

STUDY ON LEARNING JUMPS IN SCHOOL GYMNASTICS AT CLASS VI

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Abstract

In this paper it is shown how the learning of jumps can be improved in school gymnastics specific to sixth grade, using teaching strategies. In the experiment, we used algorithmization and proposed a model of teaching strategy for learning jumps specific to sixth grade. The research methods were pedagogical experiment, method of experts, statistical method and tests method. Results have confirmed that the use of teaching strategy in learning has a positive outcome, superior to traditional learning used in physical education classes. We appreciate from this perspective that our proposed teaching strategy was effective and contributed to a better assimilation of skill of jumping on device specific of basic gymnastics. We consider that such way of learning and reinforce this skill through algorithmization is useful in physical education lessons and contribute to creating favourable conditions to achieve positive results in discipline "physical education".

Keywords: physical education, school gymnastics, secondary school, teaching strategy.

Introduction

The future of physical education (PE) depends on the quality of emerging committed professionals and their ability to teach across the different activity areas contained within the National Curriculum for physical education (Sloan, 2007:57).

Multilateral training in physical education is based on means, methods and specific conditions, which determine both physical development and spiritual of the individual. (Firea, 2003: 22)

Physical education is one of compulsory disciplines school program that contributes to student development, complementing theoretical knowledge with practical skills useful in everyday activities. Also, through specific activity, it has a role in shaping attitudes and behaviours that allow students to integrate into society.

In terms of training content, this is accomplished by the means, methods and conditions of physical education (Ciorbă, 2003:176-181).

Generally in schools physical education teachers avoid gymnastics due to safety problems and difficulties in teaching (Lyu, 2013:143)

Pedagogical sciences enable approach of learning from multiple perspectives, to lead the subject who learns to succeed faster or easier.

Teaching strategies is the theoretically-actional global system, based on teaching principles that provide guidance, conduct and purpose of education in the long term, using characteristics and resource valences, contents, methods, means and forms of organization of the educational process. (Bontaş, 2007: 164).

Teaching strategies are all methods, means, learning experiences through which the teacher designs, performs and evaluates the educational process in the context of the objectives, content and teaching situations. (Văideanu, 1988: 98).

Taking teaching strategies in the field of pedagogy has beneficial effects in physical education.

Strategy is generally how it is designed the use of learning methods, means of work and materials. In physical education, to these ones are being added forms of organization and dosage of means work. Their use in education wants to increase its effectiveness.

Improving the educational process can be defined as an organized leadership based on consideration of regularities and principles of education, current forms and methods, and the peculiarities of the system, and internal and external conditions in order to ensure a functional efficiency of the process of education in the light of the criteria set out. Efficiency is based on the scientific organization of student work oriented not only to a simple performance, but also to obtain results related to specific conditions. (Marcu 2003: 154)

Algorithmization in physical education can be the basic element of didactic programming and projecting, which ultimately contributes to the frame objectives and reference objectives. This consists in compiling and application of actuator systems (means, exercises) in order to achieve the proposed objectives in a logical and rational sequence, complying with requirements of the principle of accessibility (Iconomescu T.M., 2013:36-37).

The aim of the research was to notice if by applying teaching strategies it will improve acquiring the skill of jumping, specific to gymnastics in gymnasium. Our proposed strategy was based on algorithmization method.

Materials and Methods

The hypothesis of this paper is the application of teaching strategies in physical education lesson, embodied in operational design of units learning, with specific content to acrobatic school gymnastics, that will improve acquiring its content, but also achieving better results in discipline "physical education".

The research was conducted on a sample of 50 students of class VI, divided in two groups, the control group consists of 15 boys and 9 girls, and the experiment group consists of 11 boys and 15 girls. The experiment was conducted during February 10 - March 15, 2014 in the Secondary School no. 22 of Galati.

Research methods used in the research were:

- pedagogical experiment, which consisted in application on the experiment group of the strategy proposed for learning gymnastics jump;
- method of experts, which was applied through three specialized staff with 1 teaching degree, who awarded notes for technical execution of the jump to the device, in the initial stage and final;
- statistical method, in which we used Student Pairs Test and Independent Student Test, conducted by SPSS 2.0;
- tests method, which was represented by initial and final testing for element studied in the experiment.

Procedure

In the research, we analyzed the learning of jump in gymnastics, namely "Jumping in squat support on box gym, located transversely, followed by straight jump with extension". This is provided in specialized curriculum for this age level.

Learning jump to a gymnastic apparatus was conducted during 10 lessons in the first semester of the curriculum of learning units, using the methods, means and forms of organization of the didactic strategy proposed by us. The strategy was based on the algorithmization method for each phase of the jump.

The algorithm assumes a certain sequence of operations which solves typical standardized situations (Badiu, 2003:121), (Cucoş, 2002:216). In physical education there is clearer aspects concerning algorithms specific to the content of training (Farcaş, 2003:76), (Şerbănoiu, 2004:68). Such a type of algorithm consists in practicing the most efficient movements, arranged in a specific sequence, well-defined, logical and measurable as an effort.

Following the above, on the application of the algorithmization method in the proposed learning strategy, we have designed algorithms for all jumping phases.

Table 1 presents the teaching strategy to learning take of velocity on jump specific to gymnastics in class VI. The proposed strategy exemplifies how the algorithmization can be used in practice.

Table 1 Didactic model of design the algorithmization for take of velocity learning

Algorithm for take of velocity learning		Dosage
Exercise 1 - Running in play ankle		2 series x 10 meters
Exercise 2 - Running with jumped step		2 series x 10 meters
Exercise 3 - Running with swing back calf		2 series x 10 meters
Exercise 4 - 2-3 steps running, jumping step, simultaneously with lifting arms down forwards up.		2 series x 10 meters
Strategy teaching - learning and strengthening at take of velocity		
Methods	Methodical instructions and working groups	Materials
Algorithmization	Individual practice	Gym mattresses
Demonstration	Exercise 1 - pursuing full extent of the leg from the knee joint	
Practice	Exercise 2 - alternative pushing legs through strong extension of the thighs and ankles	
Observation		
Correction		
Appreciation		

From Table 1 it can be seen that the teaching strategy includes all the elements that are found in the theory of pedagogical sciences namely means, methods and materials. As previously mentioned for physical education, they are supplemented by forms of work and dosing of the means proposed for practice. Thus in the above table it can be seen that for the first phase of the jump, in its learning algorithm, were proposed four working means, for which has been explicitly stated operating time.

To complete the strategy described in the table, we have presented the methods with which are implemented means of work, forms and materials for practice. Changing any element of the teaching strategy proposed for training at all levels requires the creation of new teaching strategy that will have other features for operation and implementation.

Therefore, teaching strategies are dynamic and can be continuously improved.

Creativity of teachers can determine this innovative character of teaching strategies depending on the chosen means for creating the learning algorithm, as well as relative to the size the working formations, chosen forms of organization, material basis, particularly available in each school unit.

Results and Discussion

Jumping specific to gymnastics is provided in the school curriculum for all secondary school classes. As result of this, we wanted to observe whether applying a teaching strategy can lead to higher indices of acquiring it, and thus to obtain better grades, so a higher success.

The results recorded were centralized and have been subjected to statistical analysis process so that the possibility of assessment errors to be kept small.

Interpretation of the results of statistically was done in two directions, namely on the one hand between the groups (control and experiment) and on the other hand in the same group between initial and final test.

As it can be seen from Table 2 which centralizes the results obtained by groups of boys, the average of grades on initial test is close to 5.66 for the control group and 5.60 for the experimental group. This indicates that, statistically, significance threshold is not significant ($p > .05$).

In the case of final test, it is noted differences between averages of grades recorded in the experimental group versus the control group in favor of the experimental group.

Thus, in final test, the experimental group recorded a average value of 8.93, while the control group was able to achieve an average of 7.28. Comparing the data obtained, and interpreting them statistically, we found that the significance threshold is significant ($p < .05$).

Table 2 Statistical analysis of the initial and final test between the two groups of boys

Tests	Groups Boys	Number of subjects	Average	Standard deviation	Freedom degrees	t
Initial test	Control group	15	5.66	,43	24	,366*
	Experiment group	11	5.60	,38		
Final test	Control group	15	7.28	,56	24	7,931**
	Experiment group	11	8.93	,46		

* $p > .05$; ** $p < .05$, Average represent average of grades obtained

We appreciate so that the results obtained by the experimental group led to significant progress of students in learning jump proposed for learning, and this is done through the teaching strategy applied.

The same analysis applied to the group of boys was also conducted for the group of girls, and the results recorded are presented in Table 4.

Table 3 Statistical analysis of the initial and final test between the two groups of girls

Tests	Groups Girls	Number of subjects	Average	Standard deviation	Freedom degrees	t
Initial test	Control group	9	5.51	,44	22	,175*
	Experiment group	15	5.48	,37		
Final test	Control group	9	7.59	,57	22	6,506**
	Experiment group	15	8.97	,46		

* $p > .05$; ** $p < .05$ Average represent average of grades obtained

From centralized data it can be seen that in the initial test both groups achieved similar values, which shows that the level of assimilation of motor skill specific to gymnastics (jump) is somewhat balanced. The control group received an average grading of 5.51 while the experimental group received an average grading of 5.48.

This small difference represented a good opportunity to be able to track whether by acting different on the two groups we obtain significant differences in the final evaluation.

At final test, the results reported by the two groups subjected to the experiment were different. As it can be seen from Table 3, the control group showed an average of 7.59, whereas the experimental group recorded an average of 8.97.

As with group of boys, significance of progress made by experimental group of girls are given by significance threshold analysis, with p-value <.05, and shows that the differences between the two groups are significant, for the experimental group.

It can be said, from this perspective, that the strategy applied in order to acquire the skill of jump in gymnastics had the desired effect, being validated by practice.

In terms of statistical analysis of the results of the initial and final assessments recorded in the same group, pooled data are summarized in Table 4 and Table 5.

Table 4 Statistical analysis of the initial and final test of the control group

Control group		Number of subjects	Average	Standard deviation	Freedom degrees	t
Boys	Initial test	15	5.66	,43	14	8,976*
	Final test	15	7.28	,56		
Girls	Initial test	9	5.51	,44	8	7,500*
	Final test	9	7.59	,57		

*p>.05; **p<.05 Average represent average of grades obtained

Table 4 presents the evolution of the control group, which was divided into group of girls and group of boys.

From the above table it can be seen synthetic, that in final test, the control group showed favorable results, in progress from the initial testing.

The average value in final testing of 7.28 for boys and 7.59 for girls shows that this group registered a positive trend in the teaching process of acquiring specific skill of jumping on device in basic school gymnastics.

This is not a surprise, but it is a natural thing, an extra progress that the instructive-educational process brings in learning.

From this point of view we can say that the group of boys progressed by 28.62% compared to initial testing, and the group of girls achieved a higher level of assimilation of specific skill of jumping in gymnastics of 37.75 % from the initial testing.

In other words we can appreciate that the teaching process conducted in traditional conditions has positive effects on those who attend and provide the premises for acquiring its content.

In our experiment, being interested by the progress in application of teaching strategies as proposed by us, we continued the statistical analysis in the experimental group to see whether and this case were highlighted significant progress. Centralization of data and their interpretation are statistically shown in Table 5.

Table 5 Statistical analysis of the initial and final test of the experiment

Experiment group		Number of subjects	Average	Standard deviation	Freedom degrees	t
Boys	Initial test	11	5.60	,38	10	28,031
	Final test	11	8.93	,46		
Girls	Initial test	15	5.48	,37	14	31,134*
	Final test	15	8.97	,46		

*p>.05; **p<.05 Average represent average of grades obtained

As can be seen from the table, boys group has recorded in final evaluation an average of 8.93, which represents an increase of 59.46% over the initial testing. The fact that the progress is significant, it is showed statistical by indicator p <.05.

In case of girls group, average value for final testing was 8.97 (Table 5). From the average recorded at initial testing, the progress made was 63.68%. We find also that the group of girls in experimental group, the progress is significant, because statistical indicator p <.05.

To create a better presentation of pooled data we used the representation in terms of graphics. The performance of boys groups are shown in Figure 1 and the results achieved by girls groups on jumping are shown in Figure 2.

As in the case of presentation and interpretation in statistical terms from Figure 1, to boys groups it can be observed that initially the students scoring was very close.

Different levels of average values of grading are shown in the final test. In presentation graphics can be clearly seen that the performance of scoring achieved by experimental group is significantly higher than the control group.

Moreover, through the final averages obtained and progress made by 28.62% for the control group and 59.46% for the experimental group we can appreciate that the training strategy used in the experiment group was more effective in recording a higher success.

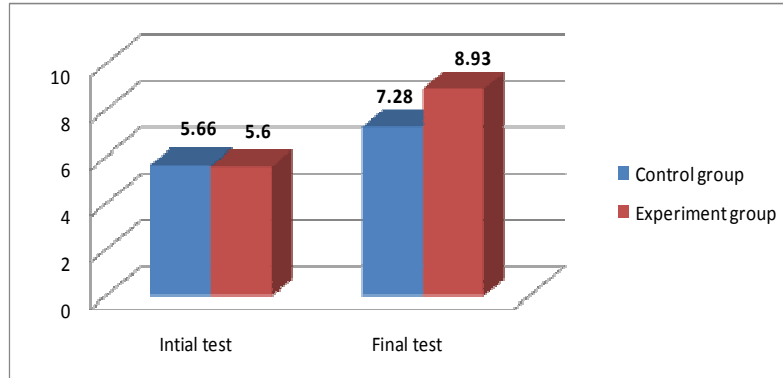


Figure 1 Results of groups of boys on jumping

We appreciate that progress made by experiment group was 107.75% compared with the control group. In girls group the situation is similar. From Figure 2 it can be observed that the initial assessment has provided closely data concerning average scoring.

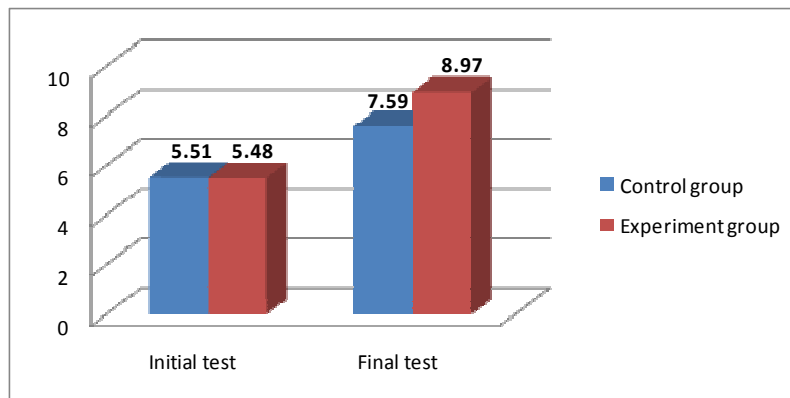


Figure 2 Results of groups of girls on jumping

From this graphic we can also see that both groups showed improvement in final testing in relation to initial testing.

However, it is noted from Figure 2 that the performance of the experiment group is greater than control group.

The progress of experimental group compared to initial testing of 63.68%, is far superior to progress reported by the control group of 37.75%. In other words, percentage expressed, the progress of the experimental group is 68.69% higher than the control group.

Conclusion

Following the tabulation of results and their interpretation in terms of statistical as well as graphical representation, we estimate that the average values of scoring obtained by the control group were higher than experimental group.

We appreciate from this perspective that our proposed teaching strategy was effective and contributed to a better assimilation of skill of jumping on device specific of basic gymnastics. We consider that such way of learning and reinforce this skill through algorithmization is useful in physical education lessons and contribute to creating favorable conditions to achieve positive results in discipline "physical education".

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THE EFFECT OF TRAINING BALANCE USING INSTABLE SURFACES IN THE OPTIMIZED TRAINING OF WOMEN U16 HANDBALL PLAYERS

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Abstract

To carry out this study I started from the idea that implementing methods using unstable surfaces contribute to the development of balance in women U16 handball players. The role of unstable surfaces is to intensify muscular activity, particularly the neuromuscular component associated with static balance at the expense of the mechanical load. The correct and timely use of unstable surface procedures during training sessions, when compared to classical handball training methods, clearly lead to a better development of static and dynamic balance. The research was carried out during one sport season on two groups: experimental and control, each comprising ten players. The training of both groups was executed based on the same annual training plan, the difference being that on the experimental group unstable surface procedures were used, while on the control group procedures specific to handball training. The following tests were applied: stability test with multiple single leg jumps (right and left), two-leg balance with legs close together, eyes open and closed. After applying the tests there was visible improvement in results for the experimental group, while there was no obvious change in the results of the control group. The procedures used on the experimental group proved to be more effective than the procedures specific to handball training. The results of the experimental group in both tests, following the use of unstable surface procedures, shows an improvement in balance compared to control group subjects.

Keywords: Balance, unstable surface, optimization, handball;

Introduction

Lately there has been an increased demand for optimal development of competences and characteristics of young handball players' training process. According to researchers such as Milanovic, D., (2007) , Ilic, D., et.al., (2009), these have contributed mainly by an increase in applying scientific methods, by more efficient procedures of methodical training, as well as by shaping players according to their individual abilities and characteristics.

On a high level, handball players have a vast technical repertoire backed by their skills, like coordination, balance, or reaction and execution speed (Starosta, W., 2006).

One of the current trends is to introduce specific elements of proprioceptive development into frame of training programmes, meant to improve the specific indicators of static and dynamic balance, as well as neuromuscular coordination, starting from an early age (Acsinte, A., et.al., 2012).

The programmes meant to develop neuromuscular control often include balance exercises whose purpose is optimizing training, prevention of and recovery from injuries (Zech, A., et.al., 2010).

Posture control or balance can be defined as the ability to maintain a foothold with minimal movement, as well as the ability of executing a task while preserving a stable position. This is maintained by way of a dynamic integration of forces and both internal and external factors involving the environment (Lee, A., et.al., 2006;