

CZU 796.4:796.015

**THE MODELING METHOD IN THE TRAINING PROCESS OF THE ELITE FEMALE GYMNASTS**

*Buftea Victor<sup>1</sup>*

<sup>1</sup>*State University of Physical Education and Sport, Chisinau, Republic of Moldova*

**Abstract.** *In this article are described some methodological approaches concerning the efficiency of the application of the modeling method in the process of training the elite female gymnasts. (Female artistic gymnastics). The essence of using this method in the training process is highly appreciated, as it is particularly complex, and it involves some special examinations organized in special conditions.*

*In the study there is also described the designing process of the model of the elite female gymnast in different stages of training, divided by age and sports categories. There are also defined some optimal physical parameters that are considered the most relevant to efficiently exteriorize all the moves during the gymnast's performance at each of the competition's events.*

**Keywords:** *feminine artistic gymnastics, sports performance, methodological approach, modeling method, role model parameters, guidance points of the female gymnasts' centralized training.*

The concept of modeling represents a process in which the examined phenomenon is very complex or has a very high level of difficulty and it is not possible to obtain it only by a direct investigation. It is acquired by studying with different more simple investigations and analogue investigations, applying some examinations and experiments that are organized in special conditions and earlier determined [2, 5, 8, 10, 14].

The model (of an action, a sportsman, a champion, a process, a structure, a result, a quality etc.) is elaborated according to a logical pattern that was created based on the most relevant, important and valuable characteristics contained by subject. It must contain the most optimal constituent fragments, which connection reflects the role model of the examined subject as the top of the excellent example, to which the entire activity must tend.

Currently there are several versions for elaborating the role model of a gymnast.

One of these tendencies is that, lately, a more required quality for a female gymnast is

the height, because it offers an extraordinary and spectacular amplitude during the rotation or flight phases. At the same time, an important aspect that characterizes the tall gymnasts is their concerns in executing the elements with a high level of difficulty (like elements from the group E, F, H and their combinations). Likewise, there are also required the short female gymnasts, that have, evidently, a low weight, because of their abilities of easily executing all types of movements, exempting the necessary trajectory and amplitude [1, 6, 11, 15].

In the opinion of the specialists in artistic gymnastics, the execution technique of the elements and combinations, construction of the apparatus with certain parameters, as well as the height of the apparatus, the contact surface, the requirements of the competition regulations and other factors that tend to privilege and avail an excellent performance of an elite gymnast, are considered to be convertible into the next parameters that an elite gymnast must reach.

**Table 1. The model of the optimal physical parameters that are characteristic for an elite female gymnast**


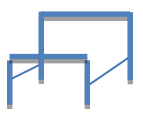


Age (years)	13	14	15	16
Sports title	OC-MS	OC-MS	MS	MS-MSIC
Height: h=cm	145 ± 2	148 ± 2	155 ± 2	161 ± 2
	143-147	146-150	153-157	159-163
Weight: m=kg	36 ± 1,5	38 ± 2	42,5 ± 1	45 ± 1,5
	34,5-37,5	36-40	41,5-43,5	43,5- 46,5

Obviously, all the indicators of a female gymnast are in a permanent change. From a biological point of view, the differences can essentially affect the development of the gymnasts, especially in a such period of abundant growth as puberty (13-16 years). According to these aspects, it is also possible to elaborate a defined program as a role model that will help to achieve the most optimal parameters and evidently the sports goals.

As it has been already said, according to the latest requirements of the competition regulations that mentions about the right of the elite female gymnast to participate only in one event, it is considered necessary to preventively establish some of the female

gymnasts` parameters characterized by the specific of the certain apparatus. Thus, that means that participating in different events generates the tendency of the gymnasts to aim and achieve specific parameters that are characterized by the chosen event. For example, performing the exercises on the floor or in the vaulting events it is necessary to accentuate the inferior body parameters. For performing at the uneven bars or balance beam events, there will be required a lower weight as well as a more developed upper body. For these events the gymnast must qualify for certain different parameters being nonessential compared to total parameters, determining the body constitution.

**Table 2. The model of the optimal physical parameters that are characteristic for an elite gymnast (16 years) performing in different events**

Parameters/ Artistic events	Support	Uneven bars	Balance beam	Floor exercises
Symbol →				
Waist (h=cm)	155-157	156-158	156-157	160-162
Weight (m=kg)	42-44	43-44	42-43	45-47

The entire list of the parameters that are considered optimal for a body construction in order to performing the movements with a high level of spectacularism could be filled-out with the following as well: thoracic perimeter, abdomen perimeter, cervical segment (neck) length, arm length, lower leg length, palm phalanges length (up to their thickness as it

counts when gripping the support surface), as well as other specific features.

Elaborating a role model is a permanent desideratum, as every coach wants to implement it to build a perfect team, as well as every gymnast wishes to transform herself to achieve the ideal parameters. Though the role model remains to guide the activity of the elite

gymnasts at an imaginary level, a theoretical one, because when in practice, being influenced by so many different features such as the biological ones, the physical parameters, the technological indicators can change in a very short period of time and it could lead to the appearance of some divergences from the ideal parameters. Therewith, this phenomenon is directly influenced by the optimizing the physical condition of the gymnast by presenting the gratitude of the constitutional parameters, the optimizing of some functions of the organism, as well as the motrical regime, the eating habits, recovery specifics and so on.

The feminine artistic gymnastics, as a very complex sphere, demands many investigations

that need many guidance points in the gymnasts' centralized training process.

Due to the modeling method, it is possible to specify the arrangements and the scenarios of the activity in order to elaborate the perfect operational acting systems.

In conclusion, this model involves rigorously established activity objectives, a complex of specific types of movements at the apparatus, some concrete proportions of effort with a certain performing intensity, some certain periods of time and other particularities, in order to respect the instructional process and all the afferent factors.

#### **References:**

1. Buftea, V. (2004). *Metoda algoritmică la însușirea exercițiilor de gimnastică*. Recomandări metodice pentru studenții instituțiilor de educație fizică și sport. Chișinău: Ed. INEFS. 32 p.
2. Colibaba-Evuleț, D., Bota, I. (1996). *Modelul de joc și modelare*. In: Discobolul, nr.4-5, p. 8-10.
3. Dorgan, V. (2008). *Semnificația caracteristicilor morfologice în sportul de performanță*: Monografie. Chișinău. 261 p.
4. Dragnea, A. (1996). *Antrenamentul sportiv*. București: Ed. Didactică și Pedagogică. 362 p.
5. Epuran, M. (2005). *Metodologia cercetării activităților corporale: Exerciții fizice, sport, fitness*. Edit. 2. București: FEST. 420 p.
6. Godorozea, M., Moroșan, R. (2000). *Controlul medical în educația fizică și sport*. Chișinău. 135p.
7. Grimalschi, T., Liușnea, D. (2009). *Analiza documentelor de planificare a procesului de antrenament la gimnastele de categoria IV- nivelul I*. In: Știința culturii fizice, nr. 3/3, p. 8-12.
8. Grimalschi, T., Nanu, L. (2007). *Caracteristicile efortului în gimnastica artistică feminină*. În: Cultura fizică: probleme științifice ale învățământului și sportului: conf. șt. int. a doctoranzilor. Ed. a 5-a. Chișinău, 2007, p. 216-220.
9. Manolachi, V. (2011). *Modernizarea structurii și conținutului procesului de antrenament feminin*. In: Știința culturii fizice, nr. 8/2, p. 33-37.
10. Potop, V. (2007). *Reglarea conduitei motrice în gimnastica artistică feminină prin studiul biomecanic al tehnicii*. București: Bren. 204 p.
11. Potop, V. (2013). *Multi-annual training in performance artistic gymnastics*. In: International Scientific Conference, Ecological University of Bucharest: Bren, p. 191-197.
12. Аркаев, Л.Я. (1990). *Тенденции динамики тренировочной нагрузки гимнасток высшей квалификации (методические рекомендации)*. Москва. 17 с.
13. Гавердовский, Ю.К. (2012). *Совершенствование техники движений и специальной технической подготовки как основа высших достижений в современной спортивной гимнастике*. В: Наука в олимпийском спорте, № 1, с. 7-26.
14. Гамалий, В.В. (2013). *Теоретико-методические основы моделирования техники двигательных действий в спорте*: Монография. Киев: Полиграфсервис. 300 с.
15. Коренберг, В. Б. (2004). *Спортивная метрология*. Москва: Советскийспорт. 340 с.