

Original Article

Efficiency of using the teaching technology while developing healthy lifestyle skills in arts students

ZAVYDIVSKA NATALIA¹, HRIBOVSKA IRINA², IVANOCHKO VICTORIA³, SVYSTELNYK IRINA⁴,
RIPAK MARIANNA⁵

^{1,2,3,4,5} Lviv State University of Physical Culture, Lviv, UKRAINE

Published online: July 30, 2016

(Accepted for publication June 08 2016)

DOI:10.7752/jpes.2016.s1094

Abstract:

The article reveals the main aspects of healthy lifestyle skills development in college students doing the course of Arts. The authors have carried out the technology of development of healthy lifestyle skills in physical education of students majoring "Fine and Applied Arts." The aim was to prove the effectiveness of the technology of developing healthy lifestyle skills in students majoring "Fine and Applied Arts" by the following methods: theoretical analysis and synthesis of scientific and technical data found in library resources, sociological methods (survey); pedagogical monitoring; pedagogical testing, pedagogical experiment; medical and biological methods; expert assessment, and methods of mathematical and statistical data processing. The efficiency of the newly created technology has been proven by pedagogical experiment that was found out by improvement of morphological parameters in the experimental group of students: the level of physical health and functional status of the organism, the degree of adaptation and functional reserves of the organism, the positive dynamics in change of evaluation standards of physical fitness and improvement of the level of healthy lifestyle skills development. To determine the effectiveness of the technology of healthy lifestyle skills development and a proper integrative training course we have conducted an expert evaluation. The assessment of the consistency of expert opinion allowed to recognize the results credible, which was confirmed by corresponding concordance coefficient ($0,914 < W < 1$).

Keywords: technology, healthy lifestyle, arts students.

Introduction

Nowadays a person who is going to get high qualification can not be competitive unless he or she masters the mechanisms of preserving his or her own health considering the peculiarities of the chosen profession as such a specialist is not able to raise his or her performance level, and hence professional capacity [1]. One of the main weak spots of physical education in Arts universities is the prevalence of practical approach, where the most important is improving of students' physical properties only. Until recently, the dominant teaching technology has been one focusing more on direct impact on students than their learning to interact with the environment without any harm to their health. Today such approaches exhausted themselves; the system of physical education should help to further optimize the physical activity of students, but only through the activation of thought processes that require substantial training component with real influence on shaping of conscious attitude to the need for a healthy lifestyle. Graduating from universities, students of art specialties fall into a world undergoing rapid social, technological and cultural changes. Mastering the effective methods and mechanisms for maintaining health determine, in our opinion, the years of their healthy life and professional activity.

With this in mind, when elaborating an interdisciplinary course "Principles of a healthy lifestyle," we took into account the need to reorient education of physically fit students to the students intellectually focused on preserving their own health [2]. Analysis of the available technologies and teaching methods [3, 4] allowed to create the content in which different kinds of knowledge are the subject-oriented subjects developing the system behavior, healthy lifestyle throughout the lifespan of the students. The main purpose of the elaborated technology is the development of an individual responsible for the state of his/her health and aware that a healthy lifestyle is a prerequisite for active life. The essence of physical education process is students activity focused on acquiring knowledge, skills and healthy lifestyle habits.

Connection with academic programs, plans, themes. The work was performed under the Consolidated Plan of research topics in the field of physical education and sports of Ukraine according to the theme 3.9 "Improving of the scientific principles of sports for everybody, fitness and recreation" for 2011-2015. (State registration number - 0111U001735).

Method

The study was conducted at the Lviv Academy of Arts. It involved the first and second-year students of the specialty "Fine and Applied Arts" in total 93 people (80 girls and 13 boys). To fulfil the pedagogical monitoring the experimental and control groups of 45 people were randomly selected.

To achieve the objectives, the following methods: theoretical analysis and synthesis of scientific and technical data found in library resources, sociological methods (survey); pedagogical monitoring; pedagogical testing, pedagogical experiment; medical and biological methods (assessment of the physical condition, level of physical health, adaptive capacity and Skibinskij's index); expert assessment and methods of mathematical and statistical data processing.

The **aim** of the study was to determine the effectiveness of the elaborated technology of developing healthy lifestyle among students chosen the specialty "Fine and Applied Arts."

To achieve the objectives the following problems have been solved:

1. To elaborate the technology of developing healthy lifestyles during physical education experiences for students chosen the specialty "Fine and Applied Arts."
2. To determine experimentally the effectiveness of multidisciplinary curriculum to optimize the process of developing healthy lifestyle of Arts students.

Results

At the preliminary stage of the study due to our own teaching experience, thorough study of the curriculum for students of specialty "Fine and Applied Arts", and logic interdisciplinary connections we combined into a single course such disciplines as: "Safety of daily living", "Physical Education", "Principles of labor safety". The content of the integrative course "Principles of a healthy lifestyle" that was elaborated by us, which was presented in the scientific work [2], attention was exclusively paid to the thorough study of the topics which will determine the future of the students' way of life.

The main features of this course are: analytical point (analysis of all physiological processes in the body of students under the influence of exercise), perspective point (forecasting activities aimed at healthy lifestyles), developing point (development of professionally important motor and physical skills, and improvement of students' physical condition) and generalizing point (availability of developed healthy lifestyle skills, and positive attitude to health).

Evaluation of the introduction effectiveness of healthy lifestyle skills development educational technology into physical education of Arts students was carried out during the monitoring phase of the pedagogical experiment. Statistical and comparative analysis of quantitative and qualitative indices was conducted before and after the experiment and concerned the following research aspects:

- dynamics of such morphological parameters as fitness level of Arts students (FL), which is an indicator of their physical health level (PHL); the adaptive capacity level (ACL); Skibinskij's index (SI) before and after the experiment;
- evaluation of students' physical fitness before and after the experiment;
- students' self-esteem of developed healthy lifestyle skills level, and physical education knowledge;
- expert forecasting and evaluation of the developed healthy lifestyle technology, and proper integrative curriculum according to the outcomes of its implementation into the process of physical education of Arts students. The dynamics of morphological parameters (fitness level, adaptive capacity level, and Skibinskij's index) in control and experimental groups of students during the monitoring phase of pedagogical experiment is presented in Table. 1.

Table 1. Analysis of morphological parameters of Arts students (conv. un.)

Groups	Before/after	Value	Morphological and functional indices		
			FL	ACL	SI
Control group (n=45)	Before experiment	\bar{X}	0.53	2.75	23.8
		S	0.03	0.04	3.2
		average error	0.01	0.03	1.2
	After experiment	\bar{X}	0.54	2.65	24.1
		S	0.03	0.04	2.7
		average error	0.01	0.03	1.2
Experimental group (n=45)	Before experiment	\bar{X}	0.55	2.7	21.7
		S	2.1	0.03	2.5
		average error	0.5	0.01	1.5
	After experiment	\bar{X}	0.79	2.58	34.8
		S	2.1	0.02	3.1
		average error	0.5	0.01	1.5

Note. The difference is statistically significant at $p < 0$.

In the experimental group students have shown positive changes in indices of their physical condition, while students in the control group haven't shown such changes. Before the experiment the average value of this index in the experimental group was 0.55 ± 0.5 conventional units (conv. un.) or (55%) that belongs to the range of average values in estimation scorecard. After the experiment the indices of the physical condition of students in this group increased to 0.79 ± 0.5 conv. un. (79%), indicating that it is higher than average.

Analysis of indices of functional changes parameters, which reflects the level of adaptive capacity, points to the fact of stress adaptation mechanisms of the students in the control and experimental groups before the experiment (2.75 ± 0.03 and 2.7 ± 0.01 conv. un. respectively). After the experiment, the level of adaptive capacity of the students in the control group remained unchanged (2.65 ± 0.03 conv. un.), but the experimental group demonstrated positive changes in adaptive capacity, which totaled 2.58 ± 0.01 conv. un., indicating a satisfactory level of adaptation.

Skibinskij's index, which indicates the level of functional capacity, remained unchanged in the control group of students: before the experiment the data of this indicator were 23.8 ± 1.2 conv. un.; after the experiment - 24.1 ± 1.2 conv. un. As you can see, the level of functional capacity in a control group of students during the school year has not changed and remained satisfactory as it was before. Instead, in the experimental group of students Skibinskij's index was 21.7 ± 1.5 conv. un. at the beginning of the experiment, indicating a satisfactory level of functional capacity. According the data obtained after the experiment (34.8 ± 1.5 conv. un.), we can point out that the level of students in the experimental group meets the mark "good".

To identify the relationship or differences between the studied parameters before and after the experiment and determine their relevance to the general totality, that is to confirm the reliability of the data on physical health (fitness level), level of adaptive capacity and Skibinskij's index we determined a statistical criteria ($|z_{em}|$). Having calculated the indices of physical condition, we found a statistical criterion shifts in the experimental group from 0.47 to 0.89 conv. un., that is 0.42 conv. un. more, which is an evidence of greater activity of students during the process of their physical self-improvement. It is well known that improvement of physical health indices is a long-term process, and therefore the increase of the statistical criterion is an important factor for the general totality. According to the control group data the statistical criterion was 0, 58 conv. un., which indicates that the amount of physical activity in this group of students has not changed after the experiment.

After the proper calculation of the adaptive potential level values of students in the control group, we have obtained the value of statistical criterion at 1.87 conv. un., which is less than 2.4 conv. un. (critical value), and this is an evidence of minor changes. The statistical index in the experimental group is 5.9 conv. un. at the critical value - 1.98 conv. un., that confirms the authenticity of the increase in students of experimental group after the experiment.

According to the statistic index, which we calculated using an average values of Skibinskij's index in the control group of students ($|z_{em}| = 0,74 < 1,87 = z_{kp}$), we could with a probability of 0.95% recognize the coincidence of the data, that is the data before and after the experiment were not significantly different. Instead, in the experimental group, with a probability of 0.95%, we could say about a significant difference and increase in the average values of the Skibinskij's index after the experiment, because the obtained index is ($|z_{em}| = 4,69 < 1,87 = z_{kp}$).

The level of physical fitness of students was determined on the basis of a comparative analysis of standards according to the "Physical Education" curriculum. Estimation was carried out according to the control standards scorecard included into the syllabus at the beginning and after the experiment. The results of our calculations indicate that at the significance level ($p < 0.05$) revealed the increase of physical fitness indices of students in the experimental group after the experiment.

Thus, the average standards indices at the beginning of the experiment among the students in the experimental group showed their lower than average level of physical fitness and meet the mark "satisfactory": standing long jump - 1.6 ± 0.02 (m); push ups (lying position)- 15 ± 1.1 (times); push ups (sitting position) - 37 ± 0.5 (times); skipping - 131 ± 1.1 ; shuttle run - 11.02 ± 0.1 (sec.). After the experiment, the level of physical fitness of students of this group was above average and reached mark "good": standing long jump - 1.8 ± 0.02 (m); push ups (lying position) - 20 ± 1.1 (times); push ups (sitting position) - 41 ± 0.5 (times); skipping - 150 ± 1.1 ; shuttle run - $10,57 \pm 0.1$ (sec.). Instead, there was virtually no change in the students of control group.

To determine the level of the students' healthy lifestyle data we carried out the monitoring using our questionnaire which consisted of five blocks of questions. The level of developing of healthy lifestyle (high, medium, low) dealt with the following components: epistemological, cognitive and intellectual, motivational, profession-oriented, communicative and cultural. The analysis results are presented in table. 2.

Having calculated averages, we can state that a high level of the developing of healthy lifestyle skills in the experimental group before the experiment was observed in 17.9% of students; medium - in 22.02% of

students; low - 60.08% of students. After the experiment, 52.88% of students exposed high level; 36.24% - medium, and 10.88% - low level of healthy lifestyle skills.

Table 2

The levels of developing healthy lifestyle skills found among the students after the experiment (in %)

Groups	Before/after	Level	Components				
			Epistemological	Cognitive and intellectual	Profession-oriented	Motivational	Communicative and cultural
CG (n=45)	before experiment	high	25.7	9.1	10.8	12.7	27.8
		medium	26.3	15.3	25.7	21.4	34.1
		low	48.0	75.6	63.5	65.9	38.1
	after experiment	high	25.9	9.0	10.7	18.1	28.2
		medium	27.2	15.1	25.3	29.3	35.6
		low	46.9	75.9	64.0	52.6	36.2
EG (n=45)	before experiment	high	25.9	9.9	11.8	13.8	28.1
		medium	27.9	5.7	24.7	20.4	31.4
		low	46.2	84.4	63.5	65.8	40.5
	after experiment	high	56.9	51.8	44.1	65.5	46.1
		medium	35.1	31.2	40.2	31.8	42.9
		low	8.0	22.7	15.7	2.7	5.3

In the control group before the experiment a high level of the developing of healthy lifestyle skills were observed in 17.22% of students; medium – in 24.56% of students; low – in 58.22% of students. After the experiment 18.38% of students had a high level; 26.5% of students – medium, and 55.12% of students demonstrated low level. It should be noted that after the experiment the number of students in experimental group who indicated a high level of development of their healthy lifestyle skills was at 34.98% higher, while in the number of those ones in control group increased only by 1.16%.

As you can see, all the components that characterize healthy lifestyle skills according to the self-rating of students in the experimental group are higher than in the control group of students. Factor analysis allows to note that in the first place there was a motivational component (65.5%), the second place belonged to an epistemological one (56.9%), the third position was taken by a cognitive and intellectual component (51.8%), the fourth – by a communicative and cultural (46.1%), and the last position – by profession-oriented component (44.1%).

Verification of the data was carried out due to nonparametric methods of statistical and probabilistic analysis. The obtained calculations of Student's t-test (high level - 4.98 > 2.1, medium level - 4.87 > 2.1, low level - 4.72 > 2.1) confirm the presence of qualitative differences in the level of developing of healthy lifestyle skills among students in the control and experimental groups after the experiment at 95% confidence level. Positive changes occurred at every index in the experimental group of students, while students in the control group didn't show such changes after the experiment.

To determine the effectiveness of the technology of the developing healthy lifestyle skills, we have elaborated, and to estimate an integrative training course, an expert evaluation was conducted. Lecturers, teachers, instructors and heads of departments of physical education of Lviv high educational institutions were engaged in the process of expert evaluation. Among them there were 5 professors and 2 lecturers. Their scientific and pedagogical activity experience was at least 5 years and was in total from 6 to 20 years. Estimation of the experts' opinion consistency was determined by Kendal concordance coefficient.

The estimation of the consistency of the experts' opinion allowed to recognize the results as credible ones, which was confirmed by corresponding concordance coefficient (0,914 < W < 1). The generalized experts' opinion obtained due to processing of questionnaires was accepted as a rational solution. The results of the experts' estimation of the technology of the developing healthy lifestyle skills for students of specialty "Fine and Applied Art" are presented in table 3.

According to the findings, the experts found a high level of efficiency of the elaborated healthy lifestyle technology, which is within 4.4 - 5 points that confirms the feasibility of the newly created technology and newly established interdisciplinary curriculum, and helps to optimize Arts students' healthy activity.

Discussion.

The research [5, 6, 7] confirmed that the developing healthy lifestyle skills among university students of different professional direction is determined by a system of physical education depending on the characteristics of students' future careers. On the one hand, healthy lifestyle learning process contributes to the improvement of physical education of students, and on the other hand it requires updating "Physical Education" discipline content.

Psychological and physiological characteristics of people engaged in Arts, in today's conditions, require a special approach to training process of perspective specialists considering their attitude to healthy lifestyle [2]. Arts students are endowed with certain artistic inclinations and the whole system of physical education should promote their abilities. The complexity of the process of developing healthy lifestyle skills is complicated by the fact that the inclinations and abilities of each student, and his personality have an impact on his/her life and require special learning technologies used for physical education.

Table 3. Expert estimation of the effectiveness of the developing healthy lifestyle skills technology

Characteristics	Estimation (points)
Accordance of the technology of developing healthy lifestyle skills with the "Physical Education" syllabus content	5
Feasibility of organizational and pedagogical conditions for lessons	4.4
Reality of the leading role of the valeology concept of students' physical fitness	4.9
Specific types of teaching methods in physical education	4.6
Consistency of interdisciplinary links in the content of the course "Principles of a healthy lifestyle"	4.8
Complete realization of forms, methods, and means of physical education; consistency of the developing healthy lifestyle skills stages	5
Consistency of the teaching technology content with the specific character of Arts students' future profession	5
Achievement of the main goal – optimization of healthy activity	4.8
Reality of expected outcomes – improvement of the developing healthy lifestyle skills level	4.6

The developing of healthy lifestyle skills among Arts students should increase motivation and create the most comfortable atmosphere for creative productive work: the ability to adjust their behavior according to the requirements of partners and constantly changing environmental conditions; the ability to express and develop their own vision, to prove his/her point of view and attitude to this problem, the ability to understand and evaluate their own performance and actions of others. The active defense of the opinions, analysis and ability to solve problems develop creative thinking, imagination, initiative, formed an individual [4].

However, the analysis and synthesis of the library resources convinced that the psychological and physiological characteristics of artists, the specificity of their professional activity and working conditions have an impact on the developing of healthy lifestyle skills among students of specialty "Fine and Applied Arts" [4, 8].

Meanwhile, the physical education for Arts students has no unified technology of training considering healthy lifestyle, which greatly complicates the process of the developing healthy lifestyle skills during physical education lessons. The poor health of young people, the need for the developing of healthy lifestyle skills through Arts knowledge on the one hand and the lack of such technology on the other hand have met the need for research in the field of physical education.

On the basis of current trends and innovations in physical education [9, 10, 11], the technology of healthy lifestyle was elaborated. It creates a system that foresees, not only the use of physical training means, but also the process of personal skills improving, physical development and fitness, psychological and physiological capacity through forming beliefs in the necessity of a permanent physical improvement. The technology of healthy lifestyle reflects and takes into account the specific professional activity of Arts students, their individual characteristics and many other factors [2].

The application efficiency of the technology was confirmed during the pedagogical experiment that demonstrated the increase of the morphological parameters in the experimental group of students: the level of physical health and functional status of the organism, the degree of adaptation (index of functional changes), and functional reserves of the organism (Skibinskij's index), the positive dynamics in standards of physical fitness and the level of the developing healthy lifestyle skills.

Statistical and probabilistic analysis of the numerical values confirmed the efficiency of the developed technology of the developing healthy lifestyle skills among Arts students.

Conclusions

1. The developing of healthy lifestyle skills technology for students of specialty "Fine and Applied Arts" is a structured pattern of forming their attitude to sports and recreation activities considering the profession of an artist.

2. In the experimental group students have been positive changes in morphological parameters, namely: the physical fitness to 0.79 ± 0.5 conv. un. (or 79%); adaptive capacity to 2.58 ± 0.01 conv. un., which indicates a satisfactory level of students' adaptation; Skibinskij's index, which has improved to 34.8 ± 1.5 conv. un., which corresponds to the mark "good".

3. The level of physical fitness of students in the experimental group after the experiment was higher than average, which was improved to the mark "good". In particular, the individual indices were: standing long jump - 1.8 ± 0.02 (m); push ups (lying position) - 20 ± 1.1 (times); push ups (sitting position) - 41 ± 0.5 (times);

skipping – 150 ± 1.1 ; shuttle run - $10,57 \pm 0.1$ (sec.). Instead, there was virtually no change in the students' indices of the control group.

4. According to the experimental group students' self-rating, the number of those who found their level of the developing healthy lifestyle skills as high rose from 17.9 to 52.88% of individuals.

5. The expert estimation revealed a high level of efficiency of the elaborated healthy lifestyle technology, which is within 4.4 - 5 points. The estimation of the experts' opinion consistency allowed to recognize the results credible, which confirmed the appropriate rate of concordance ($0,914 < W < 1$).

Acknowledgments

We thank to the Heads of the Department of Physical Education of the Ukrainian Academy of Printing, Lviv; Lviv I. Franko National University, National University "Lviv Polytechnic" who participated in the expert estimation of the developing healthy lifestyle technology.

References

1. Hrymblat S. O. Zdorov'esberehayushchye tekhnolohyy v podhotovke spetsyalystov : ucheb.-metod. posobyе / S. Hrymblat, V. Zaytsev, S. Kramskoy. – Khar'kov : Kollehyum, 2005. – 184 s.
2. Organizational conditions of healthy lifestyle promotion for arts students. / Hribovska Iryna, Danylevych Myroslava, Shchur Lydia // Journal of Physical Education and Sport. Vol. 15 (3), Art. 34. P. 218 – 224.
3. Dymova L. L. Osnovnye napravlenyya nauchnykh yssledovanyy v oblasti ynformatyzatsyy fizkul'turnoho obrazovanyya / A. L. Dymova // Uchenye zapysky YYO RAO. – M., 2007. – Vyp. 26. – S. 3–9.
4. Zavydivs'ka N. N. Teoretyko-metodychni zasady fundamentalizatsiyi fizkul'turno-ozdorovchoyi osvity studentiv u protsesi zdorov'yazberezhual'noho navchannya: dys. na zdob. nauk. stup. dok. ped. nauk : spetsial'nist' 13.00.02 – teoriya i metodyka navchannya (fizychna kul'tura, osnovy zdorov'ya) / Nataliya Nazariivna Zavydivs'ka / Natsional'nyy pedahohichnyy univertsytet imeni M. P. Drahomanova: – Kyiv, 2013 – 509 s.
5. Zavydivska N. Innovative mechanisms of improvement of student's physical education system on the basis of interdisciplinary connections / Natalia N. Zavydivska, Olga V. Rymar, Halyna H. Malanchuk // Journal of Physical Education and Sport (JPES), 2015 - Vol.15(4), Art. 116, R. 758-764.
6. Sirenko R. Teoretychna pidhotovka studentiv z navchal'noyi dystsypliny «Fizychno vykhovannya» / Romana Sirenko // Moloda sportyvna nauka Ukrayiny : zb. nauk. pr. z haluzi fiz. kul'tury ta sportu. – L., 2008. – Vyp. 12, t. 2. – S. 187 – 190.
7. Structure and content of the educational technology of managing students healthy lifestyle / Bolotin Alexander, Bakayev Vladislav // Journal of Physical Education and Sport. Vol. 15 (3), Art. 54. P. 362–364.
8. Understanding older individuals' emotional responses to new technology associated with healthy lifestyle choice / Kyungo Kim, Wojtek Chodzko-Zayko, Andiara Schwingel, Deana C Mcdonagh // Journal of Physical Education and Sport. Vol. 14 (2), Art. 22. P. 138 – 147.
9. Aks'onova O. P. Interaktyvni formy diyal'nosti uchniv na urokakh fizychnoyi kul'tury / Olena Petrivna Aks'onova // Fizychno vykhovannya v shkoli. – 2007. – № 5/6. – S. 35–37.
10. Alabuzhev A. E. Novye ynformatsyonnye tekhnolohyy v podhotovke spetsyalystov po fizycheskoy kul'ture y sportu / A. E. Alabuzhev / Sovremennyye ynformatsyonnye tekhnolohyy v fizycheskoy kul'ture y sporte : materyaly Mezhdunar. nauch.-prak. konf. / pod obshch. red. prof. P. K. Petrova. – Yzhevsk : Udmurt-skiy univertsytet, 2001. – S. 14 – 17.
11. Karplyuk S. O. Dosvid Ryvina-Dyachenka u proektuvanni metodyky vzayemonavchannya / S. O. Karplyuk // Visnyk Zhytomyr'skoho derzhavnogo univertsytetu. Seriya: Pedahohichni nauky. – Zhytomyr, 2009. – Vyp. 43. – S. 121 – 125.