

Pedagogical online technology to increase the level of students' conscious attitude to physical and mental health

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Abstract:

In the field of physical culture and sports, pedagogical community uses modern digital technologies in order to form students' conscious attitude to their health. *Purpose:* to evaluate the effectiveness of using the developed online course to form students' conscious attitude to their physical and mental health. *Materials and methods.* 1830 students of three Russian universities were examined with the help of content analysis. The course program is based on the integral method and contains a psychological component aimed at increasing young people's conscious motivation to follow a healthy lifestyle. A practical component aimed at mastering the skills of psychophysical training for the harmonization of the body's morphofunctional systems and a reflexive component - for the analysis of the results of the work done. *Results.* As a result of the content analysis of the final essays, 7 categories of conscious attitude to health were identified. Almost all the categories of content analysis noted by students have a positive trend (improvement, strengthening, promotion, etc.), negative - only 1 category of «poor health». All the selected linguistic units indicate a high level of reflection in the analysis of students' actions after completing the online course, increasing awareness of their physical and mental health and the importance of motor activity in their lives. *Conclusions.* We believe that such online technologies of forming a person's conscious attitude to his/her physical and mental health can be used to develop health-saving competencies in other population groups

Key Words: physical health, mental health, online course, lifestyle, motor activity.

Introduction

Over the past 20 years, the education sector in many countries has been undergoing a significant transformation due to globalization, internationalization and the digital revolution. Public and personal space digitalization is due to the creation of «global industrial networks using artificial intelligence (AI), widespread use of the Internet of Things (Internet of things), development of social networks, various platforms and services in the digital environment of the Internet» (Donnelly et al., 2013).

In connection with the COVID-19 pandemic, the digital revolution has proposed technologies for using online learning in pedagogical practice (Almonacid Fierro, 2021). Compliance with the protocol for the prevention of this viral disease spread led to physical education and sports facilities closure (Adedoyin, & Soykan, 2020), which reduced the human motor regime (Harrison et al., 2021). In this regard, the use of online courses of motor activity among the population has become relevant (Sadarangani et al., 2021).

The analysis of scientific literature data for recent years convincingly testifies to the deterioration of young people's physical, somatic and mental health in many countries (Santana et al., 2017; Yang, Dong, 2017; Glazkova et al., 2020; Taneva, 2020). A significant part of students have symptoms from the cardiovascular, central nervous systems, low mental and physical performance (Guryanov et al., 2022; Popovych et al., 2022). Deviations in the metabolic metabolism of the body are often noted, which leads to excessive body weight, obesity or body weight deficiency (Syamsudin et al., 2021; Kolokoltsev et al., 2021).

Distance learning forms have entered the life of every listener of various educational programs and seminars as an integral part of life. In recent years, digital pedagogical technologies have been widely used in educational institutions in the process of teaching the discipline «Physical Culture and Sport» (Hrehorowicz, 2021; Korolkov, 2020), as well as for high-stakes testing of knowledge, skills and abilities (Acar, & Eler, 2019). The transition to the use of distance learning in the field of physical culture and sports has some difficulties (Almonacid-Fierro et al., 2021; David, & Daum 2021; Gonzalez-Calvo et al., 2022; Mocanu, 2021; Sokolovskaia, & Nezhkina, 2021). This is often due to the low level of teachers' digital knowledge and insufficient use of modern ICT methods in the educational process (Bezcopylnyi et al., 2020) and other reasons.

Of course, online learning has its advantages. This is a range of distance courses, a large audience of participants, the opportunity to study anywhere and at a convenient time, the learning process is accessible to people with disabilities, and more (Leibovsky et al., 2021). These advantages make it possible to overcome the temporal and spatial limitations of the traditional educational environment (Hartnett, 2011). At the same time, online learning cannot replace the atmosphere of an academic environment of communication between a teacher and a student. In the field of physical culture and sports, devices such as heart rate monitors, heart rate monitors, trackers, pedometers, electronic simulation games and other wearable remote devices help in online training (Hirsh, 2018).

The condition for the online training effectiveness in the physical culture and sports sphere is a high level of students' motivation to overcome physical inactivity and meet the needs for the autonomy of classes (Panferov et al., 2020). The online learning format creates conditions for a person to individualize motivated physical activity and actualize a conscious attitude to their physical and mental health (Korolkov & Shevyakova, 2020). We believe that distance learning of different population groups in the field of physical culture and sports is relevant and in demand for the preservation of physical and mental health.

Purpose is to evaluate the effectiveness of using the developed online course to form students' conscious attitude to their physical and mental health.

Material & methods

The research project was carried out in the autumn semester of the 2021-2022 academic year in which 1830 students of three universities of Russia participated. The written consent of the project participants does not violate the ethical principles of the Helsinki Declaration of 2003.

The author's distance course «Psychological aspects of physical education and a healthy lifestyle» (72 hours) was developed as a technology for educating students' conscious attitude to their mental and physical health. The topic of online learning proposed by us forms a person's motivation for regular self-study of motor activity with moderate intensity for at least 150 minutes a week, creates prerequisites for a reflexive attitude to their actions and deeds through the use of psychological tools and electronic devices for monitoring the functional state of the body.

The uniqueness of the online course program development is the use of an integral method and integrated learning technology. There are three basic composition components in the program. The psychological component is aimed at self-awareness, understanding of the mechanisms of psychophysical work of internal organs and systems of the body (Sokolovskaya, & Nezhkina, 2021). This component contains lecture material on the psychological and physiological foundations of a healthy lifestyle, as well as personalized diagnostics of the current state of one's life various aspects: intellectual and moral improvement, the level of health and career, material and social status.

The practical component is presented as a complex of independent physical activity classes, performing physical exercises in various modes of muscle work, a session of psychophysical self-regulation and keeping a diary of self-control of the physical and mental state of the body using electronic devices. The third component of the integral method is reflection - students write a final essay about the changes that have occurred in their physical and mental state after studying the online course.

The applied value of the online course consists in using the author's method of a person's psychophysical training, allowing training the skills of physical and mental state of the body self-regulation (Nezhkina et al., 2021).

All practical classes of the course are carried out in stages. At the first stage, it is proposed to perform dynamic aerobic physical exercises activating functioning of the sympathetic department of the autonomic nervous system, the cerebral cortex, organs of the cardiorespiratory system and affect the musculoskeletal system. At the second stage, physical exercises of a statistical nature, developing the ability to enter a state of rest, attention concentration on the internal state of the body are used.

At the final stage of each practical lesson, an online session of verbal support from the teacher was conducted for psychophysical self-regulation and the development of the individual's motivated self-suggestion about the good state of personal physical, somatic, mental health and improving the level of mood and well-being. To control the online course effectiveness, we used the method of content analysis of the final essay by predefined categories and linguistic units, Table.

Table. Matrix of essay content analysis

№	Content analysis category	Language unit of content
1.	Improvement of mental state	1) «The mental state has changed for the better» 2) «Irritation, short temper, anxiety are gone» 3) «The indicators of the nervous system have improved, anxiety has gone away» 4) «Became more calm, peaceful»
2.	Improvement of physical condition	5) «Physical well-being improved» 6) «The psychophysical/physical condition of the body has improved» 7) «Felt healthier» 8) «Stopped feeling painful manifestations»
3.	Improving the level of performance	9) «Increased efficiency» 10) «Life has become more intense» 11) «I began to feel a surge of energy» 12) «Felt physically vigorous and refreshed»
4.	Enjoying the process of physical exercise	13) «Got used to regular training sessions» 14) «I began to like physical activity» 15) «I began to feel a sense of pride and joy after sports training» 16) «Decided to continue to engage in regular physical activity»
5.	Personal development	17) «Developed own business qualities» 18) «Increased concentration, readiness, attention» 19) «I began to feel more confident» 20) «I was able to get to know myself better, I learned a lot»
6.	Improvement of mood, emotions	21) «The mood has improved» 22) «Good mood has become regular» 23) «There are more positive emotions: joy, emotional release, unloading» 24) «Got rid of sadness»
7.	Absence / negative impact of an online course on the physical or mental state of students	25) «My mood didn't change/deteriorate during the training lesson» 26) «My physical well-being has not changed/worsened» 27) «My mental state has not changed/worsened» 28) «Health indicators have deteriorated»

The presence of each language unit in the final essay was assessed at 1 point, the absence – 0 points. Then the essays were divided into groups: 1) containing linguistic units; 2) having text, but not containing selected linguistic units; 3) meaningless and the percentage distribution of the significance of the categories of content analysis was calculated.

Results

It was found that out of 1,830 essays of students, 1,417 (77.4%) contain linguistic units, 413 papers (22.6%) do not contain, of which 370 (20.2%) essays have a text, but do not contain linguistic units, i.e. the essay texts do not reflect the students' reflexive, conscious attitude neither to the task, nor to your health. 43 papers (2.4%) have no content, which also indicates the lack of students' conscious attitude to their health and physical activity, Figure 1.

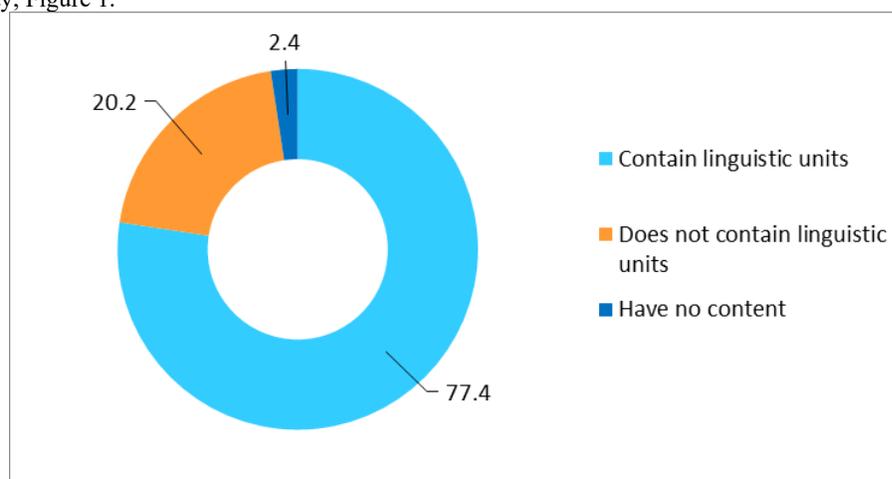


Fig. 1. Number of essays in the total sample, %

For subsequent analysis, only works containing linguistic units of content analysis noted by students were taken. Calculations of the frequency of mentions of categories were carried out using the MC Excel

program and the significance (in %) of each category of content analysis for students who completed an online course was determined, Figure 2.

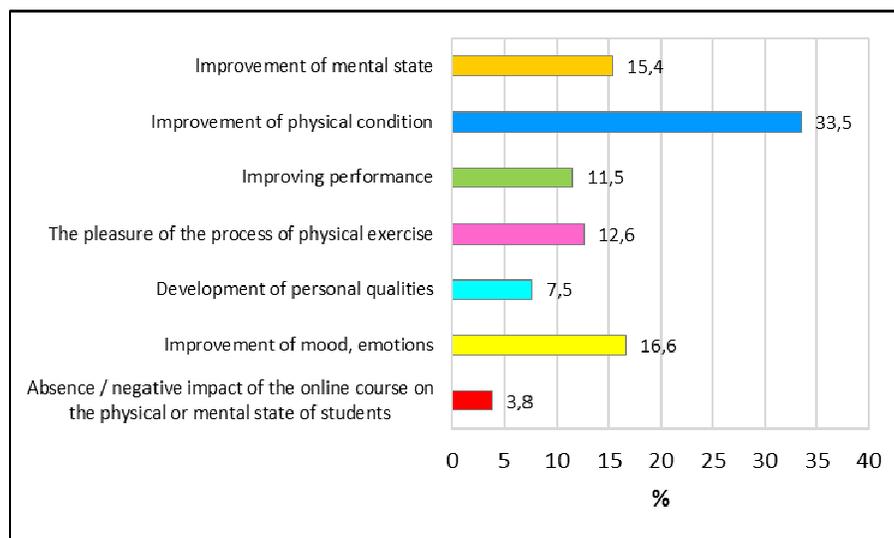


Fig. 2. Students' essays distribution by categories of content analysis

The maximum number (33.5%) of linguistic units' mentions in the students' final essay was registered in category №2 «Improvement of physical condition». Reflection of their condition manifested itself not only in the fact that the students recorded the absence of pain of various orders (muscle, headache, back pain), but also described the improvement of physical well-being. The second place in importance is occupied by category #. 6 «Improvement of mood, emotions» (16.6%), the third №.1 – «Improvement of mental state» (15.4%), which also indicates students' reflexive conscious attitude to the assessment of their condition, their actions after completing the online course, a positive impact over their mental health. At the same time, all participants of the project positively noted the role of motor activity in maintaining physical and mental health and improving the quality of life.

The minimum number of points (3.8%) was scored by category №.7 «Absence / negative impact of an online course on the physical or mental state of students», which also indicates a conscious attitude of young people to their mental and physical health. In order to leave the answers in this category, it was necessary to reflect on the state of the student's body.

Categories №3, 4, 5 («Improving the level of performance», «Enjoying the process of physical exercise», «Personal development») do not have significant indicators of content analysis.

The results of this online course testing indicate that students who have mastered the online course develop competencies aimed at designing their own life plan for the preservation or development of physical and mental health. They are able to form goals, tasks and design an individual life plan for the formation (preservation / development) of physical and mental health.

Dicussion

Currently, much attention is paid to the issues of information literacy of the population and the problems of their training in digital skills, as indicated by the results of studies by Donnelly et al. (2013), Almonacid-Fierro (2021). In this regard, the distance learning course «Psychological aspects of physical education and a healthy lifestyle» proposed by us is in demand for students. This is consistent with the opinion of Hrehorowicz (2021) on the importance of increasing the role of online learning in a pandemic.

In our research project, the analysis of the final essays conducted after the students completed a distance learning course showed the effectiveness of using this online tool to form a conscious attitude to their own physical and mental health. Almost all categories of content analysis marked by students have a positive trend (improvement, strengthening, promotion, etc.). Only 1 category («poor health») scored with the lowest number of points was marked as negative. All the linguistic units selected by the students indicate a high level of reflection in the analysis of actions while studying on the online course, increasing conscious attitude to their physical and mental health and regular motor activity, which are markers of improving their quality of life. This fact was facilitated by our proposed set of special physical exercises and psychological training, which were aimed not only at the muscular and cardiorespiratory systems, but also at the process of self-awareness, the use of unique technology of psychophysical training, as well as electronic devices that give students the opportunity to monitor their health. Our data are consistent with the opinion of Sadarangani et al. (2021) on the importance

of Internet resources for increasing people's competence in the field of health protection and the use of wearable devices to control their functional parameters. This fact does not contradict the research of Hirsh (2018), which recommended supplementing online learning with wearable remote devices. The results of our scientific work confirm the relevance of the chosen research topic, corresponding to increasing the attention of the population to their physical, somatic and mental health and physical activity in the context of modern requirements of the digital world.

Conclusions

We consider that the online course «Psychological aspects of physical education and a healthy lifestyle» developed and tested by us is an effective tool for forming students' conscious attitude to their physical, somatic and mental health, physical activity and quality of life. This fact is evidenced by the positive results of the students' final essays content analysis after completing distance learning.

The uniqueness of our online training course program is the use of the integral method. The course program contains a psychological component aimed at increasing the young people's conscious motivation to follow a healthy lifestyle; a practical component aimed at mastering the skills of psychophysical training to harmonize morphofunctional systems of the body; a reflexive component - to analyze the results of the work done, including using electronic devices. We believe that this pedagogical technology can be adjusted and used to form a conscious attitude to their physical and mental health in other groups of the population.

Conflicts of interest. The authors declare no conflict of interest.

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