

Technologies of Education in Physical Training

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THE CONTENTS OF THE FITNESS PROGRAM OF THE FORCE ORIENTATION DEPENDING ON THE INDIVIDUAL FEATURES OF THE STUDENTS BODY STRUCTURE

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Abstracts

The Relevance of the Research. Despite the myriad of innovations in the system of physical education in higher education, in practice the existing physical education programs are somewhat outdated and full of sports, which are poorly popular among students, oriented towards professional or military- applied and physical training, delivery of control standards that require a certain level of physical training, rather than focusing on the correction of the physical condition of youth and the identification and elimination of the disadvantages of the existing system of physical education, taking into account the interest and motivating students. Interesting is the fact that the number of hours for this training is not provided for by the program, and most of the higher educational institutions in our country deviate from the classical system of physical education. Therefore, in our opinion, it is expedient to use sports, taking into account, in the first place, the interest and motivation of youth, which will provide a high level of moral satisfaction from occupations.

An effective mean of attracting students to systematic motor activity is the implementation of new, non-traditional physical exercises. Fitness is a great potential for physically improving of the students. ***The aim of the Research*** is to develop the content of the fitness programs of the force orientation depending on the individual features of the students body structure. ***The Results of the Work.*** It is established that the basis of fitness is the fitness program, which is characterized by a set of specially selected physical exercises aimed at a comprehensive or selective effects on body systems or parts of the body, depending on the morphological and functional individual abilities. The program should be clearly defined type (or direction) of motor activity or a combination of exercises, intensity of exercises, exercises duration, rest peculiarities, the number of classes a week, the rate of increase in load during the week or the month. Implementation of the power exercises provided for the use of different movements, not only with encumbrances, but also on special simulators and the own weight. ***Conclusions.*** For the students with an asthenic body structure the exercises power orientation to increase body weigh, circumference of the body, improvement of the indicators of muscle tone were recommended. Students of the giperstenic structure of the body performed exercises for reducing body mass, the circles of body parts and the fat component. Physical loads of the normostenic body type representatives directed at improving muscle tone, decreased growth rates of the body weight and reducing of the circumference of the pelvis.

Key words: students, fitness programs, strength, body structure.

Людмила Ващук, Василь Пантік. Зміст фітнес-програми силової спрямованості залежно від індивідуальних особливостей будови тіла студентів. ***Актуальність дослідження.*** Незважаючи на значну кількість новацій у системі фізичного виховання вищої школи, на практиці чинні програми з фізичного виховання дещо застарілі та наповнені видами спорту, які користуються низькою популярністю в студентській молоді, орієнтовані на професійно- або військово- прикладну й фізичну підготовку, складання контрольних

нормативів, які вимагають певного рівня фізичної підготовки, а не спрямовані на корекцію фізичного стану молоді та виявлення й усунення недоліків чинної системи фізичного виховання з урахуванням інтересу та мотивації студентської молоді. Цікавим є й той факт, що кількість годин для цієї підготовки не передбачено програмою, а більшість ВНЗ у нашій державі відходять від класичної системи фізичного виховання. Тому, на нашу думку, доцільне використання видів спорту з урахуванням, передусім, інтересу та мотивації молоді, які забезпечать високий рівень морального задоволення від занять.

Ефективним засобом залучення студентів до систематичної рухової активності є виконання нових, нетрадиційних фізичних вправ. Великі потенційні можливості для фізичного вдосконалення студентів має фітнес. **Мета дослідження** – розробити зміст фітнес-програм силової спрямованості залежно від індивідуальних особливостей будови тіла студентів. **Результати роботи.** Установлено, що в основі занять фітнесом лежить фітнес-програма, для якої характерна сукупність спеціально підібраних фізичних вправ, спрямованих на комплексну або вибірккову дію на системи організму чи окремі частини тіла залежно від морфофункціональних можливостей людини. У програмі потрібно чітко визначити вид (або спрямованість) рухової активності чи поєднання вправ, інтенсивність занять, тривалість вправ, характер відпочинку, кількість занять на тиждень, темпи збільшення навантаження протягом тижня або місяця. Виконання силових вправ передбачало використання різних рухів не лише з обтяженнями, але й на спеціальних тренажерах і власною вагою. **Висновки.** Для студентів астеничної будови тіла рекомендовано вправи силової спрямованості для збільшення маси тіла, окружностей частин тіла, покращення показників тону м'язів. Студенти гіперстеничної будови тіла виконували вправи на зниження маси тіла, зменшення окружностей частин, зменшення жирового компонента. Фізичні навантаження представникам нормостеничного типу статури спрямовували на поліпшення тону м'язів, зниження темпів приросту маси тіла та зменшення окружності таза.

Ключові слова: студенти, фітнес-програми, сила, будова тіла.

Людмила Вашук, Василий Пантик. Содержание фитнес-программы силовой направленности в зависимости от индивидуальных особенностей строения тела студентов. Актуальность исследования. Несмотря на значительное количество новаций в системе физического воспитания высшей школы, на практике действующие программы по физическому воспитанию несколько устарели и наполненные видами спорта, которые пользуются низкой популярностью у студенческой молодежи, ориентированные на профессионально- или военно-прикладную и физическую подготовку, сдачу контрольных нормативов, которые требуют определенного уровня физической подготовки, а не направлены на коррекцию физического состояния молодежи, а не на выявление и устранение недостатков существующей системы физического воспитания с учетом интереса и мотивации студенческой молодежи. Интересен и тот факт, что количество часов для этой подготовки не предусмотрено программой, а большинство вузов в нашей стране отходят от классической системы физического воспитания. Поэтому, по нашему мнению, целесообразно использование видов спорта с учетом, в первую очередь, интереса и мотивации молодежи, которые обеспечат высокий уровень морального удовлетворения от занятий.

Эффективным средством привлечения студентов к систематической двигательной активности является выполнение новых, нетрадиционных физических упражнений. Большие потенциальные возможности для физического совершенствования студентов имеет фитнес. **Цель исследования** – разработать содержание фитнес- программы силовой направленности в зависимости от индивидуальных особенностей строения тела студентов. **Результаты работы.** Установлено, что в основе занятий фитнесом лежит фитнес-программа, для которой характерна совокупность специально подобранных физических упражнений, направленных на комплексное или избирательное влияние на системы организма или отдельные части тела в зависимости от морфофункциональных возможностей человека. В программе необходимо определить вид (или направленность) двигательной активности или сочетание упражнений, интенсивность занятий, длительность упражнений, характер отдыха, количество занятий в неделю, темпы роста нагрузок в неделю или месяц. Выполнение силовых упражнений предусматривало использование различных движений не только с отягощениями, но и на специальных тренажерах и собственным весом. **Выводы.** Для студентов астенического строения тела рекомендованы упражнения силовой направленности для увеличения массы тела, окружностей частей тела, улучшение показателей тонуса мышц. Студенты гиперстенического телосложения выполняли упражнения для снижения массы тела, уменьшения окружностей частей, уменьшение жирового компонента. Физические нагрузки представителям нормостенического типа телосложения направляли на улучшение тонуса мышц, снижение темпов прироста массы тела и уменьшение окружности таза.

Ключевые слова: студенты, фитнес-программы, сила, строение тела.

Introduction. In educational institutions physical culture is aimed at mastering the basic knowledge, the formation of motor skills and abilities, the development of physical qualities and the health of students [2; 12]. In recent years, many studies have been conducted and devoted to the improvement of the content and methods of physical education of students [1; 3; 8; 13; 18; 20; 21; 22]. Covering various forms of motor activity, fitness satisfies the needs of different social and age groups in health activities due to the diversity of fitness programs, their availability and emotionality [4; 6; 7; 14; 19; 23]. The results of the studies allowed to state that the basis of fitness is the fitness program, which is characterized by a set of specially selected physical exercises, aimed at the complex or selective action on the organism or individual parts of the body, depending on the morphofunctional capabilities of a human. Scientists note that the optimal health effect doesn't give any physical activity, but only those that meet the individual features of the human body [5; 10; 11; 15; 16; 17]. So to boost the effectiveness of physical activity it is necessary to apply new directions and technologies based on morphofunctional features of youth and realize their motivation in a best way.

The purpose of the study is to develop the content of fitness programs of the strength orientation depending on the individual features of the students body structure.

Material and organization of research. To achieve the established goal the following research methods are used: theoretical (analysis of psycho-pedagogical literature, comparison and generalization of information), empirical (pedagogical observation, pedagogical experiment), statistic. In the process of scientific work data of pedagogical experiment was analyzed and summarized, basic requirements for fitness programs of strength orientation were formed, results of the study were tested. The experimental research base of the study was the Eastearn-European National University named after Lesya Ukrainka. Altogether 1160 students from 1–4 courses of full-time education of the main medical group (323 boys and 837 girls) participated in pedagogical research. We received the informed consent from all participants to participate in this experiment.

Research results. Health way of fitness is a balanced program of motor activity of an individual character, built on the basis of physical culture, recreation and sports interests of people of different sex and age. A set of specialized exercises of selective direction is used in health fitness in order to form proportional structure of the body, development of physical qualities and increase of functional abilities level of the body. The main feature of building classes of health fitness was in the sequential combination of the work of the strength character with various exercises of aerobic orientation, as well as stretching.

Considering age, state of health, level of physical development, motivation of students, fitness programs based on health-improving types of gymnastics were used. When developing the content of individual fitness programs for independent classes are divided into seven target blocks:

- preparatory (functional preparation of the body for physical activity);
- aerobic (increased ability of the cardiovascular and respiratory systems of the body);
- dance-choreographic (development of coordination qualities, formation of aesthetic and musical-rhythmic abilities);
- corrective (correction of the structure of the body by means of strength physical exercises);
- preventive (prevention of posture disorders and increased resistance of organism to a variety of diseases);
- general development (development of dexterity, flexibility, speed);
- relaxation (restoration after classes, removal of fatigue and relaxation).

The preparatory part is aimed at organizing students, activating their attention, preparation of an organism for physical loadings. The main place in the preparatory part is the functional preparation of the body to the motor activities. This will be achieved by implementing a complex of all-development exercises, where there is a shifting effect on the main muscle groups, gradual increase in physical activity.

The physical exercises used in the preparatory part are conventionally divided into two parts: the first one is connected with the activation of the body's systems (respiration, blood circulation, metabolic processes); the second - with the strengthening of the functional activities of those organs that will provide

motor activity in the following physical exercises. Therefore, the first part of the complex was relatively constant, as well the second one was selected for each lesson, based on its main tasks.

The aerobic part of fitness classes was made with all-developing gymnastics exercises, walking and running. Physical exercises performed with musical accompaniment without a pause of passive rest, stimulate the activity of cardiovascular and respiratory systems, contributed to the improvement of physical fitness.

In cyclic exercises, as a rule, a method with constant intensity were used. The load belonged to the intensity zone and was aimed at the development of overall endurance.

An important role in fitness programs was dance-choreographic block that included elements of choreography, classical, folk, modern dance, rhythmic gymnastics and other exercises for musical accompaniment. Depending on the choice of physical exercises and dosing loads, dance classes were mostly athletic, psycho-regulative or mixed nature. During physical exercises, body position often changes in space, there are various accelerations that are a training factor for vestibular apparatus.

Performing developmental exercises significantly affect the increase in the force of balance and mobility of the main nervous processes excitation and inhibition, which contributed to the improvement of the regulation of functions the body.

Intensive dancing is a great way of cardio-building and development coordination of movements. Dancing aerobics classes make it possible learn to move beautifully, dance, get rid of many complexes and feel confident and comfortable in any society.

To perform physical exercises on their own during the formation of the skills, attention was payed to the following points: they offered exercises for independent performance only after they were mastered in the class; to the consciousness of the students was brought to the attention that to achieve significant results, they can only provide long and persistent training; gradually, with the help of various stimulating techniques, transfered the students from the orientation towards the result to the orientation of the process of activity; they incited them to take care not only to achieve a specific goal, but also for a positive mood. To perform physical exercises independently with the aim of improving or developing physical qualities, the students were acquainted with the methods of controlling their actions and assessing the correctness of their implementation.

It was offered on a basis of comparison and analysis of their own muscle feelings, to determine the difference in the effectiveness of the impact of a particular physical exercise (when changing its variants implementation). For example, bending and extension of the hands in the emphasis lying with hands in different attempts, at different widths, with different positions of the brush, with hanging legs at different heights, with different angles of bending in the hip. Students were involved in the independent selection of exercises, definitions the optimal number of repetitions. Finding physical exercises was clearly defined their orientation, duration of performance and availability. Realization of physical exercises were directed at the development of physical qualities, strengthening of the basic muscle groups, formation of the correct posture.

For the development of physical qualities, a reusable method of training was used.

The effectiveness of this method was that aerobic and anaerobic levels of general and special endurance increased, monotony was eliminated during performing the exercises. Rest between exercises was mainly active with the use of breathing exercises. For the students who had a higher level of physical fitness, the interval method with loads relatively of high and low intensities was used. For repeated and interval training methods of performing exercises is characteristic re-serial method, at which are short recreation intervals between repetitions in the series alternated with longer ones between series.

This method was aimed at the development, mainly of power and speed-power qualities. The relaxation part of the class is characterized by a gradual decrease in the functional activity of the students body. The more significant were functional changes in the process of studies, to a greater extent that the final part must have a restorative orientation. For the final part of the sessions easily accessible exercises were selected: slow running walking, muscle relaxation exercises, dance compositions. The five main components of the fitness program were the type of training, the number of lessons per week, the intensity and the duration of

each lesson, the duration and nature of the rest, the expected result taking into account the formation of healthcare-saving competence.

Discussion. In order to solve tasks of correction of body structure, reduction or increase of mass and circles of body parts, fitness programs of strength direction are offered. The doing of strength exercises was provided by the use of different movements (bench, weights, breeding) not only with burdens (rod, weights, dumbbells), but also on special simulators and their own weight.

Complexes of physical exercises were made for the development of the main muscle groups in a view of the problem areas of the body (buttocks, thighs, belly). In the course of studies. the optimal sequence of power exercises was as follows: abdominal muscles, hip muscles, muscles of the back and arms. The list of recommended exercises includes the breathing exercises and exercises to maintain a static posture, where special attention is paid to correct posture. Corrective fitness programs, as a rule, have the following structure: cardio work (3–5 min); mobility of joints and ligaments, stretching (stretching exercises); cardiomotor (5–10 min) with gradual increase to 30 min. The encumbrances were selected so that two final repetitions were carried out with considerable effort. The first week of training is the preparation of muscles for the main load, of course, that you need to take exercises for all muscle groups. The average duration of this period is 20 minutes. The second week of training is a rushing lesson, which can last an average of 30–40 minutes.

The scientific research [9; 12] proved to be one of the most characteristic signs of physical development of a person is the structure of the body. Deviations of structural indicators body of optimal magnitude negatively affect both physical and mental status of youth. Therefore when developing a fitness program, you took into account the type of body structure (asthenic, gipeptenic, normosthenic). According to research results it was found that 22% of students have asthenic structure of the body, 19 hypertensives and 59 normosthenic

For the students of asthenic structure of the body, which is characterized by thinness, higher height than average, narrow shoulders, thin limbs, body mass deficiency the strength exercises to increase body weight, circles of the body parts (shoulder, chest, pelvis, thigh), the improvement of muscle tone rates were recommended. Fitness program for representatives of this group is intended to change the tone of the main muscle group. Students of the hypersthenic structure of the body mostly had a massive body, medium height, bulky shoulders, shortened limbs, excess of body weight. Therefore, the performing of physical exercises was aimed at reducing body weight, reducing the circles of body parts (shoulder, chest, abdomen, pelvis, thighs), reducing the fat component.

Students of normosthenic type of structure of the body have relatively proportional structure of the body. Therefore, physical activity was aimed at improving the tone muscle, decreasing the body mass and decreasing pelvic circumference.

Due to the peculiarities of the physical conditions of the students belonging to different groups we have developed a dosage of strength loads in accordance with this.

Table 1

Dosage of loads for students of different body structure

Body structure	Load size (maximum number of repetitions), times	Number of repetitions, times	Duration of rest between sets, min	Tempo
Asthenic	8–12	5–6	1,5–3,0	Slow, medium
Hypersthenic	15–25	3–4	0,63–1,0	Fast
Normosthenic	8–12	4–5	1,0–2,0	Medium

To increase the muscular strength of the students of the first group it is recommended to perform athletic exercises in 5–6 approaches. Each exercise is repeated 8–12 times, duration of rest between series – 1,5–3,0min. Exercises are performed in slow and average pace (regime of muscle mass increase). The method of force development for representatives of the second group is somewhat different: the number of approaches is reduced to 3–4 times, and the number of repetitions increases by 15–25 times. Exercise is recommended to do with slow pace with breaks between 40–60 s approaches (dimming mode of fatty tissue).

Students of the third group are encouraged to perform exercises at 4–5 approaches with load magnitude 8–12 times and duration of rest 1.0–2.0 min. The pace of performance is average.

During the exercises, attention was focused on the correct breath. Breathing exercises were divided into static (not combined with movements limbs and trunk) and dynamic (when the breathing combines with different movements).

Both can be done from different starting positions (standing, sitting, lying down).

Conclusions and perspectives of further research. Effective means of attracting students to systematic motor activity is a performance of new, unconventional physical exercises. Great potential for physical improvement of students has fitness. A fitness program is at the heart of fitness, which is characterized by a collection of specially selected physical exercises aimed at a complex or selective action on the systems of the body or individual parts of the body depending on the morphofunctional human capabilities.

To solve tasks of body structure correction, reduction or increase of masses and body parts in the circumference fitness programs of the force direction are offered. Exercises involve the use of different movements not only with encumbrances, but also on special simulators and by their own weight.

For the students of asthenic structure of the body recommended force exercises to increase body weight, the circumference of body parts, improvement of muscle tone indicators. Students of hypersthenic structure of the body performed exercises to reduce body mass, to reduce the circles of the parts, reduce the fat component. Physical load on representatives of normostenic type were aimed at improving the muscle tone, reducing the body weight and a decrease in the pelvic circumference.

In further research it is advisable to focus the attention on the methodology of the development of individual fitness programs for the students of special medical groups.

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