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## **THE RESULTS OF THE ORGANIZATION OF PHYSICAL EDUCATION OF STUDENTS IN THE INTEGRATED EDUCATIONAL PHYSICAL CULTURE AND SPORTS ENVIRONMENT<sup>1</sup>**

*The article presents the results of research on the development and implementation of the concept of increasing the effectiveness of physical education of students into the educational process of a higher education institution, based on the organization of an integrated educational physical culture and sports environment.*

*The main feature of the author's concept is the organization of an integrated educational physical culture and sports environment, which is created in accordance with the objectives of the educational process and physical culture and sports needs of students.*

*The details of the organization of the educational process within the P.E. discipline in the conditions of the implementation of physical education of students in the integrated educational physical culture and sports environment associated with a gradual reduction of auditorium classes with a teacher and an increase in the proportion of controlled independent work are revealed.*

*Controlled independent work is presented as the main link of the concept of increasing the effectiveness of physical education of students, based on the organization of an integrated educational physical culture and sports environment.*

*The features of the introduction of controlled independent work of students in the context of the implementation of physical education in an integrated educational physical culture and sports environment are revealed.*

*The article presents an analysis of the effectiveness of physical education of students in the conditions of an integrated educational physical culture and sports environment, which is expressed in the change in the indicators of physical readiness of the experimental groups EG/w and EG/m and control groups CG/w and CG/m. The results of the study of the dynamics of the level of physical readiness of the experimental groups EG/w and EG/m and the control groups CG/w and CG/m are presented.*

**Keywords:** *physical education, integration, physical culture and sports environment, physical culture and sports activity, physical culture, physical readiness.*

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## РЕЗУЛЬТАТЫ ОРГАНИЗАЦИИ ФИЗИЧЕСКОГО ВОСПИТАНИЯ СТУДЕНТОВ В ИНТЕГРИРОВАННОЙ ВОСПИТЫВАЮЩЕЙ ФИЗКУЛЬТУРНО-СПОРТИВНОЙ СРЕДЕ

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*В статье представлены результаты исследования по разработке и внедрению в учебный процесс учреждения высшего образования концепции повышения эффективности физического воспитания студентов на основе организации интегрированной воспитывающей физкультурно-спортивной среды.*

*Особенностью авторской концепции является организация интегрированной воспитывающей физкультурно-спортивной среды, которая построена в соответствии с задачами учебно-воспитательного процесса и физкультурно-спортивными потребностями студентов.*

*Раскрыты особенности организации учебного процесса по дисциплине физическая культура в условиях реализации физического воспитания студентов в интегрированной воспитывающей физкультурно-спортивной среде, связанные с постепенным сокращением аудиторных занятий с преподавателем и увеличением доли управляемой самостоятельной работы, а также особенности реализации управляемой самостоятельной работы студентов.*

*Управляемая самостоятельная работа представлена как основное звено разработанной автором концепции повышения эффективности физического воспитания студентов.*

*Представлен анализ эффективности физического воспитания студентов в условиях интегрированной воспитывающей физкультурно-спортивной среды, который выражается в изменении показателей физической подготовленности экспериментальных групп ЭГ/д и ЭГ/ю и контрольных групп КГ/ю и КГ/д. Представлены результаты исследования динамики уровня физической подготовленности экспериментальных групп ЭГ/д и ЭГ/ю и контрольных групп КГ/ю и КГ/д.*

**Ключевые слова:** физическое воспитание, интеграция, физкультурно-спортивная среда, физкультурно-спортивная деятельность, физическая культура, физическая подготовленность.

Physical education of students as a part of the education system develops in the unity of socio-cultural transformations and moral values of the society. Changes characteristic of the world educational space determine the prospects for improving education in the field of physical culture. The urgency of the problem of increasing the effectiveness of physical education of students is associated with innovative processes in the education system, setting the direction of modernization of existing approaches to teaching the P.E. discipline in the higher education system [1, p.55].

The urgency of the problem of innovative transformation of the existing system of physical education on the basis of a fundamentally new approach to the organization of physical culture and sports among students is emphasized by many scientists (V.K. Balsevich, V.I. Zagvyazinsky, V.A. Koleda, I.V. Manzheley, S.I. Filimonova, V.M. Kulikov, V.A.

Ovsyankin, and others), therefore, they pay special attention to the issues of organizing students' classes in the P.E. academic discipline and increasing its effectiveness.

In recent years, some authors (I.V. Manzheley, N.S. Bytich, S.I. Filimonova, O.V. Shinkarenko, S.V. Schetinina) associate the qualitative improvement of the process of physical education of students with the creation of a physical culture and sports environment of an educational institution, as a set of conditions and opportunities for self-development and self-expression of a person in the field of physical culture and sports.

Since the formation of a student's personality is carried out in the environment of an educational institution, the presence in it of a high-quality physical culture and sports environment is a necessary component of the general sociocultural environment of the university, since it is in it that conditions are

created for the individualization and differentiation of the manifestation and development of people's abilities in the forms of physical culture and sports activity [1, p.59]. This, in turn, required to develop a concept for increasing the effectiveness of physical education of students on the basis of creating an integrated educational physical culture and sports environment.

The developed concept reflects ways of increasing the effectiveness of physical education, research approaches (systemic, environmental and personality-oriented) to solving the problem under study, substantiates the need to take into account environmental factors and presents an integrated physical culture and sports environment as a dynamic integrity, in which conditions are created for the harmonious development of a student's personality and his self-realization in physical culture [2, p.44].

In the context of the implementation of this concept, fundamental changes were assumed in the organization of the educational process in physical culture of students associated with a gradual reduction of auditorium classes with a teacher and an increase in the proportion of controlled independent work [3, p.53]. Controlled independent work is presented as the main link of the concept of increasing the effectiveness of physical education of students, developed by us, based on the organization of an integrated educational physical culture and sports environment.

The educational activity is based on the student's independent activity, which in pedagogical practice is manifested through a systematic transition from compulsory forms to physical self-improvement of students.

Significant changes were made to the organization of the educational process in the P.E. discipline, so according to the curricula of various specialties the labor intensity of the P.E. discipline is 140 hours per year. The auditorium load (classes with the main teacher) is 42 hours for 1-2 year students, the rest of the classes is realized as controlled independent work of students.

Controlled independent work is equated with auditorium work; in the 3rd year, 100% of classes are held within the framework of controlled independent work of students.

During the auditorium classes, teacher discusses with the student his personal motivation for classes, the most preferable types of physical culture and sports activities for the student and student's goal-setting. Further, the individual trajectory of a student's development is determined (physical culture and education, physical culture and health, physical culture and development, physical culture and sports).

A student starting to study an academic discipline receives information about all forms of independent work in the discipline with the allocation of compulsory types of independent work, as well as information about all types of physical activity and sports available to him, taking into account the individual trajectory of self-improvement in accordance with his interests, needs and opportunities. Each student is offered a choice of various forms and types of physical education and sports for the controlled independent work. Focusing on his personal needs, the student chooses an acceptable form of independent work from the list offered to choose from [4, p.39-40].

According to the schedule, classes are held twice a week for two hours, but the student, within the framework of controlled independent work, determines the type of physical activity himself, for example: swimming or athletics, fitness, or ice skating, or maybe volleyball, etc. In addition, students are given the opportunity to individually choose the time of classes, at a convenient time for him, which in our opinion will significantly increase the level of students' motor activity.

This path determines the strengthening of the educational and methodological orientation of the pedagogical process, the development of physical culture knowledge by students, which allows them to independently and rationally carry out physical culture and sports activities.

In order to determine the effectiveness of the developed concept of an integrated educational physical culture and sports environment of the HEI, a pedagogical experiment was carried out, in which 1066 students of the Banking Faculty, the Economics and Finance Faculty and the Biotechnological Faculty of Polesky State University took part.

The participants were assigned by sex (gender). The number of women who took part in our experiment was 756 people, of whom the experimental group of 378 people was formed -

EG/w (n = 378) and the control group of 378 people - CG/w (n = 378). The number of male participants was 310 people, of which the experimental group of 155 people was formed - EG/m (n = 155), and the control group of 155 people - CG/m (n = 155).

To determine the effectiveness of the developed concept, the physical readiness level of male students from the CG/m and the EG/m was tested according to the following categories: long jump from the spot, forward bend from a sitting position, flexion and extension of arms in a lying position, pulling up on a high bar, lifting torso from a supine position within 60 sec., 4 x 9 m shuttle run, 30 m distance run, 3000 m distance run (Table 1.)

As can be seen from the table at the initial stage of the experiment, the empirical value of

the Wilcoxon criterion obtained as a result of calculations for all the studied categories is less than the critical value  $W_{0.05} = 1.96$ , that is,  $W_{emp} \leq 1.96$  therefore, it can be concluded that the studied groups and CG/m and EG/m did not have statistically significant differences at the beginning of the experiment, the characteristics of the compared samples coincide with the significance level of 0.05.

After the experiment was finished, the comparative analysis showed that there are changes in the results of students' pedagogical tests: in the category of the long jump from the spot, the results after the end of the experiment for the EG/m -  $(263.8 \pm 20.7)$ ,

Table 1. – The dynamics of physical readiness numbers of male students from the CG/m and the EG/m in corresponding categories

Testing period	CG/m before exper.	CG/m after exper.	Growth, %	EG/m before exper.	EG/m after exper.	Growth, %	*W before exper.	p	*Wafter exper.	P
Long jump from the spot, cm	228,1±19,5	248,5±20,3	8,9%	231,1±21	263,8±20,7	14,2%	1,49	<0,05	6,30	>0,05
Forward bend from a sitting position, cm	12,6±7,3	15,3±7,7	21,4%	12,7±8,2	17,0±8	33,6%	0,34	<0,05	2,37	>0,05
Flexion and extension of arms in a lying position, times	44,6±9	49,2±9,1	10,4%	43,2±10,7	53,3±11,7	23,4%	0,79	<0,05	4,55	>0,05
Pulling up on a high bar, times	9,5±4,7	11,2±4,6	17,1%	9,3±6,2	12,5±6	34,0%	0,58	<0,05	1,98	>0,05
Lifting torso from a supine position, times per 60sec.	47,3±7,3	52,9±7,6	11,8%	48,3±7,4	57,5±7,6	19,0%	1,27	<0,05	5,06	>0,05
4 x 9 m shuttle run, m/s	9,25±0,51	9,07±0,5	2,0%	9,16±0,57	8,84±0,49	3,6%	1,82	<0,05	3,97	>0,05
30 m distance run, m/s	4,42±0,27	4,37±0,22	1,2%	4,36±0,27	4,23±0,18	2,8%	1,94	<0,05	5,29	>0,05
3000 m distance run, m/s	849,9±41,2	685,7±43,2	19,3%	854,8±48,7	662,2±50	22,5%	1,36	<0,05	15,18	>0,05

\*the Wilcoxon-Mann-Whitney statistical test is used.  $W(0,05) = 1.96$ .

while in the CG/m - ( $248.5 \pm 20.3$ ) the obtained empirical value of the criterion is more than the critical value -  $Wemp = 6.30 > 1.96$  ( $p > 0.05$ ); in the category forward bend from the sitting position the results are in EG/m - ( $17.0 \pm 8$ ), whereas in CG/m - ( $15.3 \pm 7.7$ )  $Wemp = 2.37 > 1.96$  ( $p > 0.05$ ); in the category of flexion and extension of the arms in the lying position, the result in the EG/m are ( $53.3 \pm 11.7$ ), while in the CG/m are ( $49.2 \pm 9.1$ ), the obtained  $Wemp = 4.55 > 1.96$  ( $p > 0.05$ ); in the category of pulling up on a high bar, results in EG/m are ( $12.5 \pm 6$ ), while in CG/m are ( $11.2 \pm 4.6$ )  $Wemp = 1.98 > 1.96$  ( $p > 0.05$ ); in the category of lifting torso from a supine position within 60 sec. after the end of the experiment, the results changed as follows in the EG/m - ( $57.5 \pm 7.6$ ), while in the CG/m the results are ( $52.9 \pm 7.6$ )  $Wemp = 5.06 > 1.96$  ( $p > 0.05$ ); in the category of 4x9 m shuttle run after the end of the experiment, the results in the EG/m are ( $8.84 \pm 0.49$ ) in the CG/m are ( $9.07 \pm 0.5$ ) value  $Wemp = 3.97 > 1.96$  ( $p > 0.05$ ); in the category of 30 m distance run after the experiment the results in EG/m are ( $4.23 \pm 0.18$ ), while in CG/m are ( $4.37 \pm 0.22$ )  $Wemp = 5.29 > 1.96$  ( $p > 0.05$ ); in the category of the

3000m distance run after repeated testing the result in EG/m are ( $662.2 \pm 50$ ) in CG/m are ( $685.7 \pm 43.2$ ), value  $Wemp = 15.18 > 1.96$  ( $p > 0.05$ ).

Consequently, it can be concluded that the effectiveness of physical education based on the organization of an integrated educational physical culture and sports environment was expressed in an increase in physical readiness numbers in the experimental group, since there is a statistically significant difference in all the studied numbers between the EG/m and CG/m  $Wemp = > 1.96$  the significance of differences is 95% ( $Wemp > 0.05$ ).

Testing of the physical readiness of female students in the CG/w and EG/w was carried out according to the following categories: long jump from the spot, flexion and extension of arms in the lying position, 30 m distance run, 4x9 m shuttle run, 1500 m distance run, lifting torso from a supine position for 60 sec., forward bend from a sitting position (Tab. 2).

As can be seen from the table there were no statistically significant differences between female students from EG/w and CG/w at the initial stage of the study.

Table 2. – The dynamics of physical readiness numbers of female students from the EG/w and the CG/w in corresponding categories

Testing period	CG/w before exper.	CG/w after exper.	Growth, %	EG/w before exper.	EG/w after exper.	Growth, %	*W before exper.	p	*W before exper.	p
Long jump from the spot, cm	178,3±16,3	183,7±14,2	3,1%	178,2±15,7	190,6±12,4	6,9%	0,04	<0,05	7,35	>0,05
Forward bend from a sitting position, cm	18,3±6,5	20,6±5,6	12,6%	18,1±6,3	23,9±4,8	32,1%	0,54	<0,05	8,51	>0,05
Flexion and extension of arms in a lying position, times	7,5±4,7	9,2±4,6	21,7%	7,4±3,7	10,6±3,3	42,3%	0,48	<0,05	9,98	>0,05
Lifting torso from a supine position, times per 60sec	50,1±7,2	52,7±6,4	5,1%	50,2±7,7	55,3±7,2	10,2%	0,34	<0,05	5,74	>0,05
4 x 9 m shuttle run, m/s	10,30±0,47	10,15±0,43	1,4%	10,29±0,47	10,09±0,45	2,0%	0,04	<0,05	1,98	>0,05
30 m distance run, m/s	5,05±0,30	5,0±0,28	0,9%	5,04±0,31	4,97±0,25	1,5%	0,23	<0,05	1,18	<0,05
1500 m distance run, m/s	461,7±17,7	425,1±16,8	7,9%	462,4±18	403,9±16	12,7%	0,67	<0,05	15,08	>0,05

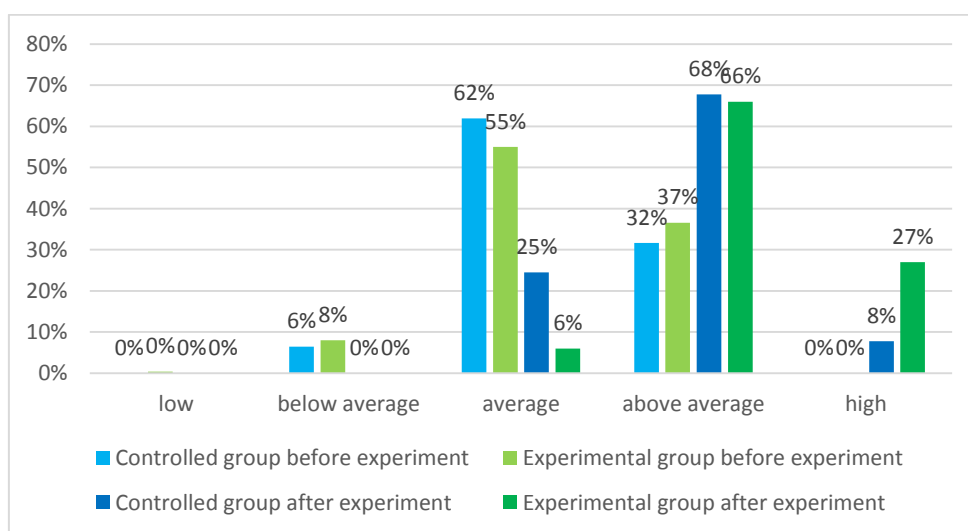


After the experiment, the results differ significantly: in the category of long jump from the spot, the results changed as follows in the EG/w -  $(190.6 \pm 12.4)$ , while in the CG/w the results are  $(183.7 \pm 14.2)$  the empirical value of the criterion turns out to be greater than the critical  $W_{emp} = 7.35 > 1.96$  ( $p > 0.05$ ); in the category of bending forward from a sitting position after the end of the experiment, the results in the EG/w are  $(23.9 \pm 4.8)$ , while in the CG/w -  $(20.6 \pm 5.6)$  the empirical value  $W_{emp} = 8, 51 > 1.96$ , ( $p > 0.05$ ); in the category of flexion and extension of the arms in the lying position after the end of the experiment, the results changed as follows in the EG/w -  $(10.6 \pm 3.3)$ , whereas in the CG/w the results are  $(9.2 \pm 3.2)$   $W_{emp} = 9, 98 > 1.96$  ( $p > 0.05$ ); in the category of lifting torso from a supine position within 60 sec. after the end of the experiment the results in the EG/w  $(55.3 \pm 7.2)$ , while in the CG/w  $(52.7 \pm 6.4)$   $W_{emp} = 5.74 > 1.96$  ( $p > 0.05$ ); in category of 4x9 m shuttle run after the end of the experiment, the results in the EG/w are  $(10.09 \pm 0.45)$  and in the CG/w are  $(10.15 \pm 0.43)$  value  $W_{emp} = 1.98 > 1.96$  ( $p > 0, 05$ ); in 30 m distance run the results after the experiment in EG/w are  $(4.97 \pm 0.25)$ , whereas in CG/w -  $(5.0 \pm 0.28)$  with  $W_{emp} = 1.18 < 1.96$ , ( $p < 0.05$ ); in 1500m distance run after repeated testing, the results in EG/w are  $(403.9 \pm 16)$  and in CG/w are  $(425.1 \pm 16.8)$ ,  $W_{emp}$  value =  $15.08 > 1.96$  ( $p > 0.05$ ).

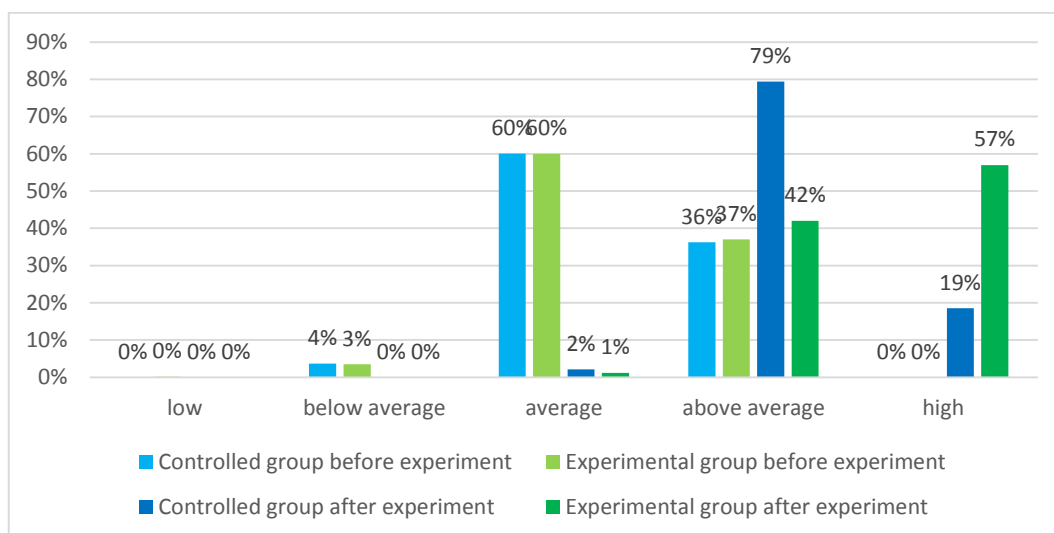
Consequently, it can be concluded that the effectiveness of physical education in the context of the implementation of the concept of increasing the effectiveness of physical education of students, based on the organization of an integrated educational physical culture and sports environment, was expressed in an increase in physical readiness numbers in the experimental group, relative to the control group, since there is a statistically significant difference between EG/w and CG/w  $W_{emp} > 1.96$  the reliability of differences is 95% ( $W_{emp} > 0.05$ ) in the following categories: long jump from the spot, flexion and extension of arms in the lying position, 4x9 m shuttle run, 1500 m distance run, lifting torso from a supine position for 60 sec., forward bend from a sitting position. After the experiment, in category of 30m distance run there were no statistically significant differences between the characteristics of the EG/w and CG/w  $W_{emp} = 1.18 < 1.96$ .

The study of the dynamics of the level of physical readiness in the CG/m and EG/m (Picture 1) and in the EG/w and CG/w (Picture 2), revealed that before the experiment there were no significant differences in the level of preparedness for the EG/m and the CG/m and EG/w and CG/w.

After the experiment has been finished, it was revealed: not a single student has low and below average levels in the EG/m - 0% (0 people) and in the CG/m - 0% (0 people),



Picture 1. – The dynamics of physical readiness level of male students from the CG/m and the EG/m



Picture 2. – The dynamics of physical readiness level of female students from the CG/w and EG/w

the average level is observed among 25% of the male students in the CG/m (38 people) and 6% in the EG/m (10 people), the above average level includes 68% in the CG/m (105 people) and 66% in the EG/m (103 people), and the high level includes 8% of students in the CG/m (12 people) and 27% in the EG/m (42 people).

Also, after the experiment, statistically significant differences are observed in the level of physical readiness for the EG/m and CG/m, since the calculated empirical indicator  $X^2 = 33.02$ , i.e. empirical  $X^2$  is greater than critical  $X^2 = 33.02 > 5.991$  ( $p > 0.05$ ).

Then we analyzed the dynamics of physical readiness of female students from the CG/w and EG/w (Picture 2).

After the completion of the formative stage of the experiment, changes in the level of physical readiness were revealed: among the female students of the experimental group from the EG/w, 42% belong to the above average level, and the high level was observed in 57%, and in the CG/w, 79% of students have the above average level of readiness and the high level includes 19%.

After the end of the experiment, there are statistically significant differences in the level of preparedness for the EG/w and CG/w, since the calculated empirical  $X^2$  is greater than the critical one  $X^2 = 117.02 > 5.991$  ( $p > 0.05$ ).

Consequently, the effectiveness of physical education in the conditions of implementation the concept of increasing the effectiveness of

physical education of students, on the basis of the organization of an integrated educational physical culture and sports environment, was expressed in an increase in the level of physical readiness of the experimental groups from the EG/w and EG/m, which is proved by statistically distinct results of the experiment.

Therefore, it can be proved that the organization of physical education of students in the conditions of an integrated educational physical culture and sports environment, has increased its effectiveness.

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