



## **STUDY REGARDING THE IMPORTANCE OF APPLYING THE DIDACTIC STRATEGIES IN LEARNING AND PERFECTING PROCESS OF WOMEN VAULT YURCHENKO - ROUND OFF FLIC FLAC 1 ½ SALTO BACKWARD STRETCHED OFF**

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### **Summary:**

The artistic gymnastic registers significant process at the international level, the contest exigency for the jump test rising to a very high achievement level so as it needs a special training methodology. I broach this study from the point of view of the importance of instructional strategies applied in the learning and perfecting process of the jump through Yurchenko, this providing the quality of the instruction process and the competitive behavior.

The instructional strategies aim at solving the operational objectives through a coherent methodological system, well defined, by using efficiently the best combination of the 3M ( methods, materials, means ), chosen and adapted to the learning and perfecting process of jumps through Yurchenko, after choosing and obeying certain rules, principles and organization methods in order to provide a high level of quality and efficiency in what concerns the training process for achieving the proposed objectives and which to allow the junior gymnasts, at the senior level, the approaching of certain jumps of a higher difficulty.

**Key words:** strategy, instruction process, jumps, Yurchenko.

### **Introduction:**

The instructional didactic strategy is involved in the axis of relation: objectives-content-methods-materials, means ( the best combination of the 3M )- organization methods, rules, principles, teaching-learning styles, which exclusively belong to the trainer, who aims to accomplish the proposed objectives. This methodology complex must accomplish the quality and efficiency requests so as to lead to the optimum reevaluation of the gymnasts' potential.

The importance of choosing the theme stands in that learning and perfecting the jumps through Yurchenko cannot be used anymore by traditional methodology. For the need certain changes in the instructional strategies and especially in what concerns the use of competition apparatus. The necessary didactic materials for instruction (training), apparatus for body protection and for instruction, fitting the conditions for execution to the contest equipment, the score code, allow the achieving of certain performances, remarkable again for this apparatus.

### **The hypothesis of the study:**

We consider that the success for participating in high level contests will be certain if the strategies of learning and perfecting the jump involve the following independent variables. The apparatus which facilitates the process of learning and perfecting the jumps, the rules of the contest, the score code, the change of methods, means and didactic materials which facilitates the receiving of messages and the acquiring of high difficulty technical skills, security and protection equipment, motivation and the teaching learning style, the constant value.

### **The purpose of the study:**

Identifying the conditions and the exigency, the present conditions of the contest technical behaviors, the score code, the regulations, the technical equipment and their transposing through analogy and modeling in learning and perfecting activities concerning the jumps of a higher difficulty lever in general and of Yurchenko jump in particular.

**Methods** – in accurate learning of technical elements, of jumps, from the artistic gymnastic, two learning methods are generally used: the global method and the analytic method for the best understanding of movements and for an excellent control of the body I also used the method of demonstration and explanation the method of exercising, the feed-back method, the method of evaluation and self- evaluation of self – accomplishments. Algorithmization – method applied in the training process through which is accomplished the learning and

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perfecting process of an element or of a combination of the exercise on the basis of programming in a succession of logic exercises, well determined and functional, reunited in an accurate programmed training – another method applied by professor Serbanoiu, starts from the premises that in a learning situation we meet a type of command and control of an activity which provides the information flux and also a regulation system based on the feed-back principle which consisted in decomposing the elements in methodic steps and their placing at intervals in an algorithm of difficulty for being learned and perfected and which offer courage and motivation under a visual, verbal, revision and mental structure, it has to be accurate given with a short delay after the evolution and adjusted in quality and fervencies, providing the gymnast understanding and progress towards a state of self surpass.

**The training materials** used in the process of learning and perfecting the jump through Yurchenko consisted in helping materials and standard apparatus for the contest, realizing different equipments using proper methods and apparatus for the jump test, using the trampoline, finding certain equipments which facilitated the learning of this jump avoiding this way the unpleasant moments ( fear, accidents ), providing the gymnast the necessary number of repetitions and also offering the intuitive materials ( kinograma, boards, video device in the training hall ), all these helped gymnastic for a better understanding and for achieving an accurate image of the jump. It also allowed the gymnast to become aware of her mistakes, by using the apparatus of scanning each step of the jump, thus the most efficient devices for correcting and perfecting the jumps could be immediately found and applied as well as providing the right technique of execution.

**A working pattern** of two teams: an experimental one ( made up by the gymnasts from Deva) and the witness team ( made up by the gymnasts from Onesti) at the junior level.

**Means ( exercises)** – the rationalization and standardization of the means used in the training process of the gymnast for the jumps test, is remarked through restraints with a methodic feature, undertaken during the training and during the contest, finally being realized according to professor Dragnea's conception through the method of statistic correlation between two variables: the training exercise ( practice), (x) and the contest performance (y), establishing a link between the repairing exercises used during the training and the choose of the most efficient exercises which may have a high level of correlation with the contest.

The used exercises made the main object in our training process, choosing a sequence of methodic all exercises, being established according to the importance of the operational objective which must provide the training's quality and efficiently.

From the various means (exercises) I have selected the most efficient ones and which must fit to our task, providing the training's quality.

Exercise 1. – on the floor from a step is accomplished in circle with a vertical blockade with the trainer's opposing resistance at the shoulders bone or by a mat.

Exercise 2. – on the floor, a springboard is placed, from a step it is accomplished in cycle by placing the hands in front of the springboard and pass in the body over the apparatus in rounding position and landing in standing position with the arms raised in prolongation of the body.

Exercise no. 3 - in a flexible net, lunge step with the round-off execution at full speed, the speed of closing the legs before standing on hands and raising the body in standing position is mainly watched.

Exercise no. 4 – on the floor from 3-5 steps of running round-off with vertical blockade, oblique – back, with landing in back lying on shoulder bone position on the sponge cubes (surface gradually raised)

Exercise no. 5 - - from a running jump, round-off with the legs landing on the springboard and back stretched jump in blocked position over the table for jumps ( at the beginning sponge cubes may be used, raising the surface gradually), and landing in the sponge hole on mats.

Exercise no. 6 – from standing on hands position on a higher surface ( 30 cm) at first the legs, on the floor with landing in standing position, blocked, with the arms raised in prolongation of the body, the same exercise but with the arms on the floor.

Exercise no. 7 – from standing with the back against a supporting point ( wall, sponge), the body slightly bent, the arms stretched forward and parallel, an energy balance of the arms is executed with their raising by up forward to back till placing the palms on the supporting point ( wall, sponge), the body in slight extension, the legs stretched.

Exercise no. 8 – from a sponge cube, straight back jump in trampoline, followed by another straight back jump with landing in standing position, on mat.

Exercise no. 9 – from a sponge cube, straight back jump in the trampoline, followed by another straight back jump in back lying position on overlapped mats.

Exercise no. 10 - from standing on hands position with support on sponge cube, the body stretched is rotating, with landing in the trampoline, straight back jump with landing in standing position, on mat

Exercise no. 11 – from standing on hands position with support on a sponge cube, the body stretched is rotating, with landing in the trampoline, straight back jump in back lying position, on overlapped mats.

Exercise no. 12 - from trampoline, back lying position, hops with projecting the pelvis up forward, the arms in prolongation of the head in support on the trampoline and blockades in standing on hands position

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Exercise no. 13 – from standing on the springboard, the handspring backward is executed by arms supporting against the box top, followed by the energy of the legs to the ground, detachment and high jump with straight body, landing in standing position with the arms stretched in prolongation of the body. The same exercise may be accomplished by supporting the hands on mini trampoline at first for protecting the wrist, which allowed more repetition

Exercise no. 14 – with the back turned to the jumping table, in standing on hands position, with arms support on the sponge cube, the body stretched is rotating, with landing in the trampoline and handspring backward with support on the jumping table ( a mat can be used for protecting the wrists) and landing in the sponge hole, in vertical position or overturned in back lying landing on shoulders bones( the landing surface may be raised gradually on the height or over passing the jumping table)

Exercise no. 15 – from a slight running, it be executed round-off with the feet landing on the springboard, followed by handspring backward supporting the arms on the high surface, it may gradually be raised till the height of the jumping table of 1.25 cm and return in standing position at the respective height on sponge.

Exercise no. 16 - from running, it will be executed round-off with a beat on the springboard, followed by handspring backward with arms support on the jumping table ( with protection for wrists) and landing on feet on overlapped cubes raised at the height on the jumping table.

Exercise no. 17 – from running, round-off with beat on the springboard, followed by handspring backward with the arms support on the jumping table, impulse, lifting – overturning and landing in back lying position on shoulder bones, on the sponge cube

Exercise no. 18 - from running, round-off, on the sponge jumping table with blocking the feet tips up, supported on a sponge cube vertically placed

Exercise no. 19 – from running, round-off, handspring backward on, impulsion and pass in the body in rounded position over a sponge cube, vertically placed at 30-50 cm above the jumping table and landing in standing position on sponge cubes.

Exercise no. 20 – from running round-off, handspring backward on the jumping table, stretched salto backward in the second flight with facial lying landing on an oblique sponge cube ( with the trainer's help)

Exercise no. 21 – from standing on hands position, with the support on the sponge cube, the body stretched is rotating, with landing in the trampoline, handspring backward with support on the jumping table and stretched salto backward in the second flight at first with the help of the trainer and then without help, with landing in the sponge hole

Exercise no. 22 - this exercise comprise all the other exercises, thus accomplishing the global execution of the jump round-off, handspring backward on, and stretched salto backward in the second flight (at first with help both for the first part and for the second part of the jump), then the gymnast executes it by herself but in conditions of maximum security.

Exercise no. 23 – From running, round-off, handspring backward with arms support on the jumping table and stretched salto backward in the second flight with landing on feet on a sponge cube ( with and without trainer's helps)

Exercise no. 24 - stretched salto backward with landing in facial lying position on overlapped mats

Exercise no. 25 - stretched salto backward for prepaying the landing, at first from the trampoline with landing on the mat and then from the jumping table with landing on the mat

Exercise no. 26 – from running, round-off, handspring backward with support on jumping table ( with wrist protection) stretched salto backward with turning in the second part of salto, with facial landing lying on the oblique sponge cube

Exercise no. 27 - stretched salto backward with turning at 360 degrees with landing in facial lying position on mats, by pushing from the springboard

Exercise no. 28 - stretched salto backward with turning at 360 degrees from the jumping table or from a high surface landing on smooth mats ( for place and time orientation)

Exercise no. 29 - from lying position with stretched arms support and with stretched legs sustained by a part near at the knees level, with straight body, parallel with the floor, at an angle of 45 degrees ( position known under the name of wheelbarrow). Short, quick jump will be executed on arms forward without bending the arms more than 45 degrees. In time the angle between arms and body may reach to 180 degrees.

Exercise no. 30 – from standing on hands position with legs in square, with the feet tips supported on the ribs tall at an angle of 90 degrees, short and quick jump will be executed forward on arms, then turning back to the initial position through other back jump

Exercise no. 31 – from facial lying position with stretched arms support and with the feet tips support on the floor, short and quick jump forward on arms in stretched round position of the body

Exercise no. 32 – hand support on raised surface, energy push on arms and lifting the body, the legs are supported on tips, stretched position of the body

Exercise no. 33 – pushing in standing on hands position in the trampoline, on the floor or from the floor, to a higher surface

**The optimum combination of the 3 “M”**

For achieving the proposed objective and for realizing the right execution technique, it is necessary to use in the practice process the optimum connection between m

Methods, materials, means ( the 3 M), which intensifies the final didactic effect.

Each “M”, combined with the other two, amplifies the formative potential, producing ( not comprising) a high final efficiently for the applied instruction strategy” ( Colibaba D., 2007, p. 176)<sup>1</sup>

The success of using the optimum combination of the 3 ”M” implies the trainer’s competitive, creativity, imagination in thinking and selecting the most efficient methods, means and materials, and also in choosing the optimum combination of the 3 “ M” according to the stage of learning and perfecting the jump in artistic gymnastic, providing the quality and the efficiently for the practice process.

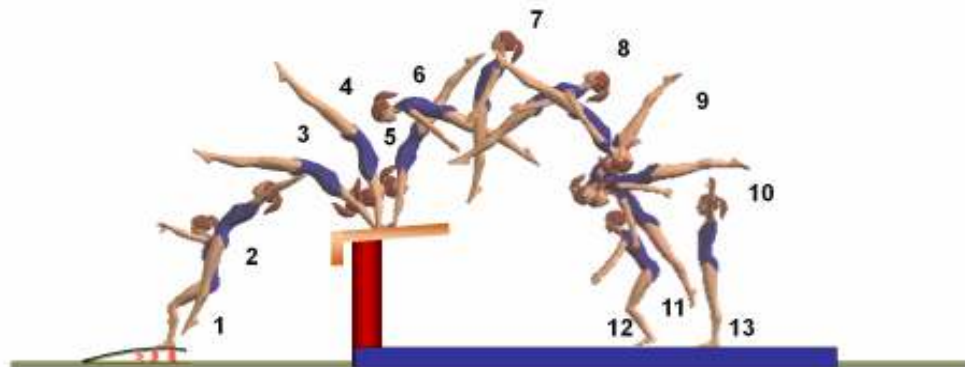
The optimum organization and development of the instructional process brings refined elements which deal with the trainer’s competitiveness, regarding the principles, rules, organization forms and the teaching style approached by the trainer in relation with the gymnast. Obeying the rules leads to avoiding the educational the errors, rigor and accuracy being requested in establishing the operational objectives, the intuition principle, the active ( the adaptability principle, the intuition principle, the active participation and conscious achievement principle, the systematization and continuity principle, the focusing principle on operational objectives and the lastingness principle) and optimum organization of the instruction process and the approach of the best instruction forms may be accomplished.

In artistic gymnastic they are: - frontal, on value groups, in pairs and individual, according to the stage of preparing the elements learning and perfecting and to the necessary for achieving the expected performance.

The instruction forms used in our experiment are those on value groups, in pairs and individually.

The teaching style is personal and unique, which requests, a close relation between gymnast and trainer in order to achieve high performance, The teaching - learning styles are adapted to the individual skill and capability of the gymnast, to the technical level of practice, to the previous knowledge and also to the learning perfecting process, so as the trainer has to find the most efficient methods, means and materials ( the optimum combination of the 3 “ M” ) in order to provide the gymnast continuity in practice and reaching to a competition performance level.

The experimental jump was Yurchenko (round-off, handspring backward with stretched salto backward in the second flight), demonstrated in figure 1, kinograma of the jump through Yurchenko, used in the instruction process as a high competitiveness technical model and as a reference point of execution for the gymnasts in learning and perfecting the jump.



**Fig. 1** kinograma Yurchenko jump ( round-off, handspring backward with stretched salto backward in second flight) (after, Mountier, Readhead L., Russel K., Stan A. ( 2001), Sport Theory, Federation Internationale de Gimnastique, edition I )

**The results and their interpretation**

The main instruments of the evaluation in artistic gymnastic are the marks obtained by the gymnasts (both the difficulty score, and the execution score) which emphasize the contribution of the didactic strategies to the achievement of operational objective and which provided the quality and the efficiency of our instructional program. Thus, in following charts we have a centralization of the obtained results of our gymnasts both for the experimental group in table 1 and for the control group in table 2, representing the marks obtained in the initial testing and in the final testing, and also the progress achieved due to the practice programs.

The resulting obtained after the initial and final test from the experimental group.

<sup>1</sup> Colibaba D. ( 2007), Praxilogie si Proiectare Curriculara in Educatie Fizica si Sport, edit. Universitaria, Craiova, p. 176

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**Table 1.** Centralizer of the results obtained after the initial and final tests of the experimental group.

Nr. Cr t	Name First name	I.T Score A	F.T. Score A	I.T Score B	F.T. Score B	I.T. Final Score	F.T. Final Score	Progres Score A	Progres Score B	Progres Final Score
1.	R.A.	4.00 p.	4.40 p.	8,60 p.	9.55 p.	12.60 p.	13.95 p.	0.40 p.	0.95 p.	1.35 p.
2.	T.D.	4.00 p.	4.40 p.	8.20 p.	9.05 p.	12.20 p.	13.50 p.	0.40. p.	0.90 p.	1.30 p.
3.	H.R.	4.00 p.	4.40 p.	8.70 p.	9.50 p.	12.70 p.	13.90 p.	0.40 p.	0,80 p.	1.20 p.
4	V.C.	4.00 p.	4.40 p.	7.90 p.	9.10 p.	11.90 p.	13.50 p.	0.40 p.	1.20 p.	1.60 p.
5.	D.F.	4.00 p.	4.40 p.	8.15 p.	9.00 p.	12.15 p.	13.40 p.	0.40 p.	0,85 p.	1.25 p.
<b>X</b>		<b>4.0</b>	<b>4,40</b>	<b>8.31</b>	<b>9,24</b>	<b>12.31</b>	<b>13.65</b>	<b>0.40</b>	<b>0.94</b>	<b>1.34</b>
<b>S</b>		0	0	0,33	0,26	0.33	0.25	0	0.15	0.06
<b>Cv</b>		0	0	4,00	2,84	2.70	1.86	0	16.56	5.06
<b>t calculated</b>				2,803		2,747		2.777		
<b>p = 2.575, n = 5</b>				<b>&lt; 0,05</b>		<b>&lt; 0,05</b>		<b>&lt; 0,05</b>		

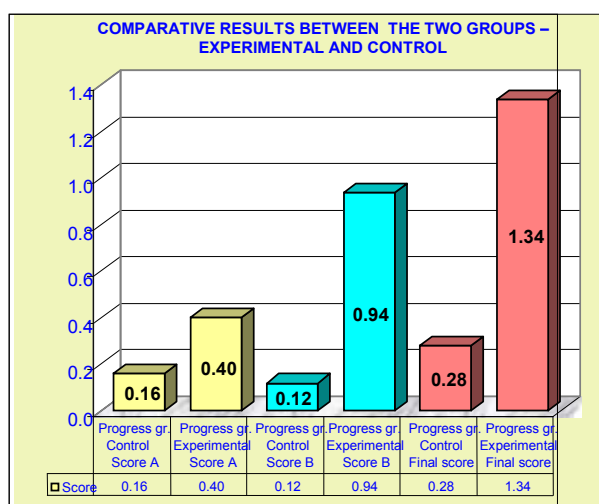
The resulting obtained after the initial and final test from the control group

**Table 2.** Centralizer of the results obtained after the initial and final tests of the control group.

Nr. Cr t	Name First name	I.T Score A	F.T. Score A	I.T Score B	F.T. Score B	I.T. Final Score	F.T. Final Score	Progres Score A	Progres Score B	Progres Final Score
1.	I.L.	4.00 p.	4.40 p.	8.50 p.	8.65 p.	12.50 p.	13.05 p.	0.40 p.	0.15 p.	0.55 p.
2.	D.M	4.00 p.	4.00 p.	7.90 p.	7.90 p.	11.90 p.	11.90 p.	0.00. p.	0.00 p.	0.00 p.
3.	B.B	4.00 p.	4.00 p.	8.30 p.	8.55 p.	12.30 p.	12.55 p.	0.00 p.	0.25 p.	0.25 p.
4	B.A.	4.00 p.	4.00 p.	8.20 p.	8.50 p.	12.20 p.	12.50 p.	0.00 p.	0.30 p.	0.30 p.
5.	T.P.	4.00 p.	4.40 p.	8.65 p.	8.55 p.	12.65 p.	12.95 p.	0.40 p.	- 0.10 p.	0.30 p.
<b>X</b>		<b>4.0</b>	<b>4.16</b>	<b>8.31</b>	<b>8.43</b>	<b>12.31</b>	<b>12.59</b>	<b>4.16</b>	<b>0.16</b>	<b>0.28</b>
<b>S</b>		0	0.21	0.28	0.30	0.28	0.45	0.21	0.11	0.19
<b>Cv</b>		0	5.26	3.46	5.57	2.34	3.61	5.26	74.6	69.84
<b>t calculated</b>				1.483		1.459		2.169		
<b>p = 2.575, n = 5</b>				<b>&gt; 0,05</b>		<b>&gt; 0,05</b>		<b>&gt; 0,05</b>		

**Discussion and comparative interpretation of the control and experimental groups results.**

After the interpretation of statistics indicators (of the score obtained by the gymnasts represented in tables 1 and 2, significant modifying of the initial and final tests for the experimental group are being emphasized. Thus, in chart 1 from below, we may state that the results obtained by the experimental group were also detached from the instructional strategies which had been used in the process of learning and perfecting the jump through Yurchenko.



**Graphic 1-** the comparative results of the control and experimental groups

### The experimental group

**Score A** – the average increases at the experimental group from 4,00 to 4,40 from initial test to the final one, with a difference of 0,40, **significant in crease**: the minimum level of significance for  $p = 0,05$  is 2,575 to  $n = 5$  cases smaller than “t” calculated 2,803

**Score B** – the average in creases from 8,31 p to 9,24 p with a difference of 0,93 p. the progress is **significant,  $t = 2,747, p < 0,05$** . The variability coefficient shows a good homogeneity of the achievement and decreases from 4,00 to 2,84

**The final score** – the average of the final mark has a significant increase,  $t = 2,777, p < 0,05$ , from 12,31 p to 13,65 p with a difference of 1,34 p. The achievements’ homogeneity is a good one **cv = 2,70** at the initial test and decreases to 1.86 at the final test.

**The progress obtained at score A** is of **0,40 p** and for **score B** is of **0,94 p**, but with an average homogeneity **cv = 16,56**

**The progress on the final score** – has an average of 1,34 p with a very good homogeneity of the achievements

### The control group

**Score A** – The average increases for the control group from 4,00 to 4,16 p from the initial test to the final one, with a difference of 0,16 p, **insignificant increase:  $t = 1,483, p > 0,05$** , very good variability coefficient **cv = 5,26** indicates a very good homogeneity of the results.

**Score B** – the average increases from 8,31 to 8,43 with a difference of 0,12 p. The progress is **insignificant,  $t = 1,459, p > 0,05$** . The variability coefficient indicates a very good homogeneity of the achievements even it increases from **cv = 3,46**, at the initial test, **to cv = 5,57** at the final test.

**The final score** - the average of the final score for the control group has an insignificant increase,  $t = 2,169, p > 0,05$ , **from 12,31 p. to 12,59 p.** with a difference of 0,28p. The homogeneity of achievements is very good **cv = 2,34** at the initial test increase to **3,31** at the final test.

**The progress obtained at the score A** is of **0,16 p.** with a very good homogeneity **cv = 5,26** and for **score B** it is of **0,16 p.** but with an extremely low homogeneity, lack of homogeneity, statistically casual, **cv = 76,6.**

**The progress on the final score** has an average of **0,28 p.**, with lack of homogeneity **cv = 69,84.**

### Comparative results between the two groups – experimental and control

Score A	Control group	Experimental group	The difference	t - calculated	p – level of significance
Initial test	4	4	0		
Final test	4,16	4,4	0,24	3,794	$p < 0,05$

It is noticed that experimental group registers a significant progress providing the significant modifying of score A, **t critique = 2,571, < t calculated = 3,794,  $p < 0,05$** , compared to the control group. The null hypothesis is rejected.

Score B	Control group	Experimental group	The difference	t - calculated	p – level of significance
Initial test	8,31	8,31	0		
Final test	8,43	9,24	0,81	7,014	$p < 0,001$

It is noticed that the experimental group registers a significant progress providing the significant of score B, **t critique = 6,859 < t = calculated = 7,014,  $p < 0,001$** , compared to the control group. The null hypothesis is rejected.

Final score	Witness group	Experimnetal group	The difference	t - calculated	p – level of significance
Initial test	12,31	12,31	0		
Final test	12,59	13,65	1,06	7,043	$p < 0,001$

It is noticed that the experimental group registers a significant progress a providing the significant modifying of the final score, **t critique = 6,859 < t calculated = 7.043,  $p < 0,001$** , compared to the control group The null hypothesis is rejected

Thus, for all the test, the experimental group registered significant increase of achievement, in comparison to the control group, witch proves the superiority of the used means in comparison to the traditional means the control group worked with.

### Conclusions

After this experiment we have reached to the conclusion that according to the hypothesis concerning the introduction of instructional strategies in the process of instruction of the junior gymnasts for learning and perfecting the jump through Yurchenko provides the an accurate quality of instruction. Synthesizing all the results

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offend by the above analyzes, we can appreciate that the instructional strategy is an intensive method with gives results and generates the registration of notable differences between the subjects which followed these types of strategies in comparison with the ones which followed the classic training.

Both the choice of the most efficient methods, materials, means and also the use of the 3 “M” optimum combination, the apparatus which have facilitated the process of learning and perfecting the jump, the analogy and the sequence of functional well determined exercises reunited in an ordinal system, the feed-back operation which provides the practice quality and the efficiency of a regulation system and also the partition of exercises in methodic steps with their spreading in a difficulty algorithm towards learning and perfecting, the motivation and the constant value in practice, they have all provided significant increase through the improvement of each stage regarding the jump through Yurchenko, which demonstrated in our experiment that the methodological acquirement provided the instruction’s quality. The instructional strategy is a coherent methodological system of methods, means, materials, which, together with the efficient combination of the 3 “M”, leads to a real improvement in the instructional process.

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