УДК 796.035

Organizational aspects of implementation of modern of health technologies in the process of physical education of students in the special educational department

O.T. Kuznetsova
National University of Water and Environmental Engineering, Rivne (Ukraine)

The special role in students' stimulation and motivation for active and systematic physical trainings in the high educational establishment is played by modern health technologies.

A research purpose is an exposure of advantages and complications of implementation and assessment of the prospects of application of modern health technologies with the students in special medical groups.

Material and methods. *The research work is based on author's experimental researches, and also on materials of students' questioning.*

Findings and their discussion. *Analysis of the questionnaire results showed differences in the choice of types of motor activity by gender. Not all types of physical culture and sport, which form the basis of the course of educational discipline «Physical education», entered in the number of priority.*

Conclusion. *The analysis of results of introduction of modern health technologies allowed determine the orientation of their application in the process of physical education, diversify forms and facilities, based on the integration of components of traditional health technologies with innovative, their qualitative transformation.*

Key words: *students, physical education, special educational department, health technologies.*

Организационные аспекты внедрения современных оздоровительных технологий в процессе физического воспитания студентов специальных учебных отделений

Е.Т. Кузнецова
Национальный университет водного хозяйства и природопользования, г. Ровно (Украина)

Ведущую роль в мотивации студентов к систематическим занятиям физической культурой и спортом в высших учебных заведениях играют современные оздоровительные технологии.

Цель статьи – выявление преимуществ и сложностей реализации, оценка перспектив применения оздоровительных технологий в процессе физического воспитания студентов специальных учебных отделений.

Материал и методы. *Работа основывается на экспериментальных исследованиях автора, а также на материалах опросов студентов.*

Результаты и их обсуждение. *Установлены причины малоэффективного использования оздоровительных технологий в учебном процессе по физическому воспитанию. Результаты анкетирования студентов выявили гендерные различия в выборе видов двигательной активности. Не все виды физической культуры и спорта, которые включены в учебную программу дисциплины «Физическое воспитание», пользовались популярностью у студентов.*

Заключение. *Разработан алгоритм внедрения оздоровительных технологий в учебный процесс, основанный на интеграции компонентов традиционных технологий оздоровления с инновационными, их качественной модернизации.*

Ключевые слова: *студенты, физическое воспитание, специальное учебное отделение, оздоровительные технологии.*

Process of physical education of students in special educational department must be sent to health strengthening and leveling of consequences of the carried diseases, correction of functional and motor disorders, assistance to correct physical development and tempering of organism, increase of moving activity, forming of basic (first of all, vitally necessary) moving abilities and skills, posture correction, teaching the correct breathing and other [1; 2]. The special role in students' stimulation and motivation on the active and systematic physical culture and sports in higher educational establishments is played by innovative health technologies.

Despite some modern approaches elaborated on the use of health technologies in the educational process of physical education, there are not any ef-

fects from their introduction in practice [3; 4]. Herewith is deprived of attention decision of this problem in the conditions of restructuring the traditional system of physical education in higher educational establishments in Ukraine. We believe that this is due to the absence of formation of the students' valued orientations on the healthy way of life.

That's why an aim of our further research is the exposure of advantages and difficulties of implementation and assessment of the prospects of application of the modern systems of physical and health improving classes with the students in special educational department.

Material and methods. At this stage of the research theoretical analysis and synthesis of theoretical and scientific literature is conducted. Pedagogical experience on the implementation of the innovative health technologies in the process of students' physical education in higher educational establishments in Ukraine and CIS countries, including universities in Kyiv, Minsk, Belgorod, St. Petersburg, Togliatti and others is studied.

Findings and their discussion. The results of questionnaire of 468 students of I–IV courses in special educational department showed that the most popular are the following types of moving activity: cycling (45,09%), health swimming (43,59%), aerobics (25,00%), health walking, run (20,94%), athletic gymnastics (16,02%), tourism (8,97%), ping-pong (5,34%), volleyball (3,42%), fitness yoga (3,21%), basketball (2,14%), horse riding (1,49%), football (1,28%) and others (Table 1). The priority types of students' motor activity were not entered all types of physical culture and sport, which form the basis of course of educational discipline «Physical education». It means that an educational process does not take into account the students' interests.

Popularity (demand) of modern health technologies for the students in special educational department due to the fact that each of them contributes to the solution of various problems, satisfaction of different necessities, significantly important to those, who involved. For each of them a main purpose is to assist students' aspiring to the improvement of health, physical and psychical welfare by using the health improving training. At the same time, the experts' [3–6] and personal author's experience shows that the use of modern health technologies with this contingent of students has not only advantages but also a number of difficulties and limitations (Table 2).

Table 1

The most popular types of physical activity, which students in special educational department are engaging (*%, n = 468)*

Types of physical culture and sports	Sex	Courses				General %
		I	II	III	IV	
Cycling	men	42,55	50,00	38,46	58,06	44,84
	women	38,18	41,77	36,76	62,50	45,25
	together	40,20	44,44	37,67	61,78	45,09
Health swimming	men	34,04	50,00	47,43	48,39	44,84
	women	38,18	40,51	47,06	44,44	42,70
	together	36,27	44,03	47,26	45,63	43,59
Aerobics	men	2,13	–	–	–	0,52
	women	38,18	37,97	48,53	44,44	42,33
	together	21,56	25,64	22,60	31,06	25,00
Health walking, run	men	21,28	21,05	–	35,48	28,35
	women	7,27	15,19	10,29	27,78	15,69
	together	13,72	17,09	22,82	30,09	20,94
Athletics gymnastics	men	12,76	10,53	–	9,67	13,92
	women	12,73	12,66	19,12	25,00	17,51
	together	12,74	11,96	18,49	20,38	16,02
Tourism	men	8,51	21,05	9,43	19,35	11,85
	women	5,45	15,19	2,94	2,78	6,93
	together	6,86	17,09	5,78	7,76	8,97
Ping-pong	men	8,51	15,79	3,84	12,90	8,76
	women	1,82	3,80	1,47	4,17	2,92
	together	4,90	7,69	2,73	6,79	5,34

End of Table 1

Volleyball	men	2,13	–	1,89	–	1,03
	women	5,45	10,13	–	4,17	5,11
	together	3,92	6,83	0,82	2,91	3,42
Fitness yoga	men	–	–	–	–	–
	women	10,91	7,59	4,41	–	5,47
	together	5,88	5,12	2,47	–	3,21
Basketball	men	2,13	–	–	3,22	3,61
	women	–	2,53	–	1,39	1,09
	together	0,98	1,70	–	1,94	2,14
Horse riding	men	–	–	–	–	–
	women	3,64	1,26	4,41	1,39	2,55
	together	1,96	0,85	2,47	0,97	1,49
Football	men	2,13	–	5,66	6,45	3,09
	women	–	–	–	–	–
	together	0,98	–	2,47	1,94	1,28
Parachute sport	men	–	–	–	–	–
	women	–	2,53	2,94	–	1,46
	together	–	1,70	1,65	–	0,85
Martial Arts	men	2,13	2,63	–	–	1,03
	women	–	–	–	–	–
	together	0,98	0,85	–	–	0,43
Ski	men	–	–	–	–	–
	women	–	1,26	–	1,39	0,73
	together	–	0,85	–	0,97	0,43
Chess/sword	men	2,13	–	4,00	4,00	10,13
	women	–	–	–	–	–
	together	0,98	–	4,00	0,97	0,22
Boxing	men	–	–	–	–	–
	women	1,82	–	–	–	0,36
	together	0,98	–	–	–	0,21
Diving	men	–	–	–	–	–
	women	–	1,26	–	–	0,36
	together	–	0,85	–	–	0,21
Shooting	men	–	–	1,89	–	0,51
	women	–	–	–	–	–
	together	–	–	0,82	–	0,21

Note. The types of physical culture and sport are proposed according to the rating of willing to engage in this type.

Table 2

Modern health technologies, advantages and defects of their use with the students in special educational department

Types of health technologies	Orientation (tasks), advantages	Defects
Health technology with the use of rhythmic gymnastics, classic, dancing, step aerobics	Allows reducing weight, improving general endurance, coordination, speed, flexibility, helps increasing emotional background [1, p. 93; 5].	There is limitation in the directed forming of body proportions, the prevention of various diseases, there are complications in the dosage of loading [7].

Continuation of Table 2

	A number of exercises, which influence negative on muscular-skeletal system is eliminated: deep, sharp sitting, inclinations with straight legs, circular turns one's head and so on [1, p. 93]. The height of platform in a step aerobics, which is regulated, allows engaging in a group of students with different levels of physical preparedness. Use encumbrances and free energetic hand movements provide optimal loading the muscles of the upper shoulder girdle [1, p. 94]. Raising and lowering the platform with the intensity equals to run at a speed of 12 km/h [1]. It is expedient to include on principle of «training» dosage in training classes, in connection with what is advisable consistent exercise mastering classical, dance, step aerobics to those, who involved [4; 6].	An absence of the individual approach to students. Depending on the level of students' preparedness (of coordination abilities) the loading changes. The regular and intensive shock loadings are a major cause of diseases of joints and spine [8], especially for the weak and untrained muscles. Technical errors during performing fundamental (basic) steps and violation of pedagogical principles of training process [9].
Health technology with the use of shaping	Helps reducing weight and improving body proportions, developing power and general endurance [10]. There is possibility of combining exercises of power and aerobic directions [1, p. 105; 6].	There is limitation in the directed development a number of physical qualities: flexibility, speed, coordination. Is not used in the prevention of diseases.
Health technology with the use of fitball aerobics	Contributes forming a muscular corset by strengthening back muscles and abdominal press, and also muscles of the upper and lower limbs, relieves the load on the spine, develops coordination, promotes training vestibular system, influences on the body metabolism. Promotes careful working of those muscle groups that cannot be trained during normal aerobic classes, conducting stretching all muscle groups [1, p. 96–97].	Does not develop general endurance and speed.
Health technology with the use of Pilates system	Helps to develop flexibility, coordination, strength endurance, is a way to prevent diseases of spine and joints, posture disorders [6].	Does not help reducing weight and body proportions correction, does not develop general endurance and speed.
Health technology with the use of callanetics	Contributes improving figures with an accent on the so-called problem areas (neck, abdomen, buttocks, thighs, back), remote internal muscles [11, p. 174]. Contributes developing of coordination, strengthening muscles using specially selected and organized static and dynamic exercises and stretching various muscle groups [1, p. 102].	There is limitation in the development of endurance, agility, speed. Movements are performed with a small amplitude, often in an uncomfortable position, at complete or semi-statics [1, p. 102].

End of Table 2

Health technology is with the use of fitness-yoga	Helps to develop flexibility, coordination abilities, strength endurance, to improve posture.	It is not the mean of weight loss and body correction. Does not allow to develop general endurance and speed, is traumatic to the spine and joints [8].
Health technology with the use of hula hoop	Helps to reduce body weight, improve the cardiovascular and respiratory systems, strengthens abdominal muscles, back, legs, arms, and improve posture.	It is not the mean of development speed and coordination skills.
Health technology with the use of fitness programs (athletics gymnastics, body-pump, bosu training, interval training, terra aerobics)	Contributes the directed forming of body proportions, different types of endurance, dynamic and static power, speed qualities, ability to switch quickly from one mode of training work to another [1, p. 98–100]. There is possibility of application in the prevention of diseases of the muscular-skeletal, cardiovascular and respiratory systems, posture disorders [2, p. 332; 6]. There is possibility of strict regulation of the amount and intensity of loading. Combination of various types of exercises is conducted as «training on a circle».	Does not help reducing weight, developing speed, flexibility, coordination, general endurance; requires the certain initial level of power and functional preparedness.
Health technology with the use of fitness programs with elements of martial arts (thaibo, kibo, capoeira)	Allows reducing weight and improving body proportions, developing coordination and speed-strength ability, flexibility, endurance. Contributes increasing emotional background.	There is quite high coordinating complication and traumatism of exercises. There are difficulties in dosage of loading on the heart rate. Is not used in the prevention of diseases.
Aerobic training of cyclic exercise (walking, jogging, swimming, ski training, exercises with cardio simulator)	Contributes to prevention of diseases of the respiratory system, increases energy metabolism, which results in the correction of risk factors for cardiovascular diseases (decline body weight, normalize blood pressure, reduce cholesterol) [1, p. 132–133]. There is possibility of account and dosage of loading on a volume and intensity [2].	Does not allow forming directionally the body proportion, developing physical qualities such as strength, coordination, flexibility, speed. Is not used in the prevention of diseases of muscular-skeletal system and disorders of posture.
Health technology with the use of breathing exercises (A. Strel'nikova, K.P. Buteyko, G. Childers, etc.)	Contributes to the normalization of the respiratory and cardiovascular systems. Activates the immune system and protective properties of organism, contributes overcoming stress, privation from nicotine dependence [3; 4].	It is not the mean of correcting the body structure, developing strength, flexibility, speed, coordination abilities.
Health technology with the use of moving elements of sport games	Fills the deficit of motive activity, promote functional possibilities of the muscular-skeletal system, assist development of leading physical qualities, increasing emotional background [2; 4; 12], allows forming the body proportions.	There are significant difficulties in dosage of loading on the heart rate, does not eliminate brief tension and sharp switching [4]. Is contraindicated in certain disorders of the muscular-skeletal system, including functional disorders of the spine [4].

Deciding the task of the effectiveness of application of innovative health technologies in the universities' educational process, the research was organized during one semester, in which examined the effectiveness of health technologies with the use of the dosed health walking and running, respiratory gymnastics by A.N. Strel'nikova system, athletics gymnastics, Cooper classic aerobics, moving and sports games.

Students were parted on experimental groups (EG) – 3 groups (1 – men, 2 – women) of the I course students and so much groups of the II course students; on control groups (CG) – 4 groups (women and men) of students of I and II courses. Thus, it was formed 10 relatively homogeneous groups among students of I and II courses (6 experimental and 4 control). An author conducted classes with the men groups, two teachers of the department, which constantly work with this contingent of students, – with the women groups. Doctor of university first-aid post carried out medical assistance (by arrangement). The basis of the students' distribution in groups was their desire to be engaged in determined sport activity, nosology of diseases, the level of physical health, availability of specialists and material resources of the university and the organization of educational process in the first and second shift. Classes conducted twice a week for 90 minutes, students of the II course were engaged in time, taken the university educational curriculum; students of the I course – in time, free of classes. Between that, the I course students (both women and men), depending on the change of classes at the university, were invited attendance classes at a convenient time for them (on a concordance with teacher's curriculum). In CG classes were conducted on the standard program in physical education from passing basic types of sports and health-improving activities. Every class consisted of preparatory, basic and final parts; duration, content, scope and intensity of the physical activity in preparatory and final parts should be the same for all experimental and control groups, which take part in the experiments; the experimental programs join only in basic part of the class, the calculation of volume and intensity of the physical activity in every group submitted the unique requirements.

During the experiment the necessary monitoring after the functional reactions of the cardio and respiratory systems on loading was carried out, because it is possible to find out rejections from the cardiovascular system, which were not found out during a medical review from the beginning of the school year. The similar proper reactions of organism required an additional medical inspection. According to the scientists' experience [1; 2; 10], classes is allowed only at the proper functional tests of the cardio and respiratory systems after some infectious diseases.

In this case, all changes of functional indexes were duplicated at university informative database of somatic health, which made possible not only operative control the physical health state, but also development of the individual differentiated educational programs, prediction the development of certain diseases and the future state of students' health.

The results of the research confirmed the data of other scientists that health technology with the use of application of tempering procedures can be used only, as a companion tool for teaching and training classes for students in special educational department. According to gender, such classes are identically effective both for men and for women [3].

The content of the current work program for the students in the special educational department does not provide theoretical and methodological control features. Therefore for the improvement of students' preparation the newest technologies of evaluation of theoretical knowledge, which helped to reduce the load on the student's psyche and the actual time for verification of students' theoretical preparedness on discipline «Physical Education», were implemented in an educational process.

We have developed a system of basic tests for current and final (semester) control, which was responsible for the content modules after semesters and years of study. 260 tests of the closed form for the 13 topics, accompanied by one instruction with their performance, were developed.

Progressive methods of innovative teaching require a transition exactly on electronic media. That's why computer programs of test control were built and implemented in the educational process. Creation of electronic catalogue of literature of athletic type was expedient at this stage for the informative providing of educational process. Educational literature, that is available in the Research Library of the University, was entered in the informative base, so students were able to find quickly answers to questions that interest them. A catalogue is placed on the department's website and included in the second version of the computer program of test control.

So, in EG, except for lectures and practical classes, the student's informative orientation due to the active use of variant component in the theoretical section of the program was carried out. Classes are focused on mastering of methods of determining their own physical condition, health, correction and improvement of organizational and educational activities of the teacher. Educational material was pre-

sented by co-operation of teacher and student and performed in a specialized course of lectures, discussions, debates, meetings devoted to the basics of healthy way of life. The electronic versions of lectures and presentations were created, methodical recommendations were produced. The effectiveness of assimilation of the amount of information by students in CG and EG was determined by the computer testing.

T-Student test was applied to determine the authenticity of the differences between the results in EG and CG. Statistical information of the conducted researches showed that for the students in EG higher performance is discovered, significantly (at $p<0,05$) differs from the indexes of students in CG. Testing revealed a significantly higher number of positive answers to the questions for the students in EG, than for the students in KG. That fact led to the conclusion that the use of informative facilities helps to absorb the amount of information more efficiently. The results of the research indicate that the use of theoretical course enhances the educational focus of physical culture, informs students about health, and forms conviction in the necessity of systematic athletic and health improving classes.

Conclusion. As a result of the conducted research we can conclude that today there a lot of health technologies, with the use of which is possible to diversify the process of physical education of students in special educational department in accordance with the interests of the young generation, but they do not fit into the educational space of modern educational establishment, have common approaches without differentiation of educational material, do not contribute to solving complex health problems on condition of action of a number of factors.

1. Traditional health technologies do not solve the problem of a comprehensive physical development because of the absence of the adequate intensity of physical activity.

2. Insufficient level of students' theoretical knowledge.

3. Low level of providing of methodical preparation.

4. Incentives are not used for active participation of full-time students in different forms of specially organized physical activity.

5. The students' motivational sphere is not taken into account.

6. Low level of physical health and general physical preparedness of students.

7. Underestimating the problems of the use of health technologies in physical education by the teachers of physical education, who do not implement innovative technologies, work after an old method based on the normative approach.

L I T E R A T U R E

1. Физкультурно-оздоровительные технологии формирования фитнес-культуры студентов: учеб. пособие / под ред. Ю.А. Усачева. – Киев: Издательство «Логос», 2015. – 200 с.
2. Присяжнюк, С.І. Фізичне виховання: навч. пос. / С.І. Присяжнюк. – К.: Центр учбової літератури, 2008. – 504 с.
3. Кондаков, В.Л. Системные механизмы конструирования физкультурно-оздоровительных технологий в образовательном пространстве современного вуза: монография / В.Л. Кондаков. – Белгород, 2013. – 454 с.
4. Румба, О.Г. Система педагогического регулирования двигательной активности студентов специальных медицинских групп: автореф. дис. … докт. пед. наук / О.Г. Румба. – СПб., 2011. – 51 с.
5. Степанова, О.Н. Современные системы физкультурно-оздоровительных занятий со студентками специальных медицинских групп, их преимущества и недостатки / О.Н. Степанова, Е.А. Осокина, С.В. Савин, О.В. Бордулина // Вестн. МГОУ. Сер., Педагогика. – 2014. – № 2. – С. 136–141.
6. Deobald, N.V. Development of modern health technologies and integrated program improvement / N.V. Deobald // Вектор науки ТГУ. – 2010. – № 2(2). – С. 36–38.
7. Light, K. Cardiovascular responses to stress: a relationships to aerobic exercise patterns / K. Light, P. Obrist, S. James // Psychophysiology. – 1987. – Vol. 24, № 1. – P. 79–86.
8. Беликова, Ж.А. Упражнения хатха-йоги как средство коррекции деформации позвоночника студентов специальных медицинских групп с нарушениями осанки: автореф. дис. … канд. пед. наук: 13.00.04 / Ж.А. Беликова. – Белгород, 2012. – 23 с.
9. Жерносек, А.М. Технология применения занятий степ-аэробикой в оздоровительной тренировке: автореф. дис. ... канд. пед. наук: 13.00.04 / А.М. Жерносек. – М., 2007. – 24 с.
10. Венгерова, Н.Н. Физкультурно-оздоровительные технологии для студенток высшей школы: монография / Н.Н. Венгерова. – СПб., 2011. – 216 с.
11. Піліпей, Л.П. Професійно-прикладна фізична підготовка студентів: монографія / Л.П. Піліпей. – Суми: ДВНЗ «УАБС НБУ», 2009. – 312 с.
12. Ковалева, М.В. Применение подвижных и элементов спортивных игр на занятиях со студентками с ограниченными возможностями сердечно-сосудистой системы: монография / М.В. Ковалева, О.Г. Румба. – Белгород, 2012. – 170 с.

R E F E R E N C E S

1. Sport and health technologies of formation of students' fitness culture: Textbook / Ed. Yu Usachev. – Kiev: «Logos» Publishing House, 2015. – 200 p.
2. Prysyazhnyuk S.I. Fizichne vihovannya: navch. pos. / S.I. Prysyazhnyuk. – K: Center uchbovoї literaturi, 2008. – 504 p.
3. Kondakov V.L. Sistemnyie mehanizmyi konstruirovaniya fizkulturno-ozdorovitelnyih tehnologiy v obrazovatelnom prostranstve sovremennogo vuza: monografiya (System design mechanisms of health and fitness technologies in the educational space of the modern university: monograph) / V.L. Kondakov. – Belgorod, 2013. – 454 s.
4. Rumba O.G. Sistema pedagogicheskogo regulirovaniya dvigatelnoy aktivnosti studentov spetsialnyih meditsinskih grupp (System of pedagogical regulation of motor activity of students of special medical groups): avtoref. dis. … dokt. ped. nauk. – SPb., 2011. – 51 s.
5. Stepanova O.N. Sovremennyie sistemyi fizkulturno-ozdorovitelnyih zanyatiy so studentkami spetsialnyih meditsinskih grupp, ih preimuschestva i nedostatki (Modern systems of health and fitness classes with students of special medical groups, their advantages and disadvantages) / O.N. Stepanova, E.A. Osokina,

S.V. Savin, O.V. Bordulina // Vestnik MGOU. Ser. «Pedagogika», 2014. – № 2. – S. 136–141.
6. Deobald N.V. Development of modern health technologies and integrated program improvement / N.V. Deobald // Science Vektor of TSU. – № 2(2), 2010. – C. 36–38.
7. Light K. Cardiovascular responses to stress: a relationships to aerobic exercise patterns / K. Light, P. Obrist, S. James // Psycho-physiology. 1987. – Vol. 24. – № 1. – P. 79–86.
8. Belikova Zh. A. Uprazhneniya hatha-yogi kak sredstvo korrektsii deformatsii pozvonochnika studentov spetsialnyih meditsinskih grupp s narusheniyami osanki (The exercises of hatha yoga as a means of correction of the deformity of the spine of students of special medical groups with impaired posture). Avtoref. dis. ... kand. ped. nauk: 13.00.04. – Belgorod, 2012. – 23 s.
9. Zhernosek A.M. Tehnologiya primeneniya zanyatiy step-aerobikoy v ozdorovitelnoy trenirovke (The technology application classes in step aerobics fitness training): Avtoref. dis. ... kand. ped. nauk: 13.00.04. – M., 2007. – 24 s.
10. Vengerova N.N. Mesto sovremennyih ozdorovitelnyih tehnologiy v uchebnom protsesse po fizicheskoy kulture v vuze (Place modern health technologies in the educational process on physical training in high school) / N.N. Vengerova, I.V. Zaytsev // Fizicheskaya kultura i sport: proektirovanie, realizatsiya, effektivnost: Sb. mater. Vseros. nauchno-prakt. konf., posv. 70-letiyu A.A. Nesterova. – SPb., 2005. – S. 118–120.
11. Pilipey L.P. Profesiyno crafts fizichna pidgotovka studentiv: monograph / L.P. Pilipey. – Sumi: DVNZ «UABC NBU», 2009. – 312 s.
12. Kovaleva M.V. Primenenie podvizhnyih i elementov sportivnyih igr na zanyatiyah so studentkami s ogranichennyimi vozmozhnostyami serdechno-sosudistoy sistemyi: monografiya (The use of mobile elements and sports games in the classroom with students with disabilities the cardiovascular system: monograph) / M.V. Kovaleva, O.G. Rumba. – Belgorod, 2012. – 170 s.

Поступила в редакцию 04.10.2016
Адрес для корреспонденции: e-mail: kuz_lena@ukr.net – Кузнецова Е.Т.