

Preservation of Student Health At University Class Exercise: Implementation Technology

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Abstract

The article describes health preservation technology among students at the university class exercise, which includes five technological stages (motivational-stimulating, substantive-procedural, control-adjusting and reflexive). It is proved that the effectiveness of technology use is ensured by the observance of the pedagogical conditions: the saturation of educational process by health saving elements (techniques, means); taking into account the teacher's mental, physical performance and individual characteristics of students; methodological support of the educational process organization; teacher preparedness for health-saving activities.

Keywords: Classroom Exercise, Technology, Health, Students, Educational Process, University.

Problem Relevance

The health of future experts can be considered as humanitarian indicator, the condition for the effective development of the modern system of higher education. Despite the fact that during recent years, measures have been developed and implemented at universities of Russia to optimize the conditions of study and improve students' performance, the organization of health-saving educational process during class exercise was studied poorly. The educational process is still student health reduction factor, which requires the search for new approaches and the development of effective technologies for health-saving educational process organization at university classroom exercise.

Problem Statement

The analysis of the scientific literature and future expert training practice shows that a certain amount of experience has been gained to preserve student health at university [1-9, 12-15]. However, the content, pedagogical conditions, the technology of student health preservation (its physical, mental and social components) in the educational process of the university classroom exercise remain poorly studied by researchers. In this regard, there is the contradiction between the need of society for student health preservation during the educational process at university and the insufficient elaboration of this issue in pedagogical theory and practice. This contradiction became the basis for research problem determination, which consists in pedagogical condition and health-saving educational process organization technology reasoning during the university classroom exercise.

Determination and Description of Tools

The solution of the indicated problem is provided by a set of methods: theoretical (analysis of scientific sources on research problem, comparative analysis; the analysis of educational activity results, the analysis of personal educational activity, modeling); empirical (observation, questioning, testing, pedagogical experiment, conversation, the method of expert estimates, the methods of experiment result mathematical processing).

Main part

The experimental substantiation of the considered technology was carried out on the basis of the Belgorod State National Research University (SRI "BelSU) and Transnistrian State University named after T.G. Shevchenko (PSU) in 2015-2018. 586 students took part in the experiment at its different stages [10, 11].

Consistent approbation of technology stages was carried out during classroom exercises in the process of the experiment. The first stage is motivational-stimulating one (3-5 minutes) coinciding with the initial phase of student mental activity (working in) and involves the encouraging of students to perform educational and health-saving activities in various ways. So, in order to mobilize students, they used educational kinesiology exercises to develop inter-hemispheric interaction and improve students' thinking activities.

The second, meaningful and orientational stage (7-10 minutes), coincides with the period of steady

working capacity of students, therefore, it suggests a fairly rich content of activity. At this stage, the process of orienting basis of action understanding by students is implemented through a complex of special exercises, tasks, creative projects and research work, in which the valeological orientation is traced, and individually-personal and psycho-physiological features of students are taken into account. The content of educational material should have already known and understandable elements; the appeal to current, everyday and important health preservation issues for students; accessibility combined with science and tension (developing knowledge, interest increase); entertaining academic classes.

The third stage is the procedural stage (about 50-60 minutes) which also coincides with the period of student high efficiency. However, if the learning process during classroom exercise is intense, there period of full compensation for mental performance may take place. In this case, initial signs of fatigue appear, which, through a teacher taking special measures, are compensated for by volitional effort and positive motivation on the part of students. The health-preserving methods and techniques available in the teacher's arsenal allow us to solve the problem of training session tediousness:

- 1) The distribution of educational material content in accordance with the dynamics of student mental performance. Complicated material coincides with the peak of student performance; during the period of working capacity decline, overwork is prevented by physical exercises, jokes, humor, i.e. "relaxation moments" are included;

- 2) The change of activities. A teacher uses the dictation writing, slide and video clip viewing, tables, graphs, discussion using rhetorical or problematic issues, applies micro tasks, interactive whiteboard (public research method), stimulates students with the selection of interesting facts, statistical material, dynamic posture method, etc.;

- 3) Emotional saturation of educational material, its presentation. The lecturing skills of the teacher are included: voice variation, argumentation, accessible presentation of educational material, taking into account the dominant channel of information learning (audio, visual, kinesthetic). The teacher's position is expressed through the techniques of "body language" and "face building" (pantomimic and facial mimic); correspondence of material presentation rate to the possibilities of its perception and fixation by students; the use of techniques maintaining the attention of students.

Valeological methods provide dosed help to students during difficulties, creating the situation of success, feedback, an objective assessment of

student's knowledge, contributing to the preservation of their physical, mental and social health components.

During the discussion of practical training questions, the teacher observes the work of students, providing assistance if necessary, encourages students to search for a problem solution actively. From time to time (during student working capacity decrease), the teacher offers students "lively" exercises (1 minute). Students present the studied material in the form of tables, diagrams, intellect cards, etc., go to the board for the prevention of physical inactivity during class.

During the classroom exercise you can use non-traditional teaching methods. For example, the method of empathy, semantic vision, the method of heuristic observation, the method of hypotheses that facilitate the process of information perception, making it entertaining and unconstrained, developing not only mental, but also creative abilities of the personality, contribute to a friendly atmosphere maintaining in the group. Learning material is better remembered if studied in a favorable atmosphere, has stable links with the corresponding emotional state.

The fourth stage - control and adjusting stage (about 10 minutes) coincides with the period of unstable compensation, fatigue increases, the fluctuations of volitional effort are observed. The productivity of educational activity is reduced, so you need to help students. The teacher collects and analyzes the results of educational process. He identifies the errors in the responses and makes recommendations for their elimination. The teacher assists students taking into account their level of preparedness and difficulty type; he evaluates knowledge and skills promptly and objectively, increases interest in learning, fosters confidence in evaluations; sets the level of educational material mastering for further individualization and differentiation of their training; he determines the final level of learning goal achievement set by students.

As the part of the control and adjustment stage, we conducted testing on the studied topic. Students were offered preliminary prepared tests, compiled with the provision of the possibility to choose material complexity level. The level of tasks "to be able" and "to know" prevailed. The teacher conducted a positive support of student personality. If during the previous stage they used fatigue prevention methods, an active rest was organized by the teacher, the organism was restored, then we can expect the return of working capacity to the initial level - preceding the working one, or the appearance of over-recovery. In this case, the reflexive - evaluation stage of the educational

process during the classroom exercise is favorable for reflection implementation.

The reflexive stage (up to 10 minutes) is defined by us as teacher activity type during a classroom exercise used to create the necessary reflective environment for self-knowledge and analysis of their own thoughts and actions by students on the third hand. The reflective stage involves the student thinking about his inner state (physical, mental and social). During the classroom exercise the student, reflecting on another person, is more aware of his activity results during the classroom exercise, which, of course, affects the health-saving behavior of the future expert, the choice of methods and forms to maintain his social health.

In our experiment, the final stage was devoted to the analysis of the whole team work. The "Cluster" technique was used. Students were asked to draw a picture, for example, the solar system model: a star, planets and their satellites. There is a star in the center, i.e. the theme "Adaptation", there are planets around it, i.e. adaptation mechanisms, principles and stages. We connect them with a straight line to a star, each planet has its satellites - we discover the adaptation mechanisms, principles and stages.

According to the finished cluster, one could see the whole picture of the studied material and draw the appropriate conclusions. During the assignment, students listened to the excerpts from two pieces of music: disturbing music and calm, enthusiastic music. Then they chose a piece of music that matched their mood.

The study showed that the classroom exercise on experimental technology showed a high level of student activity. The lesson was held dynamically due to the correct distribution of tasks in the group, and a comfortable psychological climate development. A special selection of valeological elements contributed to the positive dynamics of students' performance, the ability to remain at a sufficiently high level throughout the entire class exercise. The analysis of oral and written answers allowed us to conclude that the organization of the educational process was successful, taking into account the technology specifics.

The health indicators of students from the experimental and control groups during the classroom exercise at the university before and after the experiment are presented in Table 1.

Table-1: Student health indicators in the experimental and control groups during the classroom exercise at the university before and after the experiment

Health indicators for students	Levels of organization of educational process on the selected Pro-health "lesson"								
	группы	optimal		valid		critical		invalid	
		before experiment	after experiment.	before experiment	after experiment	before experiment	after experiment	before experiment	after experiment.
<i>Optimal working posture of the student during the whole training session</i>	Cg	0%	3%	20%	27%	73%	64%	7%	6%
	Eg	0%	31%	18%	69%	75%	0%	7%	0%
<i>Student physical health</i>	Cg	0%	4%	21%	26%	69%	61%	10%	9%
	Eg	0%	32%	19%	68%	71%	0%	10%	0%
<i>Qualitative and quantitative indicators of the health of the student</i>	Cg	0%	0%	25.4%	26.9%	68.4%	66.2%	6.2%	6.9%
	Eg	0%	23.5%	23.8%	76.5%	70.1%	0%	6.1%	0%
<i>The degree of emotional students</i>	Cl	0%	3%	39.2%	50.1%	60.8%	46.9%	0%	0%
	Cs	0%	0%	47.7%	69.5%	52.3%	30.5%	0%	0%
	El	0%	20%	33%	80%	67%	0%	0%	0%
	Es	0%	25%	44%	75%	56%	0%	0%	0%
<i>Mental health component</i>	Cl	0%	0%	26.1%	25.4%	66.2%	70%	7.7%	4.6%
	Cs	0%	0%	27.8%	27.7%	63.8%	66.2%	8.4%	6.1%
	El	0%	22%	30%	78%	63.9%	0%	6.1%	0%
	Es	0%	24%	24.6%	76%	66.2%	0%	9.2%	0%
<i>The social component of health</i>	Cg	0%	0%	23.4%	23.5%	69.8%	70%	6.8%	6.5%
	Eg	0%	23.7%	23.3%	76.3%	70.2%	0%	6.5%	0%
<i>Educational technology teacher</i>	Cg	0%	4%	24%	24%	69%	66%	7%	6%
	Eg	0%	24.5%	22%	75.5%	71%	0%	7%	0%
<i>Emotional</i>	Cg	0%	5%	20%	30%	74%	61%	6%	4%

situation	Eg	0%	26%	19%	74%	76%	0%	5%	0%
The relationship of the content of educational material and cultural health of students	Cg	0%	5%	23%	32%	67%	55%	10%	8%
	Eg	0%	27%	22%	73%	68%	0%	10%	0%
The actions of the teacher to motivate students' learning activities during the whole training session.	Cg	0%	2%	22%	26%	66%	64%	12%	8%
	Eg	0%	25.5%	21.5%	74.5%	70%	0%	8.5%	0%
Accounting of real educational opportunities for students, teaching differential	Cg	0%	3%	22,5%	27%	69,5%	63%	8%	7%
	Eg	0%	27.5%	20%	72.5%	71%	0%	9%	0%
The teacher's actions for the prevention and reduction of utomitelnosti training session, overcoming mental and static electricity students	Cg	0%	0%	25%	26%	69%	70%	6%	4%
	Eg	0%	26.5%	23%	73.5%	70%	0%	7%	0%
The inclusion of each student in an active teaching and learning	Cg	0%	2%	22%	26%	72%	67%	6%	5%
	Eg	0%	25%	20%	75%	74%	0%	6%	0%
The time of onset of fatigue of students to reduce mental activity	Cg	0%	3%	24%	28%	66%	62%	10%	7%
	Eg	0%	27%	22%	70%	67%	3%	11%	0%
Monitoring and evaluation of students' knowledge	Cg	0%	3%	23.5%	25%	69.5%	67%	7%	5%
	Eg	0%	30.5%	23%	69.5%	69%	0%	8%	0%
Total	Cg	0%	2.2%	25.7% +23.8= 24.75	31%	67.4%+69.3= 68.35	61.7%	6.9%	5.5%
	Eg	0%	25.9% +25.9 = 25.9%	24%+2 3= 23.5%	73.9%+73.3= 73.6	69.1%+70.2= 69.7	0.2%+0.3= 0.5	6.8%+6.8= 6.8	0%
Dynamics	Cg		+ 2.2%		+ 6.25%		- 6.65%		- 1.4%
	Eg		+ 25.9%		+ 50.1%		-69.2%		- 6.8%

Cg- control group

Eg- experimental group

Cl- control group- lecture

Cs - control group-seminar

El –experimental group- lecture

Es- experimental group- seminar

The dynamics of students' health integral indicator during the classroom confirms our hypothetical assumptions about the need to preserve the three health components in the conditions of the classroom exercise at the university. Thus, they managed to improve the health indicator was significantly (by 25.9%) in the experimental group - the optimal level and by 50.1% - the permissible level. Control group: 2.2% - the optimal level and 6.25% - the allowable level, i.e. there is a negative trend in terms of student health preservation during the classroom exercise at the university. Comparative results on the application

of student health preservation technology for control and experimental groups during the classroom exercise at the university are presented by Figure 1.

In general, the results obtained by us confirmed the effectiveness of the technology used by us, since significant positive changes occurred in the experimental group. There is also improvement tendency in the control group, but statistically unreliable, which indicates the absence of clear mechanisms for work conduct on the organization of the educational process during the classroom exercise at the university.

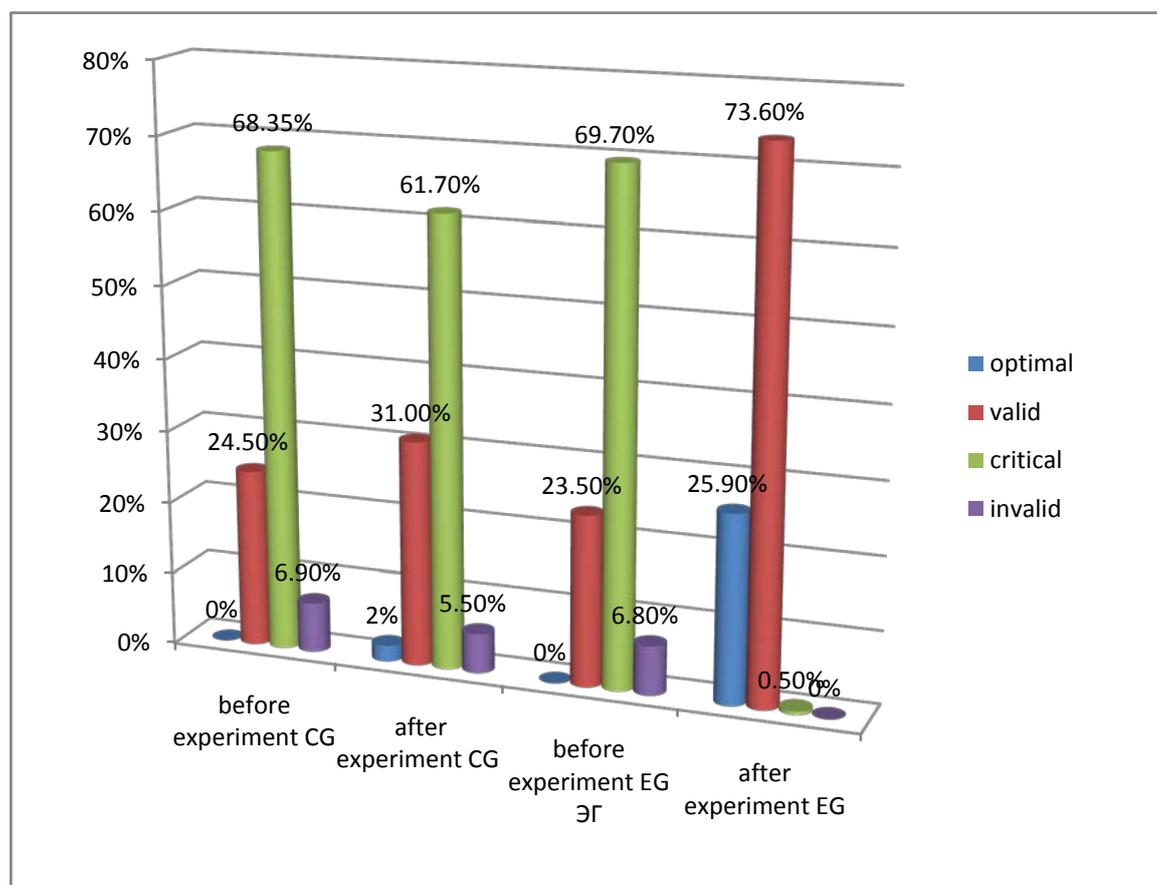


Diagram-1: The levels of health-saving educational process organization during the classroom exercise at the university before and after the experiment

Thus, the health indicator was significantly improved in the experimental group (by 25.9%) - the optimal level and by 50.1% - the permissible level. The control group: 2.2% - the optimal level and 6.25% - the allowable level, i.e. there is a negative trend in terms of student health preservation during the classroom exercise at the university.

Summary

So, the process of the technology implementation involves saturating of each stage of exercise with valeological elements. During the implementation of the technology, it is important to take into account the

dynamics and the level of student performance depending on the time of training and the training session characteristics. In the course of the experiment, such methods and techniques as psychological attitudes to exercise, psychogymnastics, kinesiological, physical and respiratory exercises, as well as the consideration of the leading student modalities (audials, visuals, kinesthetics) and their performance dynamics, showed the greatest efficiency.

The obtained data analysis indicates that the level of future expert health has a more positive trend in

experimental groups as compared with the control group.

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