
COMPARISON OF QUALITIES OF ATTENTION BETWEEN STUDENTS FROM BASKETBALL AND VOLLEYBALL TEAMS IN THE UNWE -SOFIA, BULGARIA

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Abstract: In the contemporary training and sport-competitive process, the requirements towards the contestants as regards their mental abilities continuously increase. For the sport games trainers of biggest interest are the qualities of attention – concentration and stability, which often are a decisive factor for achieving good results. These qualities of attention with basketball and volleyball contestants dominate due to the variable character of the game and the requirement for concentration on the realization of a given blow or pass, as well as the continuous following of the movement of team-mates and opponent players. The analysis of the results from the researches help getting an objective assessment of the levels of the indices under study that would help the sport teacher to make corrections in the content of educational-training plan. Also, the educational-training process teachers could focus on specialized methods for improvement of the qualities they are interested in. Research on concentration and stability of attention of students from educational groups has been conducted by Iliev (2008), but these results are not supported by statistical data. Research of the indices for attention and their comparison between representative students' basketball and volleyball teams has not been made in our country so far. Coming from the importance of the problem, we have investigated the concentration and stability of attention of the male basketball and volleyball teams of the University of National and World Economy (UNWE - Sofia). Testing has been made with 12 basketball contestants and 13 volleyball ones as per Schulte Table with numbers from 1 to 25 in 5 different combinations, given in succession. The average levels of concentration and stability of attention of both teams have been investigated and established. We have defined the level of development and variety of indices for concentration and stability of attention with students - sportsmen. The values of coefficient of variation define the teams as comparatively homogeneous on both indications, excluding the stability of attention with basketball players, whose results for V% define the group as heterogeneous. Statistically reliable differences in the results have not been established on both investigated indications. Specific recommendations have been made for future work with the representative basketball and volleyball teams of UNWE, reporting the results got.

Keywords: students, sportsmen, attention, concentration, stability

1. INTRODUCTION

More and more frequently in the comments of the sport championships of different ranking, it is spoken both of the level of the conditional and technical preparation of sportsmen, and of their psychic stability and qualities as well. We have regularly heard remarks such as: *he is not concentrated well, they have not enough concentration, they are non-concentrated, attention is directed elsewhere* and etc. All this is commented, but in order to clarify the condition of separate sportsmen or the whole team in the best way, it is necessary for them to be subjected to specialized tests at regular intervals, for defining the level of certain qualities that we are interested in. They are carried out for certain sportsmen and hence the average levels of the whole teams are defined. Thus, the educational-training process teachers could focus on specialized methods for improvement of the qualities of interest. No doubt, qualities of attention - concentration and stability are important for basketball and volleyball sports. In researches of Stavrev (Ставрев, 2011; 2013) for the economic profession, these psychic qualities have been established as professionally significant. They are twice as important for the students from the University of National and World Economy (UNWE).

From the considered up to now literary sources, researches with different groups have been established. Such is the study the table tennis groups from Physical culture subject in UNWE show better results at the concentration of attention. At the stability of attention, the individuals doing table tennis sport also show better result in comparison with the female students on mass aerobics. Bozhkova, Dyakova and Stavrev (2013) compared the same two qualities of attention of students from University of Economics (UE) - Varna and UNWE. The average values at study of concentration of attention are 34.9 for the students from UNWE and 35.25 for UE - Varna. The insignificant difference of 0.35 referring the concentration of attention is in favor of the students from the UNWE. Regarding the stability of attention, the average achievements are 0.99 for UNWE and 1.22 for UE - Varna. Results reveal extremely high stability of attention with the students from UNWE (stability is the highest at an index equal to 1). Much weaker are the results with this index with the students from UE - Varna. Stavrev (Ставрев, 2016) analyzed

results of initial and final testing of concentration of attention with students from educational groups on basketball in UNWE. The index has an improvement, but the difference is not supported statistically ($P(t)=73.36\%$). The influence of volleyball game on the volume, concentration and distribution of attention of students from the University of Medicine - Sofia was analyzed by the authors Bozhkova, Bozov and Dyakova, (Божкова & Бозов & Дякова, 2007). They have established a positive influence on these qualities of attention. Stavreva and Stavrev (Ставрева & Ставрев, 2015) also established the significance of the qualities of attention for the Mining engineer profession. Iliev (Илиев, 2008) compared the concentration and stability of attention with students from educational basketball and volleyball groups in UE - Varna. Individuals doing basketball sport outclass those from volleyball groups on both indices, but these results are not supported statistically. Arsova (Арсова, 2017) examined the concentration and stability of attention of female volleyball players from the team of UNWE on the finals at the students' championship. She has established that both indices are stable and on a good level prior the official matches. It is recommended to include exercises directed towards the mental capabilities of the contestants too. Research of the indices for attention and their comparison between students-sportsmen on basketball and volleyball in UNWE has not been carried out up to now.

2. AIM AND TASKS

Aim of our study is to establish the passing level of the qualities of attention at the beginning of the training exercises for the season with students-sportsmen from both teams.

Tasks, we have set are:

1. To establish the average levels of concentration and stability of attention for both teams;
2. To compare the results for concentration and stability of attention between students-sportsmen doing basketball and volleyball sport in UNWE and to establish the differences;
3. To make recommendations for future work with representative teams, reporting the results got.

3. METHODOLOGY

Research was carried out in the beginning of the educational year 2019/2020 in sport complex „Bonsist“. Twenty five students totally have participated in it – twelve from the representative basketball team and thirteen from the representative volleyball team. We have measured concentration of attention by Schulte tables with numbers from 1 to 25 in various combinations given consecutively (Цветков, 2006). Stability of attention is defined by reporting the proportion of the result from Table No.5 to Table No.2 to 0.01. The closer the result got is to 1 (one), the better the stability of attention of the investigated person is. Results from the research are subjected to mathematical-statistical processing, applying the following mathematical-statistical methods:

- *Variation analysis* - for defining the average levels and variation of the investigated indices with each of the observed combinations;
- *Comparative t-criterion of student* - for proving the significance of differences between the average levels of the investigated indications and level of reliability $P(t) \geq 95\%$.

4. ANALYSIS OF THE RESULTS

With the researches carried out with students from the representative basketball and volleyball teams for defining the level of concentration and stability of attention we have got results, indicated on Table 1 and Fig. 1. The average level for students from basketball team for concentration of attention is 29.51. For students from volleyball same is 30.17. Average values on this index are very close, but there is a significant difference in the spread of the results ($r=18.73$ basketball players and 29.0for volleyball players). Hence, the coefficients of variations for both investigated combinations are: for basketball players $V=17.79\%$, and for volleyball players $V=23.68\%$. These values define both groups as comparatively homogenous as regards the concentration of attention.

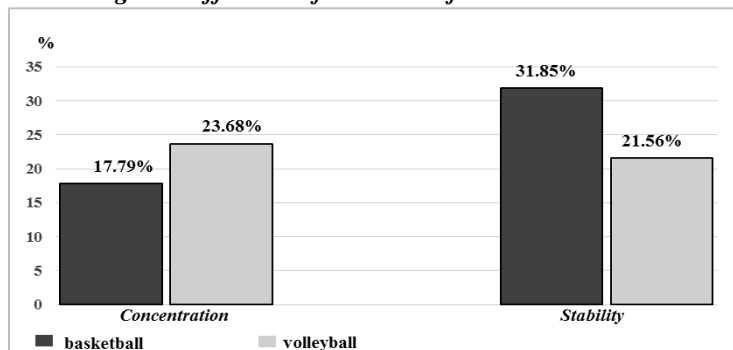
Table1. Variation of indicators for concentration and stability of attention with students-sportsmen from basketball and volleyball teams in UNWE.

SPORT	Indicators Studied	n	X min	X max	R	\bar{X}	S	V%	Ex	As
Basketball	Concentration of attention	12	22.55	41.28	18.73	29.51	5.25	17.79	0.985	0.887
Volleyball		13	20.15	49.15	29	30.17	7.14	23.68	1.495	3.65
Basketball	Stability of attention	12	0.77	2.05	1.28	1.08	0.34	31.85	2.306	6.249
Volleyball		13	0.83	1.64	0.81	1.00	0.22	21.56	2.373	6.644

It is deemed (Гигова, 2006), that scattering of indication is insignificant (quotation is homogeneous), when its value is up to 10%. Between 10 and 30% the quotation is approximately homogeneous. When it is over 30% the scattering of the indication is significant (quotation is extremely heterogeneous).

Results of both male teams are significantly better in comparison with the research of concentration of attention of female volleyball team of UNWE - 96.63 s (Арсова, 2017), as well as from the average values of concentration of attention 34.9 s for students from UNWE and 35.25 s for UE - Varna in research of students from basketball educational groups from both universities (Bozhkova & Dyakova & Stavrev, 2013).

Fig.1. Coefficients of variation of indicators studied



As regards the stability of attention, the average result for the young male volleyball team players is 1.0. It is the absolute value for the highest level of stability of attention. The value of basketball players is 1.08. The spread of the result, in contrast to the previous index is bigger with the basketball players ($r=1.28$), and that of volleyball players $r=0.81$. Coefficient of variation for the basketball team is 31.85%, which defines the investigated group as heterogeneous. With volleyball team $V=21.56\%$. This result defines the studied combination as comparatively homogeneous.

The average values on both studied indicators of the teams show good and excellent levels of development. It is a good testimony for the work and methods used in the training process on basketball and volleyball of the trainers in UNWE.

Comparing the stability with that of female volleyball team players of the UNWE (1.01), the result is almost equal with that of male volleyball team players, respectively to the absolute value. They outclass the males from basketball team on this index (1.08). Comparing the stability of both teams with that of students from the educational groups on basketball in UNWE (0.99) and UE - Varna (1.22), it is e apparent that volleyball players outcast both groups of students, and males from basketball team have shown weaker results than the colleagues from the educational basketball groups in UNWE, and a better stability of attention than the students from the educational basketball groups from UE - Varna.

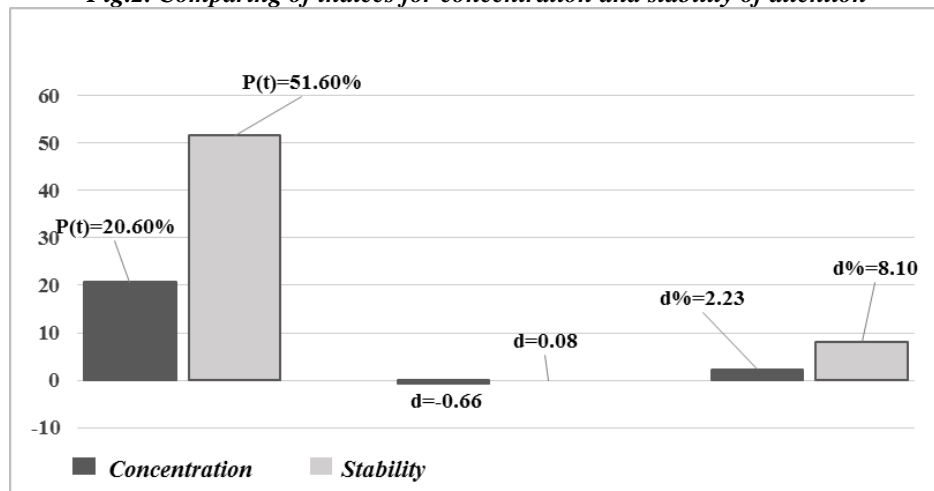
To prove the significance of differences between the average levels of the studied indicators of students from basketball and volleyball team in UNWE, we have applied comparative t-criterion of Student, at a level of reliability $P(t) \geq 95\%$. The results got are noted on Table 2. At concentration of attention the difference is $d=-0.66$, and its percentage is $d\%=2.23$, which is practically insignificant difference. This difference is not statistically reliable, which is explained by the result for $P(t)=20.60\%$ (Fig.2).

With the second studied indicator for stability of attention, difference of $d=0.08$ is got. The percentage of this difference is $d\%=8.10$. Statistically, this difference is not supported by the necessary reliability too ($P(t)=51.60$).

Table 2. Comparison of indicators for concentration and stability of attention with students-sportsmen from the basketball and volleyball teams in UNWE

Investigated indices	NUMBER OF SPORT STUDENTS AND RESULTS						DIFFERENCES		Statistical significance	
	n	Basketball		n	Volleyball		d	d%	t	P(t)%
		\bar{X}	S		\bar{X}	S				
Concentration of attention	12	29.51	5.25	13	30.17	7.14	-0.66	2.23	0.26	20.60
Stability of attention	12	1.08	0.34	13	1.00	0.22	0.08	8.10	0.71	51.60

Fig.2. Comparing of indices for concentration and stability of attention



5. CONCLUSIONS

1. We have established the level of development and variety of indices for concentration and stability of attention with students from the representative basketball and volleyball teams in UNWE. The values of coefficient of variation define the teams as comparatively homogeneous with both indications, excepting the stability of attention with basketball players whose result for V%, define the group as heterogeneous;
2. Statistically reliable differences in the results have not been established with both investigated indications;
3. Exercises in the training education for perfection and maintaining of high level of concentration and stability of attention should continue, these qualities have been established as significant for the profession-economist too.

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