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## ABOUT EXPEDIENCY OF ATTACK AND DEFENSE PARALLEL STUDY IN GRECO-ROMAN WRESTLING AT THE STAGE OF INITIAL TRAINING

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Annotation. As a result of scientific-methodical literature analysis it was revealed that methodical techniques, which help to realize the ideas of gradual skills and abilities mastering, are not developed in Greco-Roman wrestling programs at the stage of initial training. First of all it is necessary to provide standard coordination formation during attacking techniques fulfillment, defensive actions should be considered of secondary importance. If studying technical actions in case of lying fighting, in parterre are fulfilled in terms of relatively stable positions, then in case of standing fighting material mastering happens in terms of non-stable conditions of balance keeping, that is why, there appear serious problems of safety provision in case of cross attacks. In this connection during standing fighting at the initial stage of training it is necessary to provide stable conditions without any outside dynamic interference. At the beginning of teaching throws it is necessary to master medial structure of the technique, the bases of which should be formed in technical actions classification. However, nothing was done for these theses realization in terms of state programs. In some scientific-methodical articles and in the content of the programs conditions for medial structures thorough mastering without distorting factor of outside interference are not taken into consideration. It is offered to study an attacking action simultaneously with defense and counter- techniques against it. Material. In order to reveal expediency of parallel study of attacking and defensive actions natural pedagogical experiment was held. Research methods: scientificmethodical literature analysis and summarizing, pedagogical observation, pedagogical experiment, Greco-Roman style wrestlers' competitive activity study, methods of mathematical statistics. **Results.** The article presents the analysis of the initial stage programs in Greco-Roman wrestling training. It was revealed that in previous programs methodical techniques, which help to realize the ideas of gradual skills and abilities mastering, were not developed at the stage of initial training in Greco-Roman wrestling. As a result of the pedagogical experiment it was proved that at the end of the 3<sup>rd</sup> year of study the competitive results of the respondents from the CG and the EF-1 were worse than the results of the EF-2, which didn't take part in competitions of the  $2^{nd}$  year of study. This fact is connected with the lagged effect of attenuated method of training without defense interference. *Conclusion*. As a result of a 3-year pedagogical experiment, which included the stage of initial training and the first year of the training stage, it was revealed that it was impractical to study defense and counter-techniques parallel with attacking technical actions during standing fighting.

**Keywords:** attacking techniques, Greco-Roman wrestling, defensive actions, quantitative index of effectiveness, counter-technique, activity index, winning rate, competitive activity, initial training stage.

If studying technical actions in case of lying fighting (breaking the bridge), in parterre (turnovers, drops and rolls below) are fulfilled in terms of relatively stable positions, then in case of standing fighting material mastering happens in terms of non-stable conditions of balance keeping [9] that is why there appear serious problems of safety provision in case of cross attacks. In this connection during standing fighting at the initial stage of training it is necessary to provide stable conditions without any outside dynamic interference. "A throw" is a difficult, constantly changing system of movements and nevertheless, it should be first presented as something stable, as a kind of construction [11]. At the beginning of teaching throws it is necessary to master medial structure of the technique, the bases of which should be formed in technical actions classification [10]. First of all it is necessary to provide standard coordination formation during attacking techniques fulfillment, defensive actions should be considered of secondary importance [12]. However, nothing was done for these theses realization in terms of state programs. our opinion, These requests, in are strengthened with the appearance of the Unified classification of technical actions in wrestling [15], owing to which a trainer has the structures of throws, starting from spatiotemporal level (type and class of a throw) to the dynamic level (group, subgroup of a throw). Mastering these structures of throws is a long-term period. However, according to several scientific-methodical articles [2, 7] and in accordance with the content of the programs [3, 4, 5] the conditions for thorough mastering medial structure, without interfering factor of external disturbance, were not taken into consideration. Instead of creating methodical techniques at the initial stage, which help to realize the ideas of gradual skills and abilities mastering [7, 14], it is offered to study the attacking action simultaneously with studying defense and counter-techniques against it. It is obvious that nothing will be mastered stably. There appear only lack of confidence will concerning the ability to realize the attacking

technique, which was observed in Grecowrestling sports Roman classes of comprehensive secondary school, where taught practice teachers, who desired to create accelerated technology of champions training. there are recommendations Though to postpone defense study for 6 months, to reproduce the technique in a month and etc. [18]. Counter-technique can't be more difficult than the studied attacking technique [1]. However, it is not the problem solution, as in state programs defense and countertechniques are offered to be studied parallel with the attacking actions.

In order to reveal expediency of attacking and defensive actions parallel study it was necessary to hold natural pedagogical experiment.

In this research work we supposed that attacking actions study at the stage of initial training, medial structures mastering without dynamic disturbing situations in a form of a qualified and even not qualified defense, helped to achieve medial structures, examined throws and knockings (shifts) quick mastering.

For the experiment realization 3 groups were created: one control group and 2 experimental groups (each included 26 people), with different objectives, programs and conditions of pedagogical control according to the years of study (scheme 1). At the same time, after "admission" test the participants of the experiment had corresponding physical normatives for enrollment in sports school for children and teen-agers and didn't have significant differences according to mean group indices.

Great number of trainees, which exceeds normatives of groups fill rate of the initial training stage, is connected with the necessity to have statistically sufficient number of respondents by the end of the 3<sup>rd</sup> year of study and with one of the objectives of the experiment – check the measures of preserving the contingent of trainees.

Respondents from the control group during 3 years were taught in accordance with Greco-Roman wrestling program for sports schools for children and teen-agers and sports

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schools for children and teen-agers of the Olympic reserve for the 1<sup>st</sup>-3<sup>rd</sup> years of study, where attacking and defensive actions parallel study, starting from the 1<sup>st</sup> year of study, is provided. At the same time, lessons were held in accordance with weekly schemes of lessons, created in accordance with the idea of model tasks.

It should be noted that in wrestling textbooks [13], in terms of great number of recommendations concerning scholastic planning of sports results increase and programs of all kinds of wrestling, the scheme of lessons, which correspond with the definite pedagogical objectives, are not presented.

Scheme 1

Training facilities in Greco-Roman wrestling control and experimental groups during natural pedagogical experiment of testing expediency of attack and defense parallel study at the stage of initial training

| Year  | Control group                      | The 1 <sup>st</sup> experimental group | The 2 <sup>nd</sup> experimental group |  |  |  |  |  |  |  |  |  |
|---|------------------------------------|--|--|--|--|--|--|--|--|--|--|--|
| the 1 <sup>st</sup>   | Teaching attacking                 | Teaching attacking                     | Teaching attacking                     |  |  |  |  |  |  |  |  |  |
|   | techniques with qualified          | techniques without any                 | techniques without any                 |  |  |  |  |  |  |  |  |  |
|   | defense parallel study             | defense study                          | defense study                          |  |  |  |  |  |  |  |  |  |
|   |                                    |  | -                                      |  |  |  |  |  |  |  |  |  |
| Evaluation criteria of effectiveness for experimental groups: |                                    |  |  |  |  |  |  |  |  |  |  |  |
| - preserving the contingent of trainees;                      |                                    |  |  |  |  |  |  |  |  |  |  |  |
| - quality of demonstrating techniques                         |                                    |  |  |  |  |  |  |  |  |  |  |  |
| the 2 <sup>nd</sup>   | The same                           | Teaching attacking                     | 6                                      |  |  |  |  |  |  |  |  |  |
|   |                                    | techniques with qualified              | 1 0                                    |  |  |  |  |  |  |  |  |  |
|   |                                    | defense parallel study                 | studying conditional,                  |  |  |  |  |  |  |  |  |  |
|   | dosed defense                      |  |  |  |  |  |  |  |  |  |  |  |
|   | on criteria of effectiveness for   | experimental groups:                   |  |  |  |  |  |  |  |  |  |  |
| -   | ing the contingent of trainees;    |  |  |  |  |  |  |  |  |  |  |  |
| - quanty  | of demonstrating techniques i      | n terms of appearing initiated by      | y a trainer dynamic situation          |  |  |  |  |  |  |  |  |  |
| the 3 <sup>rd</sup>   | The same                           | The same                               | Teaching attacking                     |  |  |  |  |  |  |  |  |  |
|   | The sume                           |  | techniques with qualifie               |  |  |  |  |  |  |  |  |  |
|   |                                    |  | defense study                          |  |  |  |  |  |  |  |  |  |
| Evaluati  | on criteria of effectiveness for a | all participants of the experiment     |  |  |  |  |  |  |  |  |  |  |
|   | ing the contingent of trainees;    |  |  |  |  |  |  |  |  |  |  |  |
| - activity  | y index;                           |  |  |  |  |  |  |  |  |  |  |  |
| - quanti  | tative index of effectiveness;     |  |  |  |  |  |  |  |  |  |  |  |
| -   | tive index of effectiveness;       |  |  |  |  |  |  |  |  |  |  |  |
|   | ic security index;                 |  |  |  |  |  |  |  |  |  |  |  |
|   | ative effectiveness index;         |  |  |  |  |  |  |  |  |  |  |  |
| - profita   | bility.                            |  |  |  |  |  |  |  |  |  |  |  |

The respondents of the 1<sup>st</sup> experimental group during the 1<sup>st</sup> year of study learned the same attacking techniques during standing fighting, but without defense and counter-techniques parallel study, in accordance with created for them weekly schemes of lessons.

During the 2<sup>nd</sup> and the 3<sup>rd</sup> years of study attacking actions study during standing fighting was held parallel with qualified

defense study, including counter-techniques, in accordance with weekly schemes of lessons.

The respondents of the 2<sup>nd</sup> experimental group during the 1<sup>st</sup> year of study studied the same attacking techniques during standing fighting without defense and counter-techniques parallel study, in accordance with created for them weekly schemes of lessons.

During the 2<sup>nd</sup> year of study attacking actions study during standing fighting was held in terms of dosed defense showing resistance using hands (without regrasping and struggle for holds).

During the  $3^{rd}$  year of study attacking actions study during standing fighting was realized parallel with defense and countertechniques study.

In order to provide integrity of experiment the program of studying fighting in parterre and lying stayed unchanged in all three groups.

Opposition competitions for at the end of the 1<sup>st</sup> year of study, in accordance with the programs for sports schools for children and teen-agers, were not held.

At the end of the 2<sup>nd</sup> year of study "exit" test of physical qualities was held and it proved relative equality of mean group indices.

After that competitions were held between the respondents of the control (C), the 1<sup>st</sup> experimental group (EG-1) and the representatives of other collectives of physical culture. The respondents of the 2<sup>nd</sup> experimental group didn't take part in these competitions, as they were not ready to solve the objectives, set before the respondents of the control and the 1<sup>st</sup> experimental group, as taking part in them would be negative for psychological steadiness formation [15, 17].

Each participant had 4 combats. During these combats he had to avoid the representatives of own group. In general 96 combats were held.

In order to avoid any interference competitive activity estimation of all participants of the experiment was held only according to the results of standing fighting.

As a result of respondents' competitive activity in the control group mean group activity index (AI) in the control group was 0,32. During one minute of the combat in the average 3 attempts to fulfill a throw were held. The average quantitative index of effectiveness (QNIE) among them was 0,324. Qualitative index of effectiveness (QLIE) in the control group was 0,134, which proves that the average mark of the technique was 1,34 points.

The representatives of the  $1^{\text{st}}$  experimental group had almost the same AI, QNIE turned out to be lower (0,283). QLIE was 0,118 (p <0,01).

According to the index of profitability (P) the control group got 0,534, the  $1^{st}$  experimental group got 0,458 (p <0,001). (picture 1, table 1).

At the end of the 3<sup>rd</sup> year of study all participants of the experiment took part in competitions together with the representatives of other sports schools for children and teenagers.

Each participant had 6 combats, at the same time, he had to avoid the representatives of own group. In general 168 combats were held.

Table 1

Competitive activity results among the participants of the experiment during effectiveness checking of parallel teaching attacking and defensive actions at the stage of initial training in Greco-Roman wrestling after the 2<sup>nd</sup> year of study

|    | AI<br>C E-1 |       | QN     | VIE   | QL     | JE    | Р       |       |
|----|-------------|-------|--------|-------|--------|-------|---------|-------|
|    |             |       | C E1   |       | C E-1  |       | С       | E-1   |
|    | 0,320       | 0,324 | 0,338  | 0,283 | 0,134  | 0,118 | 0,534   | 0,458 |
|    | 0,051       | 0,037 | 0,053  | 0,040 | 0,034  | 0,043 | 0,041   | 0,071 |
|    | 0,013       | 0,009 | 0,013  | 0,010 | 0,009  | 0,011 | 0,010   | 0,018 |
| tβ | 4,83        |       | 3,37   |       | 3,64   |       | 3,73    |       |
|    | < 0,001     |       | < 0,01 |       | < 0,01 |       | < 0,001 |       |
|    |             |       |        |       |        |       |         |       |

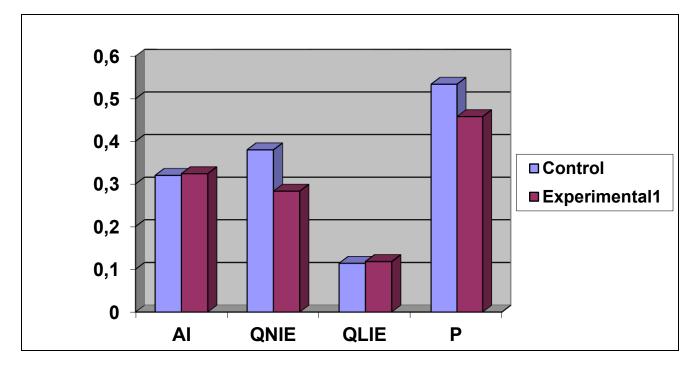
As a result of competitive activity of the representatives of the control group the mean group activity index (AI) was 0,31, qualitative index of effectiveness (QNIE) stayed almost the same, qualitative index of effectiveness (QLIE) increased till 0,161, and profitability index (P) decreased till 0,48.

Activity index (AI) and quantitative index of effectiveness (QNIE) among the representatives of the 1<sup>st</sup> experimental group decreased till 0,31. Qualitative index of effectiveness (QLIE) increased till 0,15, profitability index (P) increased till 0,48 (picture 2, table 2).

AI of the representatives of the 2nd experimental group was 0,35, QNIE -0,36 and QLIE -0,24, P-0,53, and this, in case of

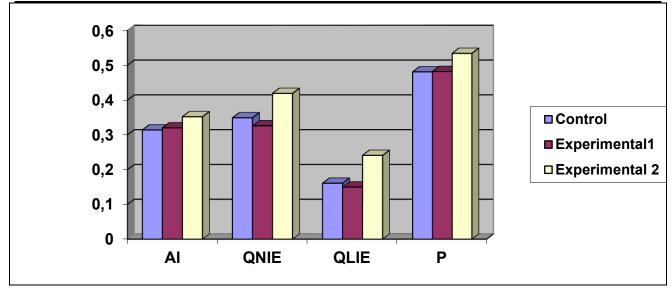
high confiding interval of intergroup difference (p < 0,01), mainly proves high effectiveness of their competitive activity (picture 2, table 2).

Comparing the years of study the representatives of the CG had decreased AI, according to quantitative index of effectiveness (QNIE) results stayed unchanged, according to qualitative index of effectiveness (QLIE) the results increased and according to profitability index (P) results decreased sharply (table 3).



Picture 1 – Competitive activity results of the participants of the experiment in checking effectiveness of parallel teaching attacking and defensive actions at the stage of initial training after the  $2^{nd}$  years of study

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Picture 2 – Competitive activity results of the participants of the experiment in checking effectiveness of parallel teaching attacking and defensive actions at the stage of initial training after the 3<sup>rd</sup> years of study

Table 2

Competitive activity results among the participants of the experiment in checking effectiveness of parallel teaching attacking and defensive actions at the stage of initial training in Greco-=Roman wrestling after the 3<sup>rd</sup> year of study

|   | AI   |       |       | QNIE  |       |       | QLIE  |       |       | Р     |       |       |
|---|--|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|
|   |  | E-1   | E-2   | С     | E-1   | E-2   | С     | E-1   | E-2   | С     | E-1   | E-2   |
|   | 0,314  | 0,320 | 0,352 | 0,339 | 0,309 | 0,365 | 0,161 | 0,150 | 0,241 | 0,481 | 0,482 | 0,534 |
|   | 0,038  | 0,040 | 0,051 | 0,071 | 0,040 | 0,069 | 0,030 | 0,035 | 0,043 | 0,034 | 0,046 | 0,052 |
|   | 0,010  | 0,010 | 0,013 | 0,018 | 0,010 | 0,017 | 0,008 | 0,009 | 0,011 | 0,009 | 0,012 | 0,013 |
| tβ  | 0,43   | 2,0   | 2,38  | 1,46  | -2,78 | -1,03 | 0,92  | 6,5   | 6,15  | 0,09  | 3,05  | 3,53  |
| p *   | 0,05   | 0,05  | <0,0  | >0,0  | 0,05  | <     |       | <0,0  | <0,0  | >0,0  | <0,0  | <0,0  |
|   |  |       | 5     | 5     |       | 0,05  | 0,05  | 01    | 01    | 5     | 1     | 1     |
| - t β values, shown in columns "C", relate to columns "C" – "E1", |  |       |       |       |       |       |       |       |       |       |       |       |
| - tβ  | t 0 suburg shown in columns "E1" solate to columns "E1" "E 2"            |       |       |       |       |       |       |       |       |       |       |       |
| $- t\beta v$  | - t $\beta$ values, shown in columns "E2", relate to columns "C" – "E-2" |       |       |       |       |       |       |       |       |       |       |       |

The results of the representatives of E-1 group according to activity index (AI) also decreased, according to quantitative index of effectiveness (QNIE) results increased, but with statistically inauthentic difference. According to qualitative index of effectiveness (QLIE) results increased with valid difference. According to profitability index (P) results also increased (table 3).

Table 3

Comparative results of competitive activity of the participants of the pedagogical experiment according to the years of study

| Year  | AI   |      |     | QNIE  |       |     | QLIE  |       |     | Р     |       |     |
|-------|------|------|-----|-------|-------|-----|-------|-------|-----|-------|-------|-----|
| of    | С    | E-1  | E-2 | С     | E-1   | E-2 | С     | E-1   | E-2 | С     | E-1   | E-2 |
| study |      |      |     |       |       |     |       |       |     |       |       |     |
| the   | 0,32 | 0,34 |     | 0,338 | 0,283 |     | 0,134 | 0,118 |     | 0,534 | 0,458 |     |

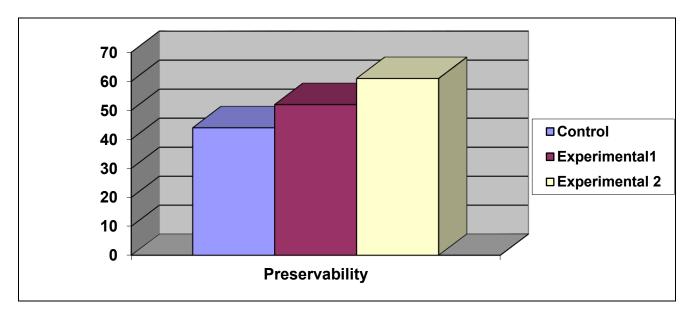
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| $2^{nd}$        |       |       |       |       |       |       |       |       |       |       |       |       |
|-----------------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|
| the             | 0,314 | 0,32  | 0,352 | 0,339 | 0,309 | 0,365 | 0,161 | 0,15  | 0,241 | 0,481 | 0,482 | 0,534 |
| 3 <sup>rd</sup> |       |       |       |       |       |       |       |       |       |       |       |       |
| β               | 0,366 | 1,487 |       | 0,045 | 1,838 |       | 1,8   | 2,252 |       | 3,939 | 1,109 |       |
| р               | >     | >     |       | >     | >     |       | >     | <0,0  |       | <0,0  | >     |       |
|                 | 0,05  | 0,05  |       | 0,05  | 0,05  |       | 0,05  | 5     |       | 01    | 0,05  |       |

At the end of the experiment (3 years) "exit" test of physical qualities was held, the results of which prove insignificant difference between mean group indices.

During the period of the experiment 44% of people remained in the control group,

in the 1<sup>st</sup> experimental group - 52% of people, in the 2<sup>nd</sup> experimental group - 61% and it proves the effectiveness of this methodology not only in sports aspect, but also in socialpsychological aspect (picture 3).



Picture 3 – The results of contingent of trainees (participants of the experiment) preservation concerning the effectiveness check of parallel teaching attacking and defensive actions at the stage of the initial training after the 3<sup>rd</sup> year of study

# Conclusion

1. Positive competitive results of the control group over the  $1^{st}$  experimental group after the  $2^{nd}$  year of study can be explained by the fact that mastered by that time defense and counter-techniques help to solve more successfully the objectives of competitive combat at the early stages of training.

2. Relative competitive results leveling among the representatives of the  $1^{st}$ experimental group after 3 years of study can be explained by lagged effect of positive influence of defense and counter-techniques absence during the  $1^{st}$  year of study, which helped to master medial structures of throws, dumpings and movings without interference of qualified defense. 3. At the end of the  $3^{rd}$  year of study both groups have worse competitive results in comparison with the  $2^{nd}$  experimental group, which didn't take part in competitions after the  $2^{nd}$  year of study. This fact is also connected with the lagged effect of attenuated method of teaching medial structures of attacking actions without qualified defense interference, as the absence of interference helps trainees to avoid lack of confidence concerning success of the technique.

Thus, as a result of a 3-year natural pedagogical experiment, which included the stage of initial training and the first year of the training stage (sports specialization), it was revealed that it was impractical to study defense and counter-techniques parallel with attacking technical actions during standing fighting.

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## THE EFFECTS OF PLYOMETRIC TRAINING ON SPRINT PERFORMANCE AND REPEATED SPRINT ABILITY OF FUTSAL PLAYERS

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Annotation. The aim of this study was to verify the efficiency of plyometric training in improving sprint performance and the repeated sprint ability (RSA) of futsal players. Methods. Twenty amateur futsal players (age  $20.25 \pm 1.8$  years, body mass  $75.3 \pm 8.4$  kg, height  $174.8 \pm 4.37$  cm and body mass index23.1  $\pm$  1.8 kg·m-2), the futsal players from Tissemsilt University league division. For the purposes of the protocol, we divided the group into an experimental group (EG) and a control group (CG) of 10 players respectively were thus created, at the beginning of the experimental protocol there was no significant difference between the two groups. The preliminary tests required subjects to perform a Sprint test, a Repeated sprint ability test (RSA), a counter movement jump (CMJ) and squat jumps (SJ). **Results.** The experimental group (EG), took place over a period of 8 weeks with an increasing and progressive increase of the workload, had two training sessions per week at a rate of 1h30 per session. The plyometric training (PT) consisted of 2–7 sets of 10 repetitions with 120-second rests. On completion of the intervention, post-tests were conducted. The results showed significant increases in the CMJ, RSA and Sprint test on sand and compared with control group (p < 0.05). Conclusions. The results show that a protocol such as the one proposed here improves the physical quality of the ability to repeat sprints (p < 0.001), while remaining in a type of work relatively close to the solicitations generated by futsal. Indeed, plyometry is a method involving the stretch-and-relax cycle of the muscle, most often during bouncing, as the players can use them during matches. In addition, our protocol also improved the maximup running speed on a repetition (p < 0.05) and the maximum jump height with pre-movement (p < 0.05). These two physical qualities may allow players to take advantage more often over their direct opponents.