularan udarac*<sub>SER.</sub>; 56) *challenge*<sub>ENG.</sub> – *čelendž*<sub>SER.</sub>, *protest*<sub>SER.</sub>, *osporavanje sudijske odluke*<sub>SER.</sub>; 57) *jumping jack*<sub>ENG.</sub> – *džamping-džek*<sub>SER.</sub>, *poskok raznožno*<sub>SER.</sub>; 58) *shot clock*<sub>ENG.</sub> – *šotklok*<sub>SER.</sub>, *sat za servis*<sub>SER.</sub>, *štoperica za servis*<sub>SER.</sub>; 59) *shooter*<sub>ENG.</sub> – *šuter*<sub>SER.</sub>, *strelac*<sub>SER.</sub>; 60) *shooting*<sub>ENG.</sub> – *šutiranje*<sub>SER.</sub>, *upućivanje lopte ka голу*<sub>SER.</sub>, *pucanje*<sub>SER.</sub>

The list of English language sports terms, given in alphabetical order, along with the corresponding Anglicisms and their Serbian equivalents, can be found in the Appendix section of this paper, presented in table form (Table 1).

### 3. THE RESULTS

In the following two subsections we analyze the Anglicisms and their Serbian equivalents separately, based on which ones were predominantly selected by the respondents, and provide a morpho-syntactic analysis of the provided responses. Of the 60 sets of sports terms included in the questionnaire, the respondents selected the Anglicism 33 times (in 55% of the cases), and a Serbian equivalent 27 times (in 45% of the cases).

#### 3.1. The Anglicisms predominantly selected by the respondents over to their Serbian equivalents

Of these 33 sets, one Anglicism and two Serbian equivalents were provided in 7 of them (21%), while the remaining 26 sets consisted of just one Anglicism and one equivalent (79%). The percent of responses obtained for the Anglicisms ranged from 51.3% (*koučing*) to 92.3% (*fer-plej*). The range for their Serbian equivalents is from 0.9% (*grupa igrača*) to 48.7% (*savetovanje tokom meča*). In each instance a strong predilection for the Anglicism is evident, based on the high percent values, which also speaks in favor of their entrenchment. What follows is a list of these Anglicisms, in descending order, based on the recorded responses:



*fer-plej* (92.3%) – *korektna igra* (7.7%); *sparing* (91.5%) – *vežbanje sa partnerom* (8.5%); *plejmejker* (89.7%) – *kreator igre* (10.3%); *šutiranje* (88.9%) – *upućivanje lopte ka голу* (9.4%) – *pucanje* (1.7%); *plejof* (88%) – *doigravanje* (12%); *finta* (87.2%) – *varka telom* (12.8%); *servis* (85.5%) – *početni udarac* (14.5%); *gol* (84.6%) – *pogodak* (15.4%); *dribler* (83.8%) – *igrač koji je prevario protivnika* (16.2%); *faul* (83.8%) – *prekršaj* (13.7%) – *greška* (2.6%); *futsal* (83.8%) – *mali fudbal u dvorani* (16.2%); *snoubording* (82.9%) – *skijanje na dasci* (17.1%); *tripldabl* (81.2%) – *trostruki dvocifreni učinak* (18.8%); *dribling* (79.5%) – *vođenje lopte* (12.8%) – *vođenje lopte sa fintom* (7.7%); *karving skije* (76.9%) – *skije sa izraženom bočnom geometrijom* (23.1%); *čelendž* (76.9%) – *osporavanje sudijske odluke* (16.2%) – *protest* (6.8%); *pas* (76.9%) – *dodavanje* (23.1%); *dabldabl* (76.1%) – *dvostruki dvocifreni učinak* (23.9%); *drop-šot* (70.9%) – *skraćena lopta* (29.1%); *fristajl* (70.9%) – *slobodan stil* (29.1%); *slajs* (70.1%) – *zasečena lopta* (29.9%); *tajbrejk* (69.2%) – *peti set* (30.8%); *vizor* (68.4%) – *kačket bez temena* (31.6%); *rekord* (67.5%) – *najbolji rezultat* (32.5%); *ritern* (64.1%) – *vraćen servis* (22.2%) – *povratni udarac* (13.7%); *blok* (61.5%) – *rampa* (22.2%) – *izblokirani šut* (16.2%); *viner* (60.7%) – *direktan poen* (39.3%); *mečmejker* (59%) – *ugovarač meča* (41%); *tim* (58.1%) – *ekipa* (41%) – *grupa igrača* (0.9%); *džamping-džek* (54.7%) – *poskok raznožno* (45.3%); *flouter* (54.7%) – *šut sa visokim lukom* (45.3%); *finiš* (53.8%) – *završetak utakmice* (46.2%); *koučing* (51.3%) – *savetovanje tokom meča* (48.7%).

The widely selected Anglicisms were mostly monolexic terms (such as *gol*, *futsal*), with the exception of the syntagm *karving skije*. They took the following forms: hyphenated words, gerunds, and nouns ending in the derivational suffix *-er* (nomina agentis, i.e. nouns referring to individuals performing the activity indicated by the verb they were derived from, such as *player*<sub>ENG.</sub> and *plejer*<sub>SER.</sub>). The equivalents were rarely monolexic nouns (*ekipa*). Only in the case of *faul* – *prekršaj* – *greška*, *pas* – *dodavanje*, *gol* – *pogodak*, *plejof* – *doigravanje* did the Serbian equivalents solely take the form of single words (nouns). All the remaining items were syntagms: the most frequently occurring were nominal phrases with premodification such as Adj<sup>1</sup> + N (*direktan poen*, *korektna igra*), followed by syntagms which include postmodification such as N + N (*grupa igrača*, *varka telom*), N + PP (*skijanje na dasci*, *skije sa izraženom bočnom geometrijom*), participial phrases with an (occasional) direct object, such as *upućivanje lopte ka голу*, or a N + RC (*igrač koji je prevario protivnika*).

The Serbian equivalents to the gerunds (*dribling*, *koučing*, *snoubording*, *sparing*) also predominantly took the form of postmodified noun phrases, but mostly with the addition of a PP (*vođenje lopte sa fintom*, *savetovanje tokom meča*, *skijanje na dasci*, and *vežbanje sa partnerom*, and one instance of a N + N structure: *vođenje lopte*).

The equivalents to the nomina agentis (*dribler*, *mečmejker*, *plejmejker*) were a relative clause (*igrač koji je prevario protivnika*), and N + N syntagms (*ugovarač meča*, *kreator igre*), respectively. For the three remaining terms ending in the derivational suffix *-er*: *flouter* (a type of serve in tennis), *viner* (a type of point scored in tennis), and *vizor* (a part of the apparel worn in golf), the Serbian equivalents also included the structure of modification, either as N + PP (*šut sa visokim lukom* for *flouter*, *kačket bez temena* for *vizor*) or Adj + N (*direktan poen* for *viner*).

<sup>1</sup> The following abbreviations were used in the paper: Adj – adjective, N – noun, V – verb, PP – prepositional phrase, i.e. a combination of a preposition and a noun, and RC – relative clause.

The hyphenated terms, *drop-šot*, *džamping-džek*, and *fer-plej*, were selected over the Serbian equivalents that took the form of modified NPs (two instances of premodification: *korektna igra* for *fer-plej* and *skraćena lopta* for *drop-šot*, and one of postmodification: *poskok raznožno* for *džamping-džek*).

Among the Anglicisms there were also terms which indicated signs of compounding: *dabldabl*, *fristajl*, *mečmejker*, *plejmejker*, *plejof*, *snoubording*, *tajbrejk*, *tripldabl*. Two of the compounds, *mečmejker* and *plejmejker*, were of a more complex structure, as the process of compounding (*to make a match – match making – matchmaker* i.e. *mečmejker* and *to make a play – play making – playmaker* i.e. *plejmejker*) was also accompanied by the process of further derivation through the addition of the derivational suffix *-er*. In these two instances, the compounds were derived from a V + N combination. This is reflected in their Serbian equivalents, which are evidently descriptive definitions (*ugovarač meča* and *kreators igre*). A similar example is *tajbrejk*, (*breaking a tie – tie break* i.e. *tajbrejk*). Its Serbian equivalent shows evidence of this structure: *peti set*. *Snoubording* may be treated as a similar example. Due to the addition of the inflectional suffix *-ing* to the compound consisting of *snow + board*, we have yet another example of a complex-compound term, whose Serbian equivalent is in the form of a descriptive definition: *skijanje na dasci*. Of the remaining compounds, *dabldabl* and *tripldabl* are examples of a compounding process that involves adjectives and in the former example, even the process of reduplication. The Serbian equivalents are in this instance more of a descriptive definition rather than anything else (*dvostruki dvocifreni učinak* and *trostruki dvocifreni učinak*). However, the presence of premodification is evident. The structure of modification was also replicated in the example *fristajl* and is reflected in its Serbian equivalent: *slobodni stil*. *Plejof* appears to be the only example of its kind that was the result of a compounding process involving a phrasal verb (*to play off*). It, however, has a Serbian equivalent, *doigravanje*, which led certain authors to conclude that it is in fact an unjustifiable Anglicism (Radojković, 2018).

It comes as no surprise that the selection of Anglicisms was predominant in the aforementioned examples, considering that the terms mostly originated from English-speaking countries (with the exception of sports terms pertaining to karate, wrestling, and skiing). Innovations, developments, and the broadcasting of matches and games in these sports cascade into other languages via English and are adopted for ease of communication. The general sports terms which were at the same time Anglicisms and which were most often selected by the respondents included *džamping-džek – poskok raznožno*, *fer-plej – korektna igra*, *finiš – završetak utakmice*, *finta – varka telom*, *koučing – savetovanje tokom meča*, *rekord – najbolji rezultat*, *tim – ekipa – grupa igrača*. These too came as no surprise, due to once again their widespread use and recognized status. In this instance, frequency of occurrence, even in everyday language, may have played a defining role.

### 3.2. The Serbian equivalents predominantly selected by the respondents over the corresponding Anglicisms

Of the 27 sets, one Anglicism and two Serbian equivalents were provided in 9 of them (33.33%), while the remaining 18 sets consisted of one Anglicism and just one equivalent (66.67%). In those cases where an Anglicism was accompanied by two equivalents, we calculated the sum of the percentages of both equivalents as the dominant choice. The percent range of individual equivalents in this section is from 18.18% (*rezervni igrač*) to 87.2% (*utrčavanje uz čeonu liniju*), and for the Anglicisms from 9.4% (*kiker*, *dablfter*) to 47%

(šuter). For ease of comparison with the previous lists, what follows are the Serbian equivalents the respondents selected over the provided synonymous Anglicism, presented in descending order, whereby the first term is always the corresponding Anglicism:

*bejslajnkat* (12.8%) – *utrčavanje uz čeonu liniju* (87.2%); *tviner* (15.4%) – *udarac kroz noge* (84.6%); *bejslajner* (17.1%) – *igrač sa osnovne linije* (82.9%); *bičvolej* (17.1%) – *odbojka na pesku* (82.9%); *stiplčejs* (17.1%) – *trka sa preponama* (82.9%); *strajker* (18.8%) – *centarfor* (81.2%); *fan-klub* (18.8%) – *navijački klub* (81.2%); *nilift* (21.4%) – *korak sa prednožnim pogrčenjem* (78.6%); *elgrip* (22.2%) – *izvrnuti hvat* (77.8%); *buster* (23.1%) – *navijač-sponzor* (76.9%); *golgeter* (25.6%) – *najbolji strelac* (74.4%); *ed-in* (26.5%) – *prednost servera* (73.5%); *ed-aut* (27.4%) – *prednost primača servisa* (72.6%); *hotšot* (32.8%) – *spektakularan udarac* (67.2%); *kros-step* (34.2%) – *iskorak ka lopti* (65.8%); *sajdkat* (34.2%) – *bočni luk skije* (65.8%); *katmen* (35%) – *osoba zadužena za posekotine i povrede* (65%); *split-step* (23.9%) – *međukorak* (60.7%) – *pripremni korak* (15.4%); *rival* (28.2%) – *protivnički igrač* (14.5%) – *protivnik* (57.3%); *šuter* (47%) – *strelac* (53%); *bekdor* (29.1%) – *prolaz iza leđa odbrane* (52.1%) – *pritajeni napad* (18.8%); *daunhil* (12.8%) – *spust* (51.3%) – *slobodni spust* (35.9%); *kiker* (9.4%) – *rampa za skokove* (47.9%) – *skakaonica na stazi* (42.7%); *dablfuter* (9.4%) – *igrač koji dobro igra obema nogama* (47%) – *igrač koji koristi obe noge* (43.6%); *sajd-step* (29.1%) – *korak u stranu* (42.7%) – *bočni korak* (28.2%); *šotklok* (29.1%) – *sat za servis* (42.7%) – *štoperica za servis* (28.2%); *rezerva* (46.2%) – *zamena* (35%) – *rezervni igrač* (18.8%).

Monolexic equivalents which were selected over the Anglicisms are not frequent, and include the following nouns: *centarfor*, *međukorak*, *protivnik*, *spust*, *strelac*, *zamena*. On the other hand, syntagms consisting of a N + PP combination are more frequent (*odbojka na pesku*, *trka sa preponama*, *udarac kroz noge*), as are those with an Adj + N structure (*izvrnuti hvat*, *najbolji strelac*, *navijački klub*), while N + N combinations are infrequent (*prednost servera*). The only hyphenated item among all the selected equivalents was *navijač-sponzor*.

The Anglicisms not selected over their Serbian equivalent, and which are also derivatives, are predominantly nomina agentis (specifically *buster*, *golgeter*, *strajker*, *šuter*), while one Anglicism each refers to a movement (*tviner*) and an object (*kiker*).

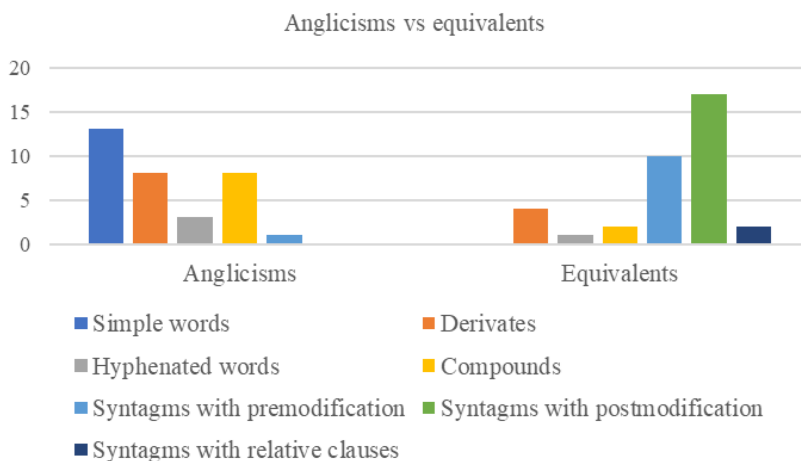
Anglicisms in the form of hyphenated words which the respondents did not select included *ed-aut*, *ed-in*, *fan-klub*, *kros-step*, *sajd-step* and *split-step*, whereby their Serbian equivalents mostly took the form of syntagms: *prednost primača servisa* for *ed-aut*, *prednost servera* for *ed-in*, *navijački klub* for *fan-klub*, *iskorak ka lopti* for *kros-step*, *korak u stranu* for *sajd-step*, but also compounds: *međukorak* for *split-step*.

In the case of thirteen compound nominal Anglicisms, which are predominantly motivated by nominal syntagms in English, the respondents still selected the polylexemic Serbian equivalents, contrary to the conclusions of Milić et al. (2019) and Tomić (2018). The Anglicisms in question are *bejslajnkat*, *bekdor*, *bičvolej*, *dablfuter*, *daunhil*, *elgrip*, *hotšot*, *katmen*, *nilift*, *sajdkat*, *stiplčejs*, *šotklok*.

Non-motivated Anglicisms in Serbian are *rezerva* and *rival*, which originate from French and German, respectively, whereby the replacements for *rezerva* are the terms *zamena* (35%) and *rezervni igrač* (18.8%) and for *rival* are the terms *protivnik* (57.3%) and *protivnički igrač* (14.5%).

A special case are those sets where the Anglicisms had two Serbian equivalents, where the respondents predominantly (over 50%) selected one of the equivalents, as in the case of the equivalents *međukorak* (60.7%), *protivnik* (57.3%), *prolaz iza leđa odbrane* (52.1%), *spust* (51.3%). In the remaining cases, both equivalents were selected more often than the Anglicism, specifically *rampa za skokove* (47.9%) and *skakaonica na stazi* (42.7%), *igrač koji dobro igra obema nogama* (47%) and *igrač koji koristi obe noge* (43.6%), *korak u stranu* (42.7%) and *bočni korak* (28.2%), *sat za servis* (42.7%) and *štoperica za servis* (28.2%), *zamena* (35%) and *rezervni igrač* (18.8%).

A graphic representation of the results for both types of sports terms, the most frequently Anglicisms and their Serbian equivalents, listed side-by-side, can be found in Graph 1.



**Graph 1** The morpho-syntactic analysis of the Anglicisms and Serbian equivalents most frequently selected by the respondents

#### 4. DISCUSSION

At a time when English dominates the field of international sport (in terms of names of associations, championships, sports journalism in general), it is understandable that the entry of English language words into numerous languages might make lexicologists more concerned about the standardization of sports terminology in non-English speaking communities, about determining whether L1 words (equivalents) are the norm, or whether this label now belonged to Anglicisms. An increased occurrence of Anglicisms in sports terminology may be expected (Tomić, 2018), both as translational equivalents, but also as denotational supplements rather than substitutes (Milić, 2013b, 77). It may happen that a single Anglicism has more than one equivalent, which are usually mutually interchangeable. Dudurgova (Дудургова, 2017), for example, concluded that Anglicisms are not always adopted to the same extent, and are therefore mastered, semi-mastered, or unmastered terminology. Combined with the fact that not all Serbian L1 speakers understand Anglicisms to the same extent (Panić Kavgić, 2006), an opportunity presented itself to re-evaluate the

objective lexical selection between Anglicisms and their Serbian equivalents in a population of trained athletes and students of sports and physical education.

With that in mind, the analyses of the formulated hypotheses are presented below.

Sports terms in the form of Serbian equivalents, which were derived from descriptive definitions of Anglicisms, can in fact become the norm in Serbian terminology, despite opinions to the contrary. Evidence confirming this hypothesis was found among the Serbian equivalents which were selected over the corresponding Anglicisms. This indicates the gradual transition from the Anglicism to the vernacular, as described in Klegr and Bozdechova (2019). A definite, albeit not dominant, trend was noted in this segment of the student population towards Serbian equivalents (45%). Tomić (2018) made the claim that this speaks in favor of the entrenchment of certain terms in the vernacular, among other reasons due to exposure as indicated in Ayakulov (2019), which renders the adoption of Anglicisms unjustifiable. In our case, illustrative examples of this kind include: *utrčavanje uz čeonu liniju; udarac kroz noge; igrač sa osnovne linije; trka sa preponama; korak sa prednožnim pogrčenjem; izvrnuti хват; najbolji strelac; prednost servera; prednost primača servisa; spektakularan udarac; iskorak ka lopti; bočni luk skije; osoba zadužena za posekotine i povrede; prolaz iza leđa odbrane; rampa za skokove; and skakaonica na stazi.*

The respondents will, adhering to linguistic economy, more often select monolexemic Anglicisms than their Serbian equivalents which take the form of syntagms. The claim for linguistic economy, which will not affect the semantic component of a term, was made not only by Tomić (2018) but also by Milić (2013a, 81). The monolexemic Anglicisms predominantly selected in this study are: *dabldabl, dribler, dribling, finiš, finta, flouter, fristajl, futsal, koučing, mečmejker, plejmejker, rekord, ritern, servis, slajs, snoubording, sparing, tajbrejk, tripldabl, viner, vizor.* As they make up one-third of all the Anglicisms included in this study, these findings provide support for hypothesis two.

The hypothesis that morphologically simple Anglicisms will be preferred by the respondents over their Serbian equivalents, while the Serbian equivalents will be preferred over morphologically more complex Anglicisms has been confirmed. The predominantly selected morphologically simple Anglicism include: *dribling (vođenje lopte – vođenje lopte sa fintom), finiš (završetak utakmice), finta (varka telom), futsal (mali fudbal u dvorani), gol (pogodak), koučing (savetovanje tokom meča), pas (dodavanje), rekord (najbolji rezultat), ritern (vraćen servis, povratni udarac), servis (početni udarac), slajs (zasečena lopta), sparing (vežbanje sa partnerom), vizor (kačket bez temena).* The predominantly selected Serbian equivalents compared to the morphologically more complex Anglicisms include: *bočni luk skije (sajdkat), igrač koji dobro igra obema nogama and igrač koji koristi obe noge (dablfuter), izvrnuti хват (elgrip), korak sa prednožnim pogrčenjem (nilift), odbojka na pesku (bičvolej), osoba zadužena za posekotine i povrede (katmen), prolaz iza leđa odbrane (bekdor), sat za servis (šotklok), spektakularan udarac (hotšot), trka sa preponama (stiplčejs), and utrčavanje uz čeonu liniju (bejslajnkat).*

The derived Anglicisms which were predominantly selected by the respondents over their equivalents in the form of syntagms include *dribler, flouter, šutiranje,* and *viner,* while the structure of the equivalents which were selected over the Anglicisms, such as *buster, kiker, strajker, šuter,* and *tviner,* varied considerably (it included syntagms, monolexemic equivalents, and hyphenated words).

In total, 9 hyphenated items were included in the questionnaire. In line with hypothesis three, the respondents selected Anglicisms in the form of hyphenated items (*drop-šot,*

*džamping-džek, fer-plej*) over Serbian equivalents in 33% of all cases. The Anglicisms that the respondents predominantly did not select included: *ed-aut*, *ed-in*, *fan-klub*, *kros-step*, *sajd-step*, and *split-step*; they selected their Serbian equivalents in the form of syntagms in 67% of all cases. The percent of compound Anglicisms selected over their Serbian equivalents made up a considerably small percent of all the compounds included in the study, 38.1%. In other words, in 61.9% of the complex nominal Anglicisms, the respondents gave an advantage to the polylexemic Serbian equivalents. The examples include the following Anglicisms: *bejslajnkat*, *bekdor*, *bičvolej*, *dablfuter*, *daunhil*, *elgrip*, *hotšot*, *katmen*, *nilift*, *sajdkat*, *stiplčejs*, *šotklok*. Thereby, hypothesis three was confirmed.

Despite their complex morphological makeup (in three instances there was additional derivation added on to the compounding process), the fact that Serbian equivalents were selected by the respondents with a high rate of frequency indicates the considerable entrenchment of these compounds in Serbian sports terminology. Neither language economy, nor a shift to the vernacular seem to have played a considerable role in this instance, as the equivalents themselves were mostly of the same level of complexity as the Anglicisms. This may be evidence of de-anglicization in Serbian sports terminology (a term borrowed from Klegr and Bozdechova (2019)), whereby the status of a sports term in a linguistic system is inextricably linked to the popularity of the sport in question, and the length of its presence in the target (L1) culture. In the aforementioned examples, it may be that neither the level of popularity nor the presence of these terms was sufficient to warrant a preference for the Anglicisms. It is difficult to determine whether linguistic economy will win over entrenchment, or vice versa, and it may be a decision that has to be made on a case-to-case basis. However, considering the strong cultural significance of sport in the Serbian linguistic environment, it is necessary to re-assess the progress of these two factors at regular intervals.

In the *NESRST* dictionary the authors point out that numerous sports terms in the English language have more than one translational equivalent, and that they have therefore been listed in the dictionary based on prominence which includes congruence with the principles of standardization: the first term listed is unambiguous, motivated, congruent with the standards of the Serbian language, is the shortest, and the most frequent (Milić, 2006, 57-90; Milić, 2015a). The data obtained in the questionnaire indicated a more objective view of the frequency of use of Anglicisms in sport, as well as their equivalents, compared to the list of equivalents provided in existing terminological dictionaries. Specifically, a 40% difference was noted (in 24 of the 60 sets) in the order in which the synonymous sports terms were listed, that is, differences in the noted frequency of use compared to the suggested level of standardization in the selected dictionaries.

The two/three part sets of Anglicisms and their equivalents where a difference was noted in the order of the respondents' frequency of use of the sports terms compared to that of the analyzed dictionaries of Serbian sports terms are the following: *čelendž*<sub>1</sub><sup>2</sup> (76.9%) – *osporavanje sudijske odluke*<sub>3</sub> (16.2%) – *protest*<sub>2</sub> (6.8%); *tim*<sub>2</sub> (58.1%) – *ekipa*<sub>1</sub> (41%) – *grupa igrača*<sub>3</sub> (0.9%); *fristajl*<sub>2</sub> (70.9%) – *slobodan stil*<sub>1</sub> (29.1%); *viner*<sub>2</sub> (60.7%) – *direktan poen*<sub>1</sub> (39.3%); *mečmejker*<sub>2</sub> (59%) – *ugovarač meča*<sub>1</sub> (41%); *koučing*<sub>2</sub> (51.3%) – *savetovanje tokom meča*<sub>1</sub> (48.7%); *utrčavanje uz čeonu liniju*<sub>2</sub> (87.2%) – *bejslajnkat*<sub>1</sub> (12.8%); *ударac kroz noge*<sub>2</sub> (84.6%) – *tviner*<sub>1</sub> (15.4%); *odbojka na pesku*<sub>2</sub> (82.9%) – *bičvolej*<sub>1</sub> (17.1%); *trka sa*

<sup>2</sup> The subscripts indicate the order given in the analyzed dictionaries of sports terms, mainly the *Novi englesko-srpski rečnik sportskih termina*.

*preponama*<sub>2</sub> (82.9%) – *stiplčejs*<sub>1</sub> (17.1%); *navijački klub*<sub>2</sub> (81.2%) – *fan-klub*<sub>1</sub> (18.8%); *korak sa prednožnim pogrcenjem*<sub>2</sub> (78.6%) – *nilift*<sub>1</sub> (21.4%); *najbolji strelac*<sub>2</sub> (74.4%) – *golgeter*<sub>1</sub> (25.6%); *bočni luk skije*<sub>2</sub> (65.8%) – *sajdkat*<sub>1</sub> (34.2%); *osoba zadužena za posekotine i povrede*<sub>2</sub> (65%) – *katmen*<sub>1</sub> (35%); *strelac*<sub>2</sub> (53%) – *šuter*<sub>1</sub> (47%); *međukorak*<sub>1</sub> (60.7%) – *split-step*<sub>3</sub> (23.9%) – *pripremni korak*<sub>2</sub> (15.4%); *protivnik*<sub>2</sub> (57.3%) – *protivnički igrač*<sub>3</sub> (14.5%) – *rival*<sub>1</sub> (28.2%); *spust*<sub>1</sub> (51.3%) – *slobodni spust*<sub>2</sub> (35.9%) – *daunhil*<sub>3</sub> (12.8%); *skakaonica na stazi*<sub>3</sub> (42.7%) – *rampa za skokove*<sub>2</sub> (47.9%) – *kiker*<sub>1</sub> (9.4%); *igrač koji dobro igra obema nogama*<sub>3</sub> (47%) – *igrač koji koristi obe noge*<sub>1</sub> (43.6%) – *dablfuler*<sub>2</sub> (9.4%), *korak u stranu*<sub>2</sub> (42.7%) – *sajd-step*<sub>3</sub> (29.1%) – *bočni korak*<sub>1</sub> (28.2%); *sat za servis*<sub>1</sub> (42.7%) – *šotklok*<sub>3</sub> (29.1%) – *štoperica za servis*<sub>2</sub> (28.2%); *rezerva*<sub>2</sub> (46.2%) – *zamena*<sub>3</sub> (35%) – *rezervni igrač*<sub>1</sub> (18.8%).

The Serbian equivalents tended to take various forms in terms of syntagmatic structure and included examples of premodification (in the form of Adjs), or postmodification (mostly PPs, RCs, or Ns). In cases when the respondents to a greater extent selected equivalents in the form of syntagms, 10 instances showed signs of premodification (35.71%) in the form of adjectivals, while 18 instances showed signs of post-modification (64.29%) including clauses, nominals, NPs, and PPs. Therefore, we can conclude that when an Anglicism has not been fully adapted into the lexical system of the Serbian language (for example, *nilift*, *elgrip*, *stiplčejs*), there is a greater likelihood that a syntagm containing postmodification will be used than one containing premodification. In the case of Anglicisms which were the respondents' primary choice, the Serbian equivalents did not differ considerably in terms of the presence of pre-modification (14 items or 52%) and post-modification (13 items or 48%). The remaining items excluded from analysis were examples of pre-modification and post-modification, as well as hyphenated words. The syntactic structure of the Serbian equivalents was apparently more significant in those instances when they were selected over the corresponding Anglicism.

Finally, membership in a particular sports terminology has not proven to be a deciding factor. The selected terms were mostly Anglicisms from ball sports, while the equivalents were from tennis, or belonged to general sports terminology.

## 5. CONCLUSION

The prevalence of synonyms in Serbian sports terminology in the form of adapted Anglicisms and their Serbian equivalents is the outcome of several factors: the dominance of the English language in the globalization processes, the development of new sports, the distribution of sports-related information via Anglicized media, sports commentators, ease of communication on a global scale and attempts to avoid miscommunication, as well as existing gaps in the terminology or mental lexicon, inter alia.

The paper aimed to analyze the current and objective lexical selection between Anglicisms and their equivalents in Serbian sports terminology. These sports terms were subjected to a morpho-syntactic analysis, so that their use from the point of view of the respondents could be further determined. The paper analyzed the responses that 117 students of sport and physical education provided for 60 sets of sports terms, which were combinations of Anglicisms and their equivalents. In general, the respondents may have tended to select Anglicisms more frequently, but only slightly. The morpho-syntactic analysis of the responses indicated that an increase in the complexity of the morphological

structure of the Anglicisms (ranging from simple and derived, to hyphenated and finally compound Anglicisms) was likely to lead to a Serbian equivalent in the form of a syntagm (which mostly includes postmodification) being used in its stead. In the case of Anglicisms with a simpler morphological structure, language economy and brevity seem to play a more significant role, leading the respondents to select the Anglicism. At the same time, entrenchment was also determined to be a factor of some importance, while particular types of sport were not.

The limitations of the study refer to the sample of respondents and the questionnaire itself. Despite the responses not varying across respondents from all four years of study, it is possible that their uneven distribution impacted the results, along with the fact that our sample was extracted from a single population of students attending one university and one field of study. Furthermore, the impact of the level of proficiency of the respondents was not analyzed as a factor that may have impacted the recorded responses, considering that the respondents had not been tested on their knowledge of the English language, and only provided self-reported levels of proficiency. In terms of the questionnaire, it is possible that the responses might have been different had the questionnaire been more open-ended, rather than a forced-choice elicitation task.

Future studies should focus on a potential re-evaluation of the standardization of Serbian sports terms, as included in the relevant dictionaries, which would take into account the ongoing impact of the English language in the field of sport, as well as the actual use of sports terms in everyday language among professional athletes. In addition, these changes should also be reflected in the teaching process in educational institutions that cater to athletes and students of sport and physical education, while the findings may provide insight for the field of ESP.

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## ISTRAŽIVANJE LEKSIČKIH IZBORA U SPORTSKOJ TERMINOLOGIJI NA PRIMERU STUDENATA SPORTA I FIZIČKOG VASPITANJA

*Predmet rada je konkurentnost anglicizama i njihovih pandana u srpskom jeziku u oblasti sporta. Cilj nam je da na uzorku studenata sporta i fizičkog vaspitanja pokažemo trenutne tendencije u upotrebi sinonimnih sportskih termina. Onlajn-upitnik popunilo je 117 ispitanika, pri čemu je upitnik sadržao 60 nizova sastavljenih od jednog anglicizma i jednog ili dvaju njegovih pandana. Dobijeni podaci podvrgnuti su kvalitativnoj analizi, pri čemu je frekventnost upotrebe termina kod ispitanika iskazana procentualno. U svetlu postavljenih hipoteza, na osnovu morfo-sintaksičke strukture anglicizama, broja leksema u okviru pandana u srpskom jeziku i morfo-sintaksičke strukture sintagmi, pokazali smo da su anglicizmi prostije tvorbene strukture prihvatljiviji među sportskim terminima (poput gol, servis, slajs, sparing, foul), a oni složenije strukture potisnuti su višeleksemskim pandanima u srpskom jeziku, vrlo često sa nekongruentnim atributom (igrač sa osnovne linije, korak sa prednožnim pogrčenjem, trka sa preponama, udarac kroz noge, utrčavanje uz čeonu liniju). Rezultati ovog istraživanja nisu samo leksikografski, već su značajni za engleski u profesionalne svrhe, u smislu procene upotrebe anglicizama ili njihovih ekvivalenata među studentima sporta i fizičkog vaspitanja, što je pokazatelj trenutnih tendencija u oblasti sportske terminologije. Takođe, dobijeni rezultati primenu mogu naći i u nastavi engleskog kao stranog jezika namenjenoj studentima sporta i fizičkog vaspitanja kao i u korišćenju sportske terminologije u svakodnevnoj nastavnoj praksi na različitim fakultetima sporta i fizičkog vaspitanja.*

Ključne reči: *sportska terminologija, anglicizmi, prevođenje, konkurentnost među terminima, srpski jezik*

### APPENDIX

Table 1 A list of the English language sports terms, corresponding Anglicisms, and their Serbian equivalents

English Language Terms	Anglicisms in Serbian	Equivalent(s) in Serbian
1 <i>add-in</i>	<i>ed-in</i>	<i>prednost servera</i>
2 <i>add-out</i>	<i>ed-aut</i>	<i>prednost primača servisa</i>
3 <i>back door</i>	<i>bekdoor</i>	<i>prolaz iza leđa odbrane, pritajeni napad</i>
4 <i>baseliner</i>	<i>bejslajner</i>	<i>igrač sa osnovne linije</i>
5 <i>baseline cut</i>	<i>bejslajnkat</i>	<i>utrčavanje uz čeonu liniju</i>
6 <i>beach volleyball</i>	<i>bičvolej</i>	<i>odbojka na pesku</i>
7 <i>block</i>	<i>blok</i>	<i>rampa, izblokiran šut</i>
8 <i>booster</i>	<i>buster</i>	<i>navijač-sponzor</i>
9 <i>carving skis</i>	<i>karving skije</i>	<i>skije sa izraženom bočnom geometrijom</i>
10 <i>challenge</i>	<i>čelendž</i>	<i>protest, osporavanje sudijske odluke</i>
11 <i>coaching</i>	<i>koučing</i>	<i>savetovanje tokom meča</i>
12 <i>cross step</i>	<i>kros-step</i>	<i>iskorak ka lopti</i>
13 <i>cutman</i>	<i>katmen</i>	<i>osoba zadužena za posekotine i povrede</i>
14 <i>double-double</i>	<i>dabl dabl</i>	<i>dvostruki dvocifreni učinak</i>
15 <i>double-footed</i>	<i>dabl futer</i>	<i>igrač koji koristi obe noge, igrač koji dobro igra obema nogama;</i>

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16	<i>downhill</i>	<i>daunhil</i>	<i>spust, slobodni spust</i>
17	<i>dribbler</i>	<i>dribler</i>	<i>igrač koji je prevario protivnika</i>
18	<i>dribbling</i>	<i>dribling</i>	<i>vođenje lopte, vođenje lopte sa fintom</i>
19	<i>drop shot</i>	<i>drop-šot</i>	<i>skraćena lopta</i>
20	<i>fan club</i>	<i>fan-klub</i>	<i>navijački klub</i>
21	<i>foul</i>	<i>faul</i>	<i>greška, prekršaj</i>
22	<i>fair play</i>	<i>fer-plej</i>	<i>korektna igra</i>
23	<i>finish</i>	<i>finiš</i>	<i>završetak utakmice</i>
24	<i>feint</i>	<i>finta</i>	<i>varka telom</i>
25	<i>floater</i>	<i>flouter</i>	<i>šut sa visokim lukom</i>
26	<i>freestyle</i>	<i>fristajl</i>	<i>slobodan stil</i>
27	<i>futsal</i>	<i>futsal</i>	<i>mali fudbal u dvorani</i>
28	<i>goal</i>	<i>gol</i>	<i>pogodak</i>
29	<i>goal-getter</i>	<i>golgeter</i>	<i>najbolji strelac</i>
30	<i>hot shot</i>	<i>hotšot</i>	<i>spektakularan udarac</i>
31	<i>jumping jack</i>	<i>džamping-džek</i>	<i>poskok raznožno</i>
32	<i>kicker</i>	<i>kiker</i>	<i>rampa za skokove, skakaonica na stazi</i>
33	<i>knee lift</i>	<i>nilift</i>	<i>korak sa prednožnim pogrčenjem</i>
34	<i>L-grip</i>	<i>elgrip</i>	<i>izvrnuti hvat</i>
35	<i>matchmaker</i>	<i>mečmejker</i>	<i>ugovarač meča</i>
36	<i>pass</i>	<i>pas</i>	<i>dodavanje</i>
37	<i>playmaker</i>	<i>plejmejker</i>	<i>kreator igre</i>
38	<i>play-off</i>	<i>plejof</i>	<i>doigravanje</i>
39	<i>record</i>	<i>rekod</i>	<i>najbolji rezultat</i>
40	<i>reserve</i>	<i>rezerva</i>	<i>rezervni igrač, zamena</i>
41	<i>return</i>	<i>ritern</i>	<i>vraćen servis, povratni udarac</i>
42	<i>rival</i>	<i>rival</i>	<i>protivnik, protivnički igrač</i>
43	<i>sidecut</i>	<i>sajdkat</i>	<i>bočni luk skije</i>
44	<i>side step</i>	<i>sajd-step</i>	<i>bočni korak, korak u stranu</i>
45	<i>serve</i>	<i>servis</i>	<i>početni udarac</i>
46	<i>slice</i>	<i>slajs</i>	<i>zasečena lopta</i>
47	<i>snowboarding</i>	<i>snoubording</i>	<i>skijanje na dasci</i>
48	<i>sparring</i>	<i>sparing</i>	<i>vežbanje sa partnerom</i>
49	<i>split step</i>	<i>split-step</i>	<i>međukorak, pripremni korak</i>
50	<i>steeplechase</i>	<i>stiplčejs</i>	<i>trka sa preponama</i>
51	<i>striker</i>	<i>strajker</i>	<i>centarfor</i>
52	<i>shot clock</i>	<i>šotklok</i>	<i>sat za servis, štoperica za servis</i>
53	<i>shooter</i>	<i>šuter</i>	<i>strelac</i>
54	<i>shooting</i>	<i>šutiranje</i>	<i>upućivanje lopte ka голу, pucanje</i>
55	<i>tie-break</i>	<i>tajbrejk</i>	<i>peti set</i>
56	<i>team</i>	<i>tim</i>	<i>ekipa, grupa igrača</i>
57	<i>triple-double</i>	<i>tripldabl</i>	<i>trostruki dvocifreni učinak</i>
58	<i>tweener</i>	<i>tviner</i>	<i>udarac kroz noge</i>
59	<i>visor</i>	<i>vizor</i>	<i>kačket bez temena</i>
60	<i>winner</i>	<i>viner</i>	<i>direktan poen</i>

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## THE IMPORTANCE OF YOUTH SPORT CAMPS FOR SUSTAINABLE (TOURISM) DEVELOPMENT

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Željko Anđelković<sup>1</sup>, Marija Bratić<sup>2</sup>, Stevan Stamenković<sup>3</sup>,  
Ljubomir Pavlović<sup>3</sup>, Goran Danković<sup>4,5</sup>

<sup>1</sup>National Museum Niš, Niš, Serbia

<sup>2</sup>University of Niš, Faculty of Sciences and Mathematics,  
Department of Geography, Niš, Serbia

<sup>3</sup>University of Niš, Faculty of Sport and Physical Education, Niš, Serbia

<sup>4</sup>Faculty of Medical Science, University of Kragujevac, Kragujevac, Serbia

<sup>5</sup>Clinic for Anesthesiology and Intensive Care,  
University Clinical Center Niš, Niš, Serbia

**Abstract.** *When discussing tourism nowadays, one word should be added as a supplement - 'development'. What seems to be even more important is the term 'sustainability'. In the sense of sport tourism and sport development, we could consider sport camps and their role in sustainable (tourism) development. The aim of this paper is to point out the importance of establishing sport camps in the sense of sustainable (tourism) development and to educate all participants (children and young people at first) on how to act in the most responsible way. There is not much research related to sport camps and their role in sustainable (tourism) development – generally speaking they are connected with younger generations and the school age, and the idea is to establish sport camps for those who are young enough and want to learn how to behave in a responsible way through sport, games, etc. Sport tourism should fill the gap between development and responsibility; on the other hand, sustainability and responsible behaviour of all participants should be an imperative. Sport camps could be good basis for a better understanding of sustainable (tourism) development. The aim of this study is to provide a review on the connection between youth sport camps and sustainability through education of all the participants.*

**Key words:** *Sport camps, Sport tourism, Sustainability, Development.*

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**Corresponding author:** Željko Anđelković

National Museum Niš, Generala Milojka Lešjanina 14, 18105 Niš, Serbia,

E-mail: [zeljkozelja@yahoo.co.uk](mailto:zeljkozelja@yahoo.co.uk)

## INTRODUCTION

Tourism is a contemporary phenomenon and important segment of human life in the 21<sup>st</sup> century (Golubović et al., 2017). Nature protection should be an imperative in the tourist industry in the sense of the protection of natural areas, and natural and cultural heritage for future generations. In an effort to move towards sustainability, environmental education receives a great deal of attention. The idea that human interaction with the rest of the planet can become more sustainable in particular offers hope to many people (Santos et al., 2018). And in that sense tourism and specific sport tourism could assist in education with the goal of creating responsible tourists. Sport is an industry with a significant role in tourism growth (Higham, 2005). Sports tourism is defined by the World Tourism Organization (2010) as specific travel outside the customer's usual environment for either passive or active involvement in sport where sport is the prime motivational reason for travel. Sport tourism could be also defined as a type of tourism activity based on sports, which uses sports as a vehicle for providing tourists with recreational and cultural experiences (Kurtzman, 2005). One of the definitions states that it is sport-based travel away from one's place of residence for a limited time, where sport is characterized by a unique set of rules, and competition related to physical prowess and play (Hinch et al., 2011). Accordingly, one of the key challenges is to ensure that sport tourism development is sustainable (Hinch et al., 2017), and it is of the utmost importance to control sport camps and behave responsibly in educating children and young people about the importance of sustainable development. Sport is an integral part of all culture and, while often viewed as a separate activity, it is inextricably linked to tourism (Klaus et al., 2011). The catch is to involve all the participants in sustainable (tourism) development.

It has been suggested that greater attention should be paid to environmentally innovative forms of tourism which foster both environmental and social responsibility (Pásková, 2012). Sport tourism and sport camps could be important players in that type of tourism: all participants should improve their knowledge of nature protection and help the camps in terms of social responsibility and the working process. Sport camps sometimes take place in protected areas which could be open-air museums - so all the participants should learn how to "live in a museum - what they could touch, how they could use some goods or artefacts, etc." Sport has a chance to promote positive youth development (PYD) and that is recognized by researchers and health professionals (Super et al., 2021). The main idea of sport programs aimed at facilitating PYD is that young people acquire skills and competences while participating in sport that, when transferred to other life domains, can have a positive effect on the life prospects of young people, for example at school or in the community (Damon, 2004). Sustainable entrepreneurship and sports entrepreneurship should be a way to contribute to the achievement of the United Nations (UN) 2030 Agenda (Rosa, 2017), which is an international plan that pursues overall sustainable development. The Agenda also states that sport has proven to be a cost-effective and flexible tool for promoting peace and development objectives (<https://www.un.org/en/chronicle/article/role-sport-achieving-sustainable-development-goals>). In that sense tourism has to capture all these positive vibes from children and young people and use them to promote sustainable (tourism) development. Entrepreneurship and sustainability are two closely linked concepts (Santini, 2021) and sport camps could play an important role in raising awareness about how important sustainability is: children and young people could do this through sport, games, and relaxation or leisure.

Camping can be considered a special-interest form of tourism (Brooker et al., 2013). Camp can be defined as an organized set of activities led by trained leaders with intentional goals, often held in a unique learning environment like the outdoors (Henderson et al., 2007). It would be good if all the participants had a brochure and a brief letter on how to behave during their time outdoors, in nature and/or a protected area. A lot of researchers defined camp as a setting for social emotional learning and character development (e.g. Thurber et al., 2007; Richmond et al., 2019; Wilson et al., 2019). It is very important to understand that supplemental tourism activities in the context of sport tourism will play an important role not only in advancing sport tourism research, but also in maximising tourism benefits and opportunities, and developing sustainable sport tourism (Ito et al., 2020). This sustainable sport tourism will play a crucial role in achieving the goal of creating responsible tourists, and the right time to start is primary school. According to the American Camp Association (<https://www.acacamps.org/article/camping-magazine/putting-sustainability-practice-simple-strategies-implement-camp>) next to national, state, and municipal parks, camps manage some of our most important natural resources. Camp settings not only introduce children to natural resources, build their skills to find recreation in those resources, but can also act as a model for sustainable practices.

According to Richmond et al. (2019), research on camp-related outcomes has a long history that dates back to studies in the early 20<sup>th</sup> century that looked at character development (Henderson et al., 2007), to more recent studies on the short-term impacts of camp participation (approximately a year or less following participation, Bialeschki et al., 2007) and the lasting impacts of camp within a single camp community (Whittington et al., 2018). Indeed, there is a rich literature base on camp outcomes, with studies focusing on specific outcomes such as a sense of community and belonging (e.g., Goodwin et al., 2011; Yuen et al., 2005), and on the unique outcomes of camps working with children with chronic illnesses or disabilities (e.g., Gillard et al., 2011; Knapp et al., 2015). However, there have been no studies that directly link sport camps and all the participants to tourist sustainability. Teaching young people to be responsible, to appreciate nature, and to increase their knowledge of natural (and cultural) heritage should be a requirement in the twenty-first century. “What is your role and how could you help sustainable (tourism) development?” – this should be the first and last question in the education process. Sustainable tourism also requires tourists who have satisfying experiences (Hinch et al., 2017). And satisfying experience could be connected with the destination – in the sense of being satisfied with nature and the natural and cultural heritage.

Sport is also an important enabler of sustainable development (Lemke, 2016) and sport tournaments and special events have been acknowledged as contributors to feelings of national identity, social cohesion, and communal pride (Schulenkorf, 2012) – and in that sense natural heritage could also be promoted as a special place for tournaments and all activities that could help sustainable (tourism) development of (protected) areas. In the psychology of sport, motivation is emphasized as a key factor in sporting success (Gould et al., 2002). There is enough space for making success more interesting if some kind of sustainability challenge is added: for young people and children this could always be done through games. Playing games is an appropriate activity in the context of learning for sustainable development, and especially in the context of experiential learning (Dieleman et al., 2006) which is so important for children. As the Old Roman saying goes: *Panem et circenses* – so it should be enough to devise a good plan for those who will attend the camps – days for sport activities and days of learning about sustainable

development, which would alternate. In the end, a quiz or challenge with some awards could be added. For example, according to the American Camp Association, the challenge is not to have any waste by the end of camp. Other challenges could be related to camp trash output, energy use, water use, and fuel. In the on-line brochure of the American Camp Association, some steps which include taking baseline measurements of things such as leftover food, and then comparing those baselines to acts of sustainability, etc. are especially emphasized (<https://www.acacamps.org/article/camping-magazine/putting-sustainability-practice-simple-strategies-implement-camp>). For different groups, different challenges and games should be organized in order to achieve sustainable goals.

Learning and development for young people occur across a wide range and diversity of settings (Wilson et al, 2019) and learning *in situ* about sustainability goals is always a good idea. As a form of teaching and learning the activity material, games are one of the main components in each physical education program; therefore, physical education teachers must possess comprehensive knowledge about games (Batubara, 2020). Games in sense of sustainability should be developed by experts in several fields: psychology, gaming, natural sciences, and sustainability. The result should be more than useful for all the participants. Learning is an individual interaction with the environment. Sustainability covers all the elements that constitute a complete tourism experience (Zolfani et al., 2015). According to Sharpley (2000) ‘sustainable tourism development’ concerns economic, social, and environmental tourism development aimed at the continuous improvement of tourists’ experience (Zolfani et al., 2015) and one of the goal should be understanding of sustainability values which could be defined as “strategies and practices that contribute to a more sustainable world while simultaneously driving shareholder value” (Hart et al., 2003). It is very important to involve an industry in sustainable development – at first to involve tourism as one of its most important parts. Also, tourism should be a leader in promoting sustainable development because the travel and tourism industries are among the largest industries in the world (Zolfani, 2015).

In recent years, the literature connected with protected areas, nature conservation, and sustainable development has increased. On the one hand, establishing protected areas in the form of a park or reserve is generally viewed as an effective way of preserving rural landscapes, biodiversity, and natural resources (e.g., Molina Murillo et al., 2016; Mukul et al., 2017). On the other hand, tourism induced through protected areas, designations in and around protected areas, is regarded as an effective way to promote the development of local communities, while the economic gains induced through tourism activity can partly be back-transferred to furthering, even more, the set conservation goals (Bello et al., 2016). Numerous articles have been written about the considerable importance of people dealing with nature – how to prepare nature for being used by some people and how to prepare others who are users. For both of them it is necessary to prepare a short course about sustainable (tourism) development goals. In September 2015, the General Assembly adopted the 2030 Agenda for Sustainable Development that includes 17 Sustainable Development Goals (<https://www.un.org/development/desa/disabilities/envision2030.html>) and a few of them could be connected with this topic: Quality education (because well educated people should be also responsible), Sustainable cities and communities (connected again with education), Responsible Consumption and Production (a possible connection with education / but not necessarily), and Partnerships to achieve the Goal (*condition sin qua non*). Bocken et al. (2015) said that for thinking about sustainability, a more holistic view of value is needed, one that integrates social and environmental goals, to ensure balancing or ideally alignment of



all stakeholder interests to deliver “sustainable value” creation. Sport and sport tourism should be responsible nature consumers and through sport promote the idea of achieving all sustainable goals.

Sustainable development is defined as economic development that does not use up too much of the Earth’s natural resources or cause environmental pollution according to the Dictionary of Leisure, Travel and Tourism (McAdam et al., 2005). This phenomenon is envisioned as a process, a way towards sustainability, which represents the goal of sustainable development (Glibo et al., 2022). The travel and tourism industries are among the largest industries in the world. The degrading effects of tourism have become a big concern and need to be addressed quickly (Zolfani et al., 2015); therefore, sustainable (tourism) development should be an imperative. It has been defined as tourism that takes full account of its current and future economic, social, and environmental impacts, addressing the needs of visitors, the industry, the environment, and host communities (UNEP, UNWTO, 2005). According to “Our Common Future” (1987), humanity has the ability to make development sustainable to ensure that it meets the needs of the present without compromising the ability of future generations to meet their own needs. And needs seem to be essential in the service industry, and tourism as its main sector. Sports tourism has shown to have a considerable economic impact, not only via the staging of major sporting events, but also through the creation of sports resorts and sports attractions (Jafari, 2000). As a result, the number of participants and their impact on the environment, and natural and cultural heritage on the location should be limited.

This paper provides insight into the connection between sport camps and sustainability. It attempts to provide good recommendations for future work and for those who want establish sport camps, in the sense of teaching participants about environmental and social responsibility and sustainable development. In terms of sustainability, it is necessary to teach all the participants about tourism values / culture / tradition and explain to them the importance of the entire natural and cultural heritage.

#### GOOD PRACTICE RELATED TO SPORT CAMPS AND SUSTAINABILITY

The most clear example of a good practice is related to big sports events such as the Olympic and Paralympic Games, the World Football Cup, Tennis Cups etc. But such big sport events, like the Olympic Games or the World Cup, are not or not only connected with sustainable development, or to be precise they do not refer to sustainability - it should be something that goes without saying (or big promotions). The United Nations – UN Chronicle issued a guide called “The Role of Sport in Achieving the Sustainable Development Goals”. Lemke (2016) talked about the various importance of sport and one is that sport has proven to be a cost-effective and flexible tool for promoting peace and development objectives. Furthermore, Lemke (2016) stated that sport is also an important enabler of sustainable development. We recognize the growing contribution of sport to the realization of development and peace in its promotion of tolerance and respect, as well as the contributions it makes to the empowerment of women and of young people, individuals and communities, as well as to health, education and social inclusion objectives. Additionally, there are several sport camps worldwide (those connected with famous football teams) that earn (a lot of) money from sport activities and sport in general, and a percentage of it should be spent on sustainable development. Also, it should be obligatory for everyone who uses natural

resources to make some money through sport tourism and sport / camp activities. Take for example the Green Camps in the United States of America ([greencamps.org](http://greencamps.org)) with the title “Now More than Ever, Local Action Counts”. They are eco leaders in camping in America and “help camps of all kinds, including summer camps and recreational vehicle parks, to reduce their environmental impact and inspire the next generation of eco-leaders” ([greencamps.org](http://greencamps.org)). Another good practice came from Utah University in the USA - “Sustainable You! Summer Camp” and it is for children aged 9-12, but could be adapted for all ages (<https://ucanr.edu/sites/Ventura4-Hsustainabilityprogra/files/195011.pdf>). In the cover letter, according to the available info on the site mentioned above, it is stated that the “Sustainable You! Summer Camp was designed to help youth understand what it means to be sustainable through fun, interactive activities based around the five major areas of sustainability: land, air, food, energy, and water”.

In Serbia there are a lot of professional and amateur sport camps that take place in the natural environment. Some of them are connected with football, basketball etc. (several camps take place on the Zlatibor and Kopaonik mountains), and often the natural environment is used by them – they organize camps like a working sport holiday: children enjoy the nature and have sport exercises in the natural environment: so it is necessary to put in their daily agenda of learning just how important sustainable development is.

One of the great example of good practice took place in South Serbia in September 2022 - it was the 3<sup>rd</sup> Youth Change camp for young people from south and south-east Serbia as a part of the project “Perspectives for young people in rural areas in Serbia” financed by Deutsche Gesellschaft für Internationale Zusammenarbeit (GIZ) GmbH and supported by the Serbian Ministry of Sport. Some of the topics were nature protection, sport, recreation, agriculture and the role of young people in all these fields (<https://www.mos.gov.rs/vest/ministar-udovicic-novi-projekat-je-od-visestruke-koristi-za-mlade-u-ruralnim-sredinama?lang=lat>; <https://jugpress.com/odrzan-treci-letnji-kamp-za-mlade/>).

The spirit of friendship is vital to understanding that responsible development is about people everywhere. Respect applies equally to people as well as the environment and its natural systems. Friendship and respect are inexorably intertwined with the promotion of peace since it is a pre-requisite for sustainable development in any community (Sustainability through sport: Implementing the Olympic Movement’s Agenda 21, 2012).

## CONCLUSION

The aim of this study was to point out the importance of connecting sport, sport tourism, and sustainable (tourism) development. People play an important part in achieving long-term goals in all activities and all goals should be stated before establishing camps or sporting events: goals may vary in different natural or protected areas. Also, the way to achieve sustainability goals could differ. A lot of strategies can be incorporated into the camp setting, but this depends on the camp type and the budget as well - more money gives more opportunities. It is important to establish a national network of camps - like those in North America - and to share knowledge and ideas in order to make all camps sustainable. The main direction must be sustainable production in order to eliminate a negative impact on the environment, community, and economy because economy benefits are very important for all industries. It is not easy to involve the local community in sport camps but it is not impossible either: local products could

be used in camps, the local community could organize tours around the camp, local people could be presenters of sustainable development along with the professionals, and they could explain to all the participants why some area or some product or some artefact is important for the local community. And, as previously mentioned, one of the sustainable goals is connected with partnerships with the aim of achieving that goal - so there are no limits in the sense of participation on the both sides – those who create camps and those who enjoy their time there. The main goal should be to establish sustainable camps and educate all the participants about how important responsibility is.

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## VAŽNOST OMLADINSKIH SPORTSKIH KAMPOVA U ODRŽIVOM (TURISTIČKOM) RAZVOJU

*Kada se danas govori o turizmu jedna reč se podrazumeva – razvoj. Ono što se čini još bitnijim jeste “održivost”. Kada se govori o sportskom turizmu i sportskom razvoju treba misliti o sportskim kampovima i njihovoj ulozi u održivom (turističkom) razvoju. Cilj ovog rada je da ukaže na važnost uspostavljanja sportskih kampova u smislu održivog (turističkog) razvoja te edukacije svih učesnika (pre svega dece i omladine) kako da se ponašaju i delaju u skladu sa principima održivosti. Ne postoji puno radova u vezi sa sportskim kampovima i njihovom ulogom u održivom (turističkom) razvoju – radovi i*

*istraživanja su povezana sa mladim generacijama i školarcima a ideja je da se osnuju sportski kampovi za one koji su dovoljno mladi i koji žele da kroz igru i sport uče kako da se ponašaju odgovorno. Sportski turizam trebalo bi da popuni prazninu između razvoja i održivosti a sa druge strane održivost i odgovorno ponašanje trebalo bi da budu imperativ za sve učesnike. Sportski kampovi mogu biti dobre baze za bolje razumevanje održivog (turističkog) razvoja. Cilj ovog rada je da da pregled veza između omladinskih sportskih kampova i održivosti kroz edukaciju svih učesnika.*

*Ključne reči: sportski kampovi, sportski turizam, održivost, razvoj.*



**Research article**

## **COGNITIVE BIAS IN THE INTERPRETATION OF SPORT SUCESS AND FAILURE**

*UDC 159.92:796.015.8*

**Anja Mitić, Isidora Wattles**

Faculty of Law and Business Studies dr Lazar Vrkatić, Novi Sad, Union University

**Abstract.** *The purpose of news reports is to relate facts and information; however, in the press coverage of the games of the Serbian national football team the media stance on why and how the games were lost or won is very much present, thus placing the locus of control on internal or external axes. The aim of the paper is to examine if cognitive bias (locus of control, self-serving bias, fundamental attribution error) is present in the interpretation of sport outcomes in the public discourse and if so, whether it is reflected in a sample of the sports audience as well. A multimethod approach was used to analyze interpretive styles and different types of cognitive biases in the interpretation of the national football team's victories and losses in the sports press and among the sports audience during the World Cup in Qatar 2022. The authors conducted mixed method research, combining qualitative (critical discourse analysis) and quantitative methods (a survey conducted on 161 participants) reflecting linguistic and psychological theoretical frameworks. In the first phase, we identified linguistic means that shape interpretative tendencies in sports media. Elements of cognitive biases are recognized – self-serving bias, internal attribution and high affective involvement in the interpretation of victories, while defensive mechanisms through defensive attribution, externalization, distancing and passivization of the national team appear in the interpretation of losses. The survey revealed that male respondents are more prone to internalization when interpreting victories than female respondents, while older respondents are more prone to internalization when interpreting defeats.*

**Key words:** *cognitive bias, internal and external locus of control, critical discourse analysis, interpretation of sport outcomes, Serbian National Football Team*

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**Corresponding author:** Anja Mitić

Faculty of Law and Business Studies dr Lazar Vrkatić, Novi Sad, Union University, Bulevar oslobođenja 76,  
21000 Novi Sad, Serbia

E-mail: [anjamitich@gmail.com](mailto:anjamitich@gmail.com)

## I. INTRODUCTION

**Sport in the public discourse – public discourse in sport**

In the media, national sport representatives and teams are portrayed as an embodiment of national ideals, strength, success, and pride. Top athletes are seen as kings and national heroes. They are the best among us and their sport successes are generalized into all other personal qualities. They have the power to make everyone else winners or losers; they are the guardians of a nation's pride and honor, keepers of tradition. As such, they enable and institutionalize a cultural and historic continuum of the sport tradition.

Sport discourse cannot be observed independently of other public discourses in any given society. As Michel Foucault (1972) stated in *The Archeology of Knowledge*, discourse is not merely a group of symbols but also a social practice which systematically shapes objects about which it informs. That means that sport is not an isolated construct nor is it the source (or product) of its signifiers and cultural symbols. Sport clubs, events, competitions, organizations, rules, infrastructure, technology, participants, fans, education, politics, social networks, media etc., together constitute a context and form meanings within the sport discourse. Discourses are not a simple reflection of what exists, nor are they representations of the existing meanings and forms; discourses determine the way in which people will perceive, categorize, and evaluate the world in which they live (Schirato, 2007). Discourses are only seemingly consistent and continuous. Depending from which or whose perspective (players, coach, spectators, referees, media, etc.) a sport event is observed, there could be multiple discourses in competition with one another. Discourses as such represent mediators between social structures and individuals, which shape their perception and cognition, and consequently their behavior. Social identities and relations are formed in and through discourse, implying that discourse helps construct reality from a particular perspective (Chouliaraki & Fairclough, 1999). Therefore, different discourses may be said to represent different perspectives of the world, and that individuals' specific identities, which are a consequence of the different contexts they live in, affect their perspectives (Maftoon & Sabbaghan, 2010). In critical discourse analysis (CDA), a criticism is conducted of social relations which allow manipulations, and of language which is used to not only sustain but also create such social relations, aiming to induce at least some social change (Hart, 2014). One such change might be raising language awareness in a sense that a hidden agenda might be present in utterances, which could enable addressees to understand issues regarding power and control as well as the role that language plays in these issues (Fairclough, 1992; Maftoon & Sabbaghan, 2010). As Silaški and colleagues (2009) underscore in their analysis of the Serbian public discourse, the basic principle of CDA is to identify and analyze such linguistic manipulations in discourse, that is, it is important to determine which linguistic means and choices are used to achieve goals through which persuasion and manipulation are achieved in discourse.

Based on the aforementioned, CDA research is clearly warranted in attempts to uncover the relationship between language use, power, and ideology (Maftoon & Sabbaghan, 2010) since language is used as a means to influence what and how people think, alter people's perceptions toward a social event, belief, or ideology. All levels of linguistic analysis can be relevant for implementing ideologies and consequently, within the CDA model, for analysis in this respect (Fairclough, 1992; Del-Teso-Craviotto 2006, Silaski at al., 2009).



### **Sport, Identity, and Cognitive Bias**

Sport fans develop long-term relationships with their favorite team or sportsperson, and often display enthusiastic loyalty. This is often accompanied by higher levels of irrational and affective tendencies. The origins of such traits are interpreted by some authors (Deighton, 1992; Barthes, 1972) as stemming from uncertainty of the sport outcomes. However, to keep the audiences' attention, the competitors must have relatively equal chances for victory, producing feelings of hope and fear in the spectators. This combination creates apprehension enhanced further by feelings of suspense and excitement (Zillmann, 1996; Carroll, 1996; Ortony, Clore, & Collins, 1988). Therefore, the primary source of entertainment is the affective excitation caused by cognitive evaluation of uncertainty. Additionally, group behavior is characterized by impulsivity, irritability, irrationality, a highly emotional state, lack of judgment and critical thinking, which leads this behavior to be termed collective euphoria (Le Bonn, 1895/2009). The appeal of football can therefore be attributed to its captive nature, but also to the psychology of groups and the allure of collective behavior. When the aspect of strong group identity is also added, as is the case with national teams, together with media stimulation, a very dynamic and affectively tense social climate is created.

Wins and losses affect the emotional state of fans. When an opponent makes mistakes or is sanctioned, this increases the chances for "our" team to win, so the feelings of pleasure and relief arise, while disappointment and anxiety are felt if "our" team loses. These emotions and the anticipation of the outcome affect the level of empathy, that is, increase the level of identification with the team or sportsperson one favors. Zillmann (1978, 1983) provides a conceptual explanation for this effect through *excitation transfer theory*. Emotional reactions and empathic identification intensify as the game nears its end because of the parasympathetic nervous system involvement. This further leads to an increase in the feelings of pride and satisfaction for the team's success, and alternatively, blameworthy emotions and dissatisfaction for the team's loss (Madrigal, 2003).

Two forms of comforting behaviors can be identified when accepting sport failure. The first one is minimizing the significance of the victory, and the second one is making excuses for the loss. In order to maintain a positive image of oneself (or the team), the excuses cannot be directed towards endangering the quality and ability of the favored competitor. External circumstances and unfair conditions place the locus of control externally, while the inner abilities stay solid and the self-image remains unharmed.

Fans have a tendency of seeing reality differently, that is, they process information in a biased manner. The purpose of this is to portray the favored team in a positive light at all times. Indirectly, it also maintains the fans' personal identity and high self-respect. An explanation for this cognitive processing deviation can be found in social identity theory, which presupposes that people partly define themselves through belonging to social groups (Hogg & Abrams, 1988; Tajfel & Turner, 1979; Turner, 1982). Identification with sport teams is a very important source of self-determination in sport fans. When national teams are concerned, identification with a team is intertwined with identification with larger social groups, such as national identification. The success of a national team affects the positive image about the nation itself. Research has confirmed the existence of fans' bias in evaluating the past outcomes of their favored team (Roese and Maniar, 1997), attribution errors when evaluating the present quality of the team (Tykocinski, Pick, &

Kedmi, 2002), as well as distorted and biased expectations of future performances (Hirt et al., 1992; Hirt & Ryalls, 1994).

Since Amos Tversky and Daniel Kahneman brought cognitive bias to the attention of the scientific community in 1972, lists and classifications have multiplied, as have scientific publications concerning this topic. Cognitive biases are forms of distortion of cognition, perception, attitudes or judgment from reality or objective reality. Individuals consistently warp reality in order to please or protect themselves. Every “subjective reality”, is therefore functional and evolutionary adaptive for the individual (Haselton, Nettle, & Andrews, 2005). Some cognitive biases are aimed at compensating for the lack of information, the limitations of the human cognitive apparatus, while some are directed towards the preservation of the self, one’s values, ego and self-respect. The latter group is divided into two subgroups, where direct cognitive biases are linked to the preservation of the image of a person, and are indirectly related to the preservation of the image of group to which a person belongs (Ariely, 2008). Campbell & Sedikides (1999) introduce the term self-serving biases and define them as an attributive disposition where an individual presents active and internal factors as responsible for their success, and passive, less controlled and external factors as justification of failure.

As each individual’s integrity is systematically protected by its idiosyncratic explanatory style, in a similar fashion, each society is characterized by its own interpretative patterns. They are interwoven in traditional concepts, visions of the past, present, and future, in the ways in which society reacts to crises and faces up to challenges, and how it celebrates victories or justifies losses. This paper analyses individual interpretative tendencies, but also tendencies of the public towards an interpretative style as represented in public sport discourse – written news reports. The assumption is that a permanent, stable and pervasive bias in the interpretation of sport victories and losses is present in the Serbian public discourse. In case that this is a universal tendency, it can be hypothesized that this self-serving bias will be reflected in discursive practices – in the language of politics, historiography, in everyday speech, media, and sport.

The research problem can be summarized in the following question: what discursive practices can be observed in the interpretative style of sport victories and losses? The focus of the research are self-serving biases realized through 1) discursive practices in media reports and 2) individual and group differences of the sport audiences. Since the collective consciousness is an agent of the public discourse, the discourse is inclusive and interactive with the interpretative styles of individuals which feed into it. The two “layers” of discourse are complementary and reflect the following dichotomies: individual-collective, content-form, agent-structure, latent-manifest, subjective-objective, as well as explorative-confirmative.

The aim is to observe whether self-serving cognitive bias is present in the articles on outcomes of the Serbian national football team, which discursive practices were used and through which linguistic means. Additionally, the aim is to determine if statistical consistencies exist in the frequencies of the internal and external factors in relation to the different outcomes of the matches, gender, and age of the respondents. The basic assumption is that statistically significant differences in frequencies will be found in the internal and external interpretative factors dependent on the game outcome, the gender and/or age of the respondents.

## METHODS

Due to the multidisciplinary approach used, a mix-method research was selected. For the linguistic aspect of this research, a qualitative analysis was carried out in line with CDA and cognitive linguistics. Content analysis was carried out on material consisting of 34 texts published online by various sources of daily newspapers written in Serbian. The selected articles reported on the Serbian national team (SNT henceforth) and their matches during the World Cup Qualifications and during the World Cup itself. Overall, the material consists of 20666 words. In order to observe the manner in which the press might express concepts related to the notions described in the previous sections of the paper, linguistic content was identified which expresses inner qualities and external (un)fortunate circumstances in descriptions of losses or wins of the SNT. Additional categories were derived post-analysis, inductively (Patton, 2002).

A short survey was conducted in both traditional and online formats, immediately following the conclusion of the World Cup. The instrument was constructed for the purpose of this research, in which the main questions were to identify the reasons for victory or loss of the Serbian national team in two high-stakes matches, and were constructed as binary choice items (as shown below).

Why did the Serbian national team beat the Portuguese national team during the qualifications for the World Cup?

- Because they were better.
- Because they were lucky.

Why did the Serbian national team lose against the Swiss national team in World Cup?

- Because they were worse.
- Because of bad luck.

Our complementary study included 161 (80 male and 81 female) participants from Serbia (mean age 31.31). In order to test frequencies of the responses between two cases (variables named *Victory* and *Loss*), a simple *Chi-square independence* test was used to determine whether or not there is a significant association between two categorical variables, along with the strength of the association test of the two variables to measure how strongly the two categorical variables are associated: Cramer's V and the Contingency Coefficient. The independent samples *t*-test was used to check statistical differences across the *Age* control variable.

## RESULTS FOLLOWED BY DISCUSSION

### Victories of the Serbian National Team

In the newspaper reports about victories of the SNT, we observed that the main strategy by which emphasis is laid on the internal locus of control is reporting on the quality of the SNT. The external locus of control is achieved through emphasis on the significance of the victory and minimizing the active participation of the opposing team (OT).

In Table 1, we see the attribution of internal qualities for both teams; however, the SNT has been given an advantage not only in the number of accounts (OT:8, SNT:64), but also in the linguistic variation. In the first row of the SNT column we observe statements of great actions (verbs and adverbials); in the second row, the quality of the players, the team as a whole and the coach, provides a variety of positive adjectives.

**Table 1** The positive qualities of the two teams<sup>1</sup>

OT	SNT
[1] dok su se Portugalci odlično <i>branili</i> i povremeno stvarali šanse (while the Portuguese were excellent at defense and occasionally created opportunities)	[1] Zaigrao hrabro, kako je i najavljavao poslao neodbranjivu "žabicu" u mrežu. (Having started playing bravely, he sent an undefendable "skimming stone", as he had announced, into the net.)
[2] Napadač Juventusa je odličan pokušaj imao u 34. minutu (The Juventus attacking midfielder had an excellent attempt in the 34 <sup>th</sup> minute)	[2] Opet naši dobro napadaju (Our team is attacking well again)
[3] Portugalci jačim presingom kontrolisali meč (Portuguese players controlled the game with a higher pressing tactic.)	[3] Odlična kontra izabranika selektora Stojkovića (Excellent counterattack by selector Stojkovic's chosen few)
[4] opasni Bruno Fernández (the dangerous Bruno Fernandes)	[4] Sjajno se namestio kapiten Srbije (the Captain of Serbia positioned himself excellently)
	[5] Svaka čast onom ko ih je uklopio tako idealno. (Congratulations to the one who brought them together so ideally.)
	[6] Orlovi pritiskaju domaćina koji ne zna gde se nalazi. (The Eagles are pressing the home team who do not know what is happening to them.)

The examples given in the second row of the OT column may have been employed to emphasize how difficult it might have been to win against such difficult adversaries, thus additionally stressing the significance of the SNT victory (also see Table 3).

To claim the better quality of the SNT, comparisons were also used, as seen in Table 2.

**Table 2** Comparisons of the SNT and OT

[1] Srbija je u ovom trenutku BOLJA od Portugala (Serbia is in this moment BETTER than Portugal)
[2] Mitrović je pokazao da je bolji skakač od Ronalda. Da. Bolji je! (Mitrovic showed that he is a better rebounder than Ronaldo. Yes. He is better!)
[3] Veljković je bio snažniji od Sančeza (Veljkovic was stronger than Sanches)
[4] Bili smo bolji rival. (We were a better rival.)

<sup>1</sup> Only the most illustrative excerpts from the press have been presented due to space constraints. The statements have been left in the original language to portray genuine linguistic content, metaphors, word play, etc. The excerpts have been left in the original form as well, containing spelling mistakes, capital letters etc. while the only intervention is the conversion from the Cyrillic alphabet into Latin for the sake of uniformity. Translations by the authors of the paper are provided in brackets; the translation is literal so as to reflect the word choices, tenses, agency, etc. Where necessary, an explanation is given to clarify the possible lack of understanding of a phrasing which is too literal.

Another way to present the SNT as a better team is to minimize the quality of the OT (Table 3). Here, the OT are seen as more lucky than able, more a result of an external force than skill, the players are presented as instruments, not active participants - agents of the positive outcomes. Possession of the ball and scoring a goal is a gift from SNT, or a result of the audience's support. Such descriptions minimize the quality of the opposing team and sometimes even degrade it.

**Table 3** Minimization of the OT's ability

[1]	Renato Sančez je poklon loptu [...] (Renato Sanches has [done something] to the ball gifted to him...)
[2]	Nemanja Gudelj je pogrešio i poklonio loptu domaćinima (Nemanja Gudelj made a mistake and gifted the ball to the home team)
[3]	Imali su sreće Norvežani koji nisu znali šta ih je snašlo (The Norwegians, who had no idea what had happened to them, were lucky)
[4]	umeju da koriste i najmanji kiks (they can use the slightest slip up)
[5]	Domaći su nošeni podrškom sa tribina mogli vrlo rano da stignu do vodstva, već posle dvadesetak sekundi (The home team, elated by the supporters' cheering, managed to take the lead only twenty seconds into the game)
[6]	Haland i ekipa mogli su samo da gledaju kako Milinković-Savić brani (Haaland and the team could only watch Milinkovic–Savic defending)
[7]	loptu poslao pored Rajkovića za vodstvo domaćina 1:0 (...sent the ball past Rajkovic putting the home team in the lead)

The second strategy is one of presenting the victory as extremely significant, which is done through a careful weaving of the narration, which consists of several phases, as presented in table 4.

The construction of the social reality is the following – because it was difficult and unlikely (as if moving mountains, playing on a steep hill, the beginning was tragic), victory is extremely important, historical, and the agents of the victory are heroes, deserving of national pride and comparable to saints. This is seen in the usage of superlatives, metaphors (magicians, bosses, heroes), collocations used in historical accounts. Good examples of this are 'VELIKI ALEKSANDAR MITORVIĆ' – *Aleksandar Mitrović The Great*, and 'Mitar Strašni' - *Mitar the Terrible*. Here *Mitar* is already a nickname (originally the root name from which the surname had been derived), which in such a form coincides with the name of an important Serbian saint, and to which the associative and metaphorical transfer has been added to show approval, and in this case glorification, and aligning his success with that of kings.

**Table 4** The significance of the victory, presented in three major categories:

It was too difficult	It was unlikely	It is historical / the agents are heroes
[1] onda uzbrdica postane naglo strmija, zadatak na toj neopisivo teži, ali... vera ima moć da i "planine pomera", pa su "orlovi" prestali da se penčaju, već su - uzleteli. (And then the upward slope becomes steeper, the task to be carried out on it indescribably harder, but... the faith has the power to "move mountains", so "the eagles" stopped climbing, they took off.)	[1] Utakmica nije mogla da počne na lošiji način – bio je to horor početak. (The game could not have started in a worse way – it was a horror beginning.)	[1] meč decenije (the game of the decade)
[2] Da je bilo lako, nije. Niti je iko očekivao da može biti lako. "Svako pašče na svom bunjištu jače", kaže stara izreka, a igrači na terenu Kristijana Ronalda i donedavnih šampiona Evrope jedan je od najvećih reprezentativnih izazova koji nekoga može da zadesi. (Was it easy – it wasn't. Nor did anyone expect it to be. "Every dog is stronger in its own field", an old proverb says, and playing in Cristiano Ronaldo's field, the field of the recent European champions, is one of the greatest challenges for any national team.)	[2] Sve je počelo košmarno (It all began nightmarishly)	[2] Konačno - za istoriju, za čast, za ponos čitave nacije (Finally – for history, for honor, for the whole nation's pride)
	[3] Užasno je počelo veče u Lisabonu po naš sastav (The evening started horribly for our team in Lisbon)	[3] ISTORIJSKA POBEDA ORLOVA U PORTUGALU (A historic victory for the Eagles in Portugal)
	[4] Ova ekipa je spremna na čuda (This team is ready for miracles)	[4] [Orlovi su] definitivno ispisali istoriju ([The Eagles] have most definitely written [made] history)
	[5] ne može da igra više zbog povrede (cannot play anymore due to an injury)	[5] jednu od najvećih pobeda u istoriji našeg fudbala (One of the greatest victories of our football history)
		[6] je jednu od najvećih pobeda u ovom veku (one of the greatest victories in this century)
		[7] Bogovi. (Gods.)
		[8] PIKSI JE I DALJE MAĐIONIČAR (Piksi is still a magician.)
		[9] "ORLOVI", CAREVI! ("The Eagles", Bosses!)
		[10] MITROVIĆ JE HEROJ NACIJE (Mitrovic is the nation's hero)
		[11] MITRE, IKONO NAŠA (Mitar, our icon)
		[12] Strašni Mitar u 91. minutu utišao 60.000 Portugalaca (Mitar the Terrible silenced 60,000 Portuguese in the 91 <sup>st</sup> minute)
		[13] VELIKI Aleksandar Mitrović (Aleksandar Mitrovic the Great)

Another strategy to stress the low probability for victory and the importance of the victory is to represent the course of the game as unfair towards the SNT, and by extension towards the nation. Consequently, the SNT, having won, overcame even such circumstances (Table 5):

**Table 5** Examples of circumstances against the SNT / Serbia

---

[1]	sudija Orsato nije smatrao da je Bernardo Silva s leđa napravio faul nad Gudeljom (referee Orsato did not think that Bernardo Silva committed a foul against Gudelj from the back)
[2]	ali već drugi put na ovom meču sudija Orsato i njegovi pomoćnici ne signaliziraju korner za Srbiju (but this was already the second time already in this match that the referee Orsato and his assistants did not signal a corner kick for Serbia)
[3]	Italijan se baš "razmahao" kartonima u Lisabonu (the Italian is really "throwing around" cards in Lisbon)
[4]	Džabe i Kristijano Ronaldo, guranje od strane sudija, sviranje nepostojećih faulova (Cristiano Ronaldo, referees pushing against our team, signaling non-existent fouls, it was all in vain)
[5]	Paulinja naterao Strahinju Pavlovića da ga zaustavi prekršajem (Paulinho made Strahinja Pavlovic stop him with a foul)
[6]	PLJAČKA! ČIST FAUL PRE GOLA PORTUGALA! (Theft! A clear foul just before Portugal scored a goal!)

---

Here the referees are represented as willful and lacking in objective evaluations, their judgements are based on choosing to be on one's side – and that is the opposing side (the first four examples: the referee did not think that foul play occurred; not signaling a corner for Serbia, a referee is "card-happy", and referees are pushing against our team). Also we see the lack of the SNT player's agency in getting a card – he was made to stop the other player, and finally, the SNT has been robbed by foul play, which was not called by referees.

To illustrate the point how reality is construed, we can analyze the following statement:

*[...]u ovaj tim Dragana Stojkovića Piksija koji je pokazao, dokazao i svima u inat rekao - Srbija je u ovom trenutku BOLJA od Portugala. I to nije fraza, niti euforična rečenica, ovo je realnost!*

*(...Dragan Stojkovic Piksi's team, which showed, proved and in spite of everyone said – Serbia is in this moment BETTER than Portugal. And this is not just a phrase or a euphoric sentence, this is reality!)*

We see that in spite of all the unfavorable circumstances, the unfair positions of others towards Serbia, Serbia (as a team?) is better than Portugal, which, the author claims, is not a hyperbole, but reality, thus instructing readers to accept this point of view.

### **Losses of the Serbian National Team**

In the written press coverage of the SNT losses, several discourse strategies have been identified, linked to both the placement of the internal and external locus of control. The internal locus of control was achieved in descriptive practice and accounts of the poor quality of the SNT and/or their performances, materialized as verbal/adverbial descriptions and adjectival constructions, and also the great quality of the OT. The discourse strategy which accounts for the insurmountable quality of the OT is leaning towards the external locus. In utterances leaning towards the external locus stating the unfavorable circumstances for the SNT, several subcategories can be identified: external-fateful circumstances, others' behaviors directed against the SNT, the removal of agency and responsibility through passivization.

**Table 6** Inadequate quality of the SNT

---

[1]	i bio apsolutno nedelotvoran (and was absolutely ineffective)
[2]	grogirana "banda" (a drowsy "gang")
[3]	Obrana nam je bila bušna (Our defense was full of holes)
[4]	Taktika mu nikad nije bila jača strana (Tactics were never his strong suit)
[5]	u timu koji je još jednom pokazao da ne zna da se brani. (in a team which once again showed that they cannot defend themselves)
[6]	katastrofalne igre naše odbrane. (the catastrophic play of our defense)
[7]	Neopreznost Gudelja (The recklessness of Gudelj)
[8]	smušene reakcije odbrane Srbije (the baffled reaction of the Serbia's defense)

---

In these accounts (Table 6) individual players, the coach, and team as a whole are depicted as lacking in quality.

**Table 7** Unfavorable circumstances - fate and external factors beyond control

---

[1]	a samo Srbija uvek uspe da bude gora nego što to zaista jeste. To nam prokletstvo nikad neće dati mira. (and only Serbia always manages to be worse than it really is. That curse will never leave us alone.)
[2]	kako su raznorazne priče uticale na ekipu u Kataru. (how all sorts of stories affected the team in Qatar)
[3]	Imamo tim za četvrtfinale, međutim, nekad mora mnogo stvari da se poklopi. (We have a team worthy of the quarter finals; however, sometimes many things have to align.)
[4]	Švajcarska ponovo kobna po Srbiju (Switzerland is again fatal for Serbia)
[5]	Meč je počeo loše po Srbiju (The match started poorly for Serbia)
[6]	možda nismo imali sreće (perhaps we had no luck)
[7]	ma koliko je bila velika vera da se u Dohi može ponoviti lisabonsko čudo (no matter how grand the faith that the Lisbon miracle can be repeated in Doha)
[8]	Džaka nije propustio priliku da napravi frku sredinom prvog poluvremena (Xhaka did not miss the opportunity to make a fuss in the middle of the first half)

---

The loss has been attributed to some external factors (Table 7), that is, unrelated to the quality of the players and the game: gossip as a primary focus, a poor onset, others creating a fuss. Most examples, however, relate to fate and luck (a curse, everything has to align, faith is not enough, miracles did not happen), as if even the universe is against *us* – and once Serbia is without support and allies, it is too easy for it to be defeated. Along these lines are the examples from the following category, in which others are directly working against the SNT.

**Table 8** Examples of circumstances directly against the SNT

---

[1]	ali penal mu nije dodeljen. (but a foul was not ruled.)
[2]	i to pored sudije koji nekako to nije video. (and right by the referee who somehow managed not to see it.)
[3]	Sudija je odlučio da Strahinji Pavloviću pokaže žuti karton, zbog prekršaja nad Nejmarom. (The referee decided to issue a yellow card to Strahinja Pavlovic due to foul play over Neymar.)
[4]	Sudija oštetio Srbiju protiv Švajcarske (The referee harmed Serbia in the game against Switzerland)
[5]	Sličan start [...] Iranac nije kaznio javnom opomenom. (A similar start [...] the Iranian did not punish with a public warning.)

---



According to accounts given in Table 8, it is the responsibility of the referees to estimate whether foul play occurred, almost as if it did not depend on the actions of players themselves. So, a new reality is created in which opponents are not only the OT, but the referees as well, so a loss is guaranteed in such circumstances. To minimize the responsibilities of the SNT players even further, passivization is used in some examples.

**Table 9** The removal of agency through passivization

- 
- [1] jeste hvatanje za gušu Švajcarca od strane Vanje Milinkovića-Savića (...was the grabbing of the Swiss player's throat by Vanja Milinkovic-Savic)
  - [2] primljen gol kad mu vreme nije (a goal received at an inopportune time)
  - [3] Od očajja, do sjaja i nazad - Srbija ispustila pobeđu protiv Kameruna (From despair, to glory and back –the victory against Cameroon slipped from the hands of Serbia)
  - [4] ali im je sve na kraju iskliznulo kroz prste. (but in the end, everything slipped through their fingers.)
  - [5] a onda bili samo nemi posmatrači maestralne akcije (and then we were merely observers of a majestic action)
- 

The first example in Table 9. is very interesting as it almost entirely removes agency from the player who actually grabbed an opposing player by the throat, which is not only foul play, it is a life-threatening action, therefore sanctionable. Here, it is presented as something that happened to a Swiss player, and the agent is added as an afterthought (linguistically realized in a grammatical construction possible in Serbian, but very infrequent and perceived as awkward). Another aspect illustrated here is euphemizing the action itself, where *to grab (uhvatiti)* is very active and willful, while turning the verb into a verbal noun *grabbing (hvatanje)* creates a more passive situation. Other examples vary in the ways passivization is achieved, but mostly rely on the concept of loss as something that ‘happens’.

**Table 10** The great quality of the OT and their play

- 
- [1] Švajcarci su silovito počeli (The Swiss are off to a forceful start)
  - [2] Posle poraza od moćnog Brazila u prvom kolu (after the loss from the mighty Brazil in the first round)
  - [3] Petostruki šampion planete je potpuno zaslužen stigao do trijumfa nad našom selekcijom, golovima u drugom poluvremenu. (The five-time champion of the planet has deservedly made it to the triumph over our national team, by scoring goals in the second half.)
  - [4] brzonogi Vinisijus (the fast-legged Vinicius)
  - [5] Lucidni Nejmar (Lucid Neymar)
  - [6] inteligentni Švajcarac (the intelligent Swiss player)
- 

Attributing realistic assessments of the quality of the OT game or players speaks in favor of placing the locus of control internally. Examples of such accounts are given in table 10. However, when such qualities are given additional values, augmented and hyperbolized, this might present a shift in the placement of the locus of control, as the purpose of such characterization is to present the reality of an unlikely victory for the SNT, therefore similar to the fate-related external circumstances (see Table 9).

**Table 11** The OT quality exceeds the SNT's quality – justification of the loss

[1]	"Primili smo golove na neverovatno glup način i nismo uspeali da se vratimo" ("We received the goals in an unbelievably stupid way and did not manage to come back from that")
[2]	Drugi srpsko-švajcarski "rat" (The second Serbian-Swiss "war")
[3]	BRAZIL JE, IPAK, PREJAK - Srbija nemoćna pred prvim favoritom (Brazil is, after all, too strong – Serbia is powerless against the true favorite)
[4]	Orlovi su izgubili od petostrukog svetskog šampiona (The Eagles lost to the five-time world champion)

### Survey Results

The *Chi*-square test of independence was calculated to assess the relationship between the variable named *Victory* and the variable named *Loss*. There was no significant relationship between the two variables,  $\chi^2_{(1, 161)} = 0.017$ ,  $p = .897$ , followed by a negligible *Cramer's V* and a Contingency Coefficient of 0.010. Table 12. shows a crosstabulation of the frequencies of the variables *Victory* and *Loss*.

**Table 12** Victory x Loss Crosstabulation

		Victory		Total
		<i>Internal</i>	<i>External</i>	
Loss	<i>Internal</i>	76	62	138
	<i>External</i>	13	10	23
Total		89	72	161

Regularity and consistency have not been found in the interpretation of the causes of the cases *Victory* and *Loss*. The obtained frequencies do not speak in favor of the self-serving bias. However, in both cases, the majority of interpretations relied on internal factors, which is why an additional analysis was conducted to examine if gender is a difference source.

The *Chi*-square test of independence was performed to assess the relationship between the variables *Victory* and *Gender*. There was a significant relationship between the two variables,  $\chi^2_{(1, 161)} = 4.615$ ,  $p = .032$ , followed by a weak but significant *Cramer's V* of 0.169 and a Contingency Coefficient of 0.167. The *Gender* and *Victory* crosstabulation is shown in Table 13.

**Table 13** Gender x Victory Crosstabulation

		Victory		Total
		<i>Internal</i>	<i>External</i>	
Gender	<i>Male</i>	51	29	80
	<i>Female</i>	38	43	81
Total		89	72	161

The male respondents have a tendency for the internal locus of control in the interpretation of *Victory* when compared to the female sample. The difference is moderate but there is a statistically significant negative correlation.

The *Chi-Square* test of independence was calculated to assess the relationship between the variables *Loss* and *Gender*. There was a significant relationship between the two variables,  $\chi^2_{(1, 161)} = 5.980$ ,  $p = .014$ , followed by *Cramer's V* of 0.193 and a Contingency Coefficient of 0.189. The *Gender* and *Loss* crosstabulation is shown in Table 14.

**Table 14** Gender x Loss Crosstabulation

		Loss		Total
		<i>Internal</i>	<i>External</i>	
Gender	<i>Male</i>	74	6	80
	<i>Female</i>	64	17	81
Total		138	23	161

In the interpretation of *Loss*, both the male and female respondents leaned toward internal factors, and we singled out a statistically significant positive correlation.

On the overall sample, no statistically significant consistency was found in tendencies of the respondents towards the internal or external locus of control, irrespective of the *Victory* or *Loss* cases. Gender variations are visible in the interpretation of the *Victory* case, represented by a greater frequency of males towards internal factors, and toward external factors with the females.

The independent samples *t*-test was calculated to compare age in *Internal* and *External* locus of control preferences in both situations – *Victory* and *Loss*. There was no significant difference in age between *Victory Internal* ( $M = 30.438$ ,  $SD = 9.672$ ) and *Victory External* ( $M = 32.389$ ,  $SD = 12.278$ );  $t_{(159)} = 1.1$ ,  $p = .273$ . There was a significant difference in age between *Loss Internal* ( $M = 32.986$ ,  $SD = 10.893$ ) and *Loss External* ( $M = 21.261$ ,  $SD = 2.241$ );  $t_{(159)} = 11.190$ ,  $p < .001$ . When interpreting *Loss*, a statistically significant difference was found among the older respondents, who leaned towards internal factors, while younger respondents leaned towards external factors.

## BRIEF DISCUSSION

Reporting on the outcomes of national team competitions is a complex task, involving various types of pressures. On the one hand, wide audiences must be engaged and on the other, writing must reflect the interpretative tendencies of the public discourse (Sabedini, 2014). As individuals, reporters shape the public discourse but are also shaped by it, and so their reporting style is formed both consciously and intuitively. In other words, their interpretative style is not only a conscious tendency to appease the wide readership, but it also reflects their own implicit biases towards the dominant discourse.

This multilayered study has shown that an interpretative tendency linked to victories and losses exists in the Serbian public discourse namely in 1) sport reporting about national teams and 2) the interpretation of the sport audience.

Research of this type is difficult to find, and so interpreting the results within the referential framework is a challenging task. Literature in general points to consistent findings that winners are more likely to interpret the outcomes internally compared to losers, and that this difference is more prominent in individual than team sports (De Michele, Gansneder, & Solomon, 1998; Zaccaro, Peterson, & Walker, 1987). The closest research design to the one carried out here is “Attributions in the Sports Pages” by Lau

and Russel (1980). They state that internal attributions for success were found in accounts of victories, while external attributions were identified in the coverage of failures.

Our linguistic content analysis of the press identified several key interpretative tendencies in accounts of victories and losses of the Serbian national football team. When reporting on victories, the following discursive practices place the locus of control internally:

- [1] Agency of the SNT (emphasizing the active part in achieving victory)
- [2] Passivization of the OT (in contrast to the agency of the SNT)
- [3] Augmenting abilities of the players, coach, and the SNT team
- [4] Emphasizing the significance of the victory (historic success)
- [5] Emphasizing the difficulty of winning (thus augmenting the achievement of the SNT)
- [6] Emphasizing the low probability of winning (minimizing the effects of external in favor of internal factors)
- [7] Emphasizing the quality of the OT (maximizing victory over the OT)

In newspaper accounts of losses, contrary to expectations, the external locus of control has not been found as a dominant interpretative tendency. However, specific self-serving biases were found, whose aim is to relativize, rationalize and justify the unfavorable outcomes. The internal locus of control of the SNT was found responsible for the failure in conjunction with lessening or removing agency, and was lessened by external factors:

- [1] Passivization of the SNT (they suffered loss)
- [2] Agency of the OT
- [3] Criticism of the SNT quality
- [4] External locus of control (circumstances – esoteric, fate, poor luck)
- [5] Injustice (the willfulness of others – referees)
- [6] Emphasizing the quality of the OT (rationalization of failure)
- [7] Indifference

In both cases, a self-serving bias has been found, and in the case of losses it is accompanied by defensive attribution, as a mechanism of biased defending oneself from accepting one's own responsibility for failure (Walster, 1966). Any cognitive or perceptual process, if distorted by the need to maintain and enhance self-esteem, can be referred to as a self-serving bias, as is the tendency to perceive oneself in a favorable manner (Myers, 2015). Individuals tend to ascribe success to their own abilities and efforts, but ascribe failure to external factors (Campbell & Sedikides, 1999). Motivational factors such as self-enhancement, self-presentation and cognitive processes such as locus of control and self-esteem are responsible for these interpretative tendencies, but also some cultural specificities (Shepperd, Malone & Sweeny, 2008).

There is evidence of cross-cultural differences in the tendency to exhibit the self-serving bias, particularly when considering individualistic (Western) versus collectivistic (non-Western) societies (Al-Zahrini & Kaplowitz, 1993; Schuster, Forsterlung, & Weiner, 1989; Hooghiemstra, 2008; Kudo & Numazaki, 2003).

Serbia is a collectivistic society (Hofstede Insights, 2022). People in such societies belong to groups, are interconnected, loyal and display a high level of conformity. Strong familial and friendly relationships presuppose specific roles and responsibilities within the groups. This speaks in favor of strong identification with the SNT, involvement of the

fans, affective aspects. Evident is also the need to single out individuals who are responsible, in this case the players, for successes or losses. According to Hofstede's study, Serbia is characterized by a large distance of power and avoidance of uncertainty, with very low scores on the indulgence dimension. This is in line with the authoritarian collective character and tendency towards authoritarian types of cognitive biases. Ego-defense mechanisms of psychological projection are frequent, authoritarian aggression in the humiliation of the loser; great importance is assigned to strength, force, and power; winners are heroes and idolization happens; there is a tendency to express cynicism, destructiveness, suppression; epic hyperbole and a tendency to believe in mystic determination and superstition (Adorno, Frenkel-Brunswik, Levinson, & Sanford, 2019/1950; Altemeyer, 1998). One of the most prominent dimensions of the authoritarian character is the tendency towards the fundamental attribution error.

The examination of the interpretative tendencies of victories and losses with sport fans has shown significant differences across gender and age in the preference of external or internal locus of control. Research so far has shown that in general there are no significant differences in gender when locus of control is observed independently from the behavior domain (Schultz & Schultz 2005). The majority of these studies pertained to the domain of academic achievements, where the males showed a greater tendency towards the internal locus in interpreting academic or business successes than the females. Other studies indicate that both males and females are becoming more external. Factor analyses of locus of control measures indicate that males and females are relatively similar in primary factors, but may differ substantially in some secondary factors (Sherman, Higgs, & Williams, 1997).

Although more informative psychological instruments and research techniques have not been used in this research, the obtained results can be seen as corresponding to the ones in literature, even on a small sample such as this one. The males are moderately, but with a statistical significance, more prone to internalization in interpretation of sport success. In line with the results found through the linguistic analysis, there are no significant differences in the interpretation of losses and the externalization of the locus of control. Older respondents showed a greater tendency towards internalization compared to the younger ones. This finding corresponds to the general tendency where internalization of the locus of control grows with maturity (Tamayo, 1993; Shewchuk, Foelker, & Niederehe, 1990), although the majority of the findings emphasize the importance of specific domains and the multidimensionality of the phenomenon (Lachman, 1986). The contradiction of the findings in literature can be explained by the range of the respondents' age, that is, tendencies revert back to externalization in old age, and this concept must be observed and examined orthogonally (Heckhausen & Schulz, 1995; Ryckman & Malikioti, 1975).

## CONCLUSION

The multidisciplinary basis of this paper encompasses sport, media, social psychology, cognitive sciences, and linguistics. Therefore, the multimethod approach was used to analyze interpretative styles and cognitive biases in the interpretation of victories and losses of the Serbian national football team in news reports on their matches during the qualifications and World Cup in Qatar 2022. The obtained results are informative and to a degree, expected, and correspond to the current research in this field. Elements of

cognitive biases were identified: the self-serving bias, internal attribution, and high affective involvement in the interpretation of victories. Additionally, in the interpretations of losses, defense mechanisms were found in the form of defensive attribution, externalization, distancing, and passivization of the SNT. The discourse analysis revealed descriptive insight into the content of these phenomena, thus illustrating latent codes of the national discourse, while the survey results revealed insight into cross-group (gender and age) differences in the interpretative tendencies of the sport audiences. The findings of this paper can be applied in sport psychology to awareness raising and educating on the cognitive biases (of players, referees, coaches, public, journalists), by pointing out language patterns which participate in biased discursive practices. Raising awareness about the forms and consequences of biased reporting on sensitive sport topics is not only an ethical and a matter of fair play, but also contributes to the development of collective responsibility, mental health, and self-awareness.

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## KOGNITIVNA PRISTRASNOST PRI INTERPRETACIJI USPEHA I PORAZA U SPORTU

*Svrha novinskih izveštaja je da prenesu činjenice i informacije, međutim, u medijskom izveštavanju o utakmicama fudbalske reprezentacije Srbije veoma je prisutan stav o tome zašto i kako su utakmice izgubljene ili dobijene. Cilj rada je da se ispita da li je kognitivna pristrasnost (lokus kontrole, pristrasnost očuvanja, fundamentalne atribucijske greške) prisutna u interpretaciji sportskih ishoda u javnom diskursu, i ako jeste, da li se ona odražava i na uzorak sportske publike. Korišćen je multimetodski pristup za analizu interpretativnih stilova i različitih vidova kognitivnih pristrasnosti u interpretaciji pobjeda i poraza nacionalnog fudbalskog tima u sportskoj štampi i među sportskom publikom, tokom SP u Kataru 2022. Autori su sproveli istraživanje mešovitog tipa, kombinujući kvalitativne (kritička analiza diskursa) i kvantitativne metode (anketa sprovedena na 161 ispitanika) u skladu sa multidisciplinarnim pristupom ovoj temi, koji obuhvata lingvističke i psihološke teorijske okvire. U prvoj fazi, identifikovali smo jezička sredstva koja oblikuju interpretativne tendencije u sportskim medijima. Prepoznati su elementi kognitivnih pristrasnosti – pristrasnost očuvanja, unutrašnja atribucija i visoka afektivna involviranost u interpretaciji pobjeda, dok se u interpretaciji poraza pojavljuju i odbrambeni mehanizmi kroz odbrambenu atribuciju, eksternalizaciju, distanciranje i pasivizaciju nacionalnog tima. Druga faza (anketno istraživanje) utvrdilo je postojanje međugrupnih (polnih i starosnih) razlika u interpretativnim tendencijama sportske publike. Osobe muškog pola su sklonije internalizaciji pri interpretaciji pobjeda od ispitanica, dok su stariji ispitanici skloniji internalizaciji pri interpretaciji poraza.*

*Ključne reči: kognitivna pristrasnost, spoljašnji i unutrašnji lokus kontrole, kritička analiza diskursa, interpretacija sportskih uspeha i poraza, fudbalska reprezentacija Srbije*



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