Implementation of self-control methods for students of the Agro-industrial Faculty engaged in physical education in distance learning

Nikolay Ryzhkin1, Tatiana Tumasyan1, Olga Brovashova1*, and Elena Nemtseva1

1 Don State Technical University, Gagarin Square 1, Rostov-on-Don, 344003, Russia

Abstract. Relevance: the use of self-control methods in teaching physical culture makes it possible to implement the requirements of the theoretical and methodological sections of educational programs through independent educational work of students in distance learning (in a pandemic). Self-control is a method of self-observation of the state of one's body in the process of doing physical exercises and sports. Any person who has begun to regularly engage in physical exercises should regularly monitor the state of their body, which will help to properly regulate the amount of load during exercise, evaluate the results of self-training and, if necessary, change the training regime. The introduction of self-monitoring methods helps to ensure the safety and effectiveness of classes, as well as to activate the interest and motivation of students to physical activity. With regular physical exercises, the activity of all organs and systems is activated, the volume of muscles increases, metabolic processes are enhanced, and the cardiovascular system is improved. Thus, the physical fitness of the trainees improves, the loads are easily tolerated, and the previously inaccessible results in different types of physical exercises become the norm. Self-control is necessary so that classes have a training effect and do not cause health problems. This contributes to improving the effectiveness of classes and achieving the best results in the field of physical development of students. The most convenient form of self-control is to keep a self-control diary.

1 Introduction

The development of this topic is dictated by the prevailing social realities. Distance learning is beginning to play an increasingly important role in the Russian education system. Students, being in the distance learning mode, should get the opportunity of a full-fledged education in accordance with the legislation of the Russian Federation.

There is an acute need for the formation of a system of self-control of students on the basis of a purposeful, scientifically grounded organization of pedagogical communication between the teacher and the study group, both in individual and collective modes.

This study puts forward a model for the formation of self-control as a personal quality of a student in distance education [1-20].

* Corresponding author: olivka1103@yandex.ru
In the theory and practice of independent physical education, several principles are determined that will help to avoid overwork, trauma, psychological rejection and will lead to positive results. The main ones are:

- Consciousness - instilling in students an understanding of the importance of the ongoing process, aimed at its self-improvement and improvement.

- The gradualness and sequence of classes is the basis of physical development without injuries and overwork.

- Repetition and individualization - aimed at achieving a result by repeating exercises and taking into account the characteristics of the physical and psychological development of each student.

- Consistency and regularity - aimed at developing a stable habit of physical education.

Training process is based on the correspondence of physical activity to the age, gender, and individual characteristics of the student, such as: health status, physical development, level of physical fitness. These factors are very important for agricultural students, whose profession is associated with constant physical exertion.

There are subjective and objective indicators for self-control. Subjective: health, mood, appetite, discomfort. Objective: heart rate, sweating, body weight, body length, gastrointestinal function, lung capacity, muscle strength. You can control your condition during physical education by external and internal signs of a change in well-being. External signs include: sweating, impaired coordination, discoloration of the skin, disturbance in the rhythm of breathing. For example, if during exercise one or more of the signs are pronounced, it is worth stopping the exercise and resting. Internal symptoms include: the appearance of muscle pain, dizziness, nausea. If these signs appear, then it is worth finishing the exercise and the training in general. Taking into account the fact that after some time after physical education, the state of health is restored, there is a good mood, appetite and sleep, it means that the body copes with the load, and you can continue to exercise.

The tasks of introducing self-control methods during independent physical culture lessons in distance learning.

1. To diversify physical education classes.
2. Individualize the approach to each student.
3. Develop skills for independent work.
4. Promote an increase in the level of educational work.

To assess the feasibility of this study, the authors of the article conducted a survey among students of 1-2 courses of the Agroindustrial Faculty of the Don State Technical University. The questions asked in the questionnaire were as follows:

1. Interest in applying self-control methods.
2. An interest in keeping a self-control diary.

The results of the survey of students are shown in Figures 1 and Figure 2 were as follows.
After summarizing the survey data, the conclusion was unambiguous: students are interested in the bulk of them in the application of self-control methods and keeping a self-observation diary. Based on these findings, the research group of the Department of Physical Education developed and implemented a self-control diary and proposed the following tests and standards.

Students were asked to fill out a self-control diary (see sample Table 1), the data were processed and some conclusions were drawn.
Table 1. Indicators of general physical fitness and morpho functional readiness.

<table>
<thead>
<tr>
<th>P / p No.</th>
<th>Indicator</th>
<th>Result</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Incline</td>
<td></td>
</tr>
<tr>
<td>2</td>
<td>Raising the trunk (in 1 min.)</td>
<td></td>
</tr>
<tr>
<td>3</td>
<td>Flexion / extension of the arms in the lying position</td>
<td></td>
</tr>
<tr>
<td>4</td>
<td>Standing jump</td>
<td></td>
</tr>
<tr>
<td>5</td>
<td>Jumping rope (for 1 min.)</td>
<td></td>
</tr>
<tr>
<td>6</td>
<td>Growth</td>
<td></td>
</tr>
<tr>
<td>7</td>
<td>Weight</td>
<td></td>
</tr>
<tr>
<td>8</td>
<td>Body mass index (BMI)</td>
<td></td>
</tr>
<tr>
<td>9</td>
<td>Quetelet index</td>
<td></td>
</tr>
<tr>
<td>10</td>
<td>Heart rate (bpm)</td>
<td></td>
</tr>
<tr>
<td>11</td>
<td>Arterial pressure</td>
<td></td>
</tr>
<tr>
<td>12</td>
<td>Rufier Index</td>
<td></td>
</tr>
<tr>
<td>13</td>
<td>Stange test</td>
<td></td>
</tr>
<tr>
<td>14</td>
<td>Genchi test</td>
<td></td>
</tr>
<tr>
<td>15</td>
<td>Romberg test</td>
<td></td>
</tr>
<tr>
<td>16</td>
<td>Orthostatic test</td>
<td></td>
</tr>
</tbody>
</table>

Conclusions:
1. An individual approach is used.
2. The objectivity of the assessment is increased.
3. A detailed picture of students' successes and mistakes is recorded and summarized.

2 Materials and methods

Object: studying the introduction of self-control methods of students-agrarians, engaged in physical culture in distance learning.

Methods: The analysis includes data obtained as a result of the fulfillment of the specified standards by students of the agro-industrial faculty, those engaged in physical education at distance learning.

Object of study: educational process during the period of distance learning in groups of 1-2-year students of the Agro-industrial Faculty.

Subject of study: Self-assessment tests that allow students to personalize and rationalize lesson inputs in more detail.

Relevance: the use of self-control methods in teaching physical culture makes it possible to implement the requirements of the theoretical and methodological sections of educational programs through independent educational work of students in distance learning (in a pandemic).

It should be clarified that the experiment began before the coronavirus pandemic. But, during distance learning, it has become even more relevant due to its availability.

When filling out the self-control diary (Table 1.) of students, we can make the following assessment.

Items 1-5 allow to assess physical fitness and development of physical qualities. The reference point of the norm in these tests was the standards of the TRP complex.

Items 6-11 allow you to assess physical development.

When measuring height, the subject stands with his back to the rack in the "attention" position.
Normal weight is equal to height (in cm) -100. Fluctuations of 2-3 kg are allowed depending on age, gender, physique.

Body mass index (BMI) is a measure of the proportionality of weight for height, thus reflecting the state of body fat.

Heart rate (heart rate) is measured at the wrist or carotid arteries in one minute at rest. Indicators of the norm are 60-80 beats per minute.

Indicators of blood pressure norm 110 (120) \( \times \) 70 (80) mm Hg.

Items 12-14 allow you to assess the functional state of the cardiovascular and respiratory systems. Then, according to the formula, a load complex is calculated, designed to assess the performance of the heart during physical exertion - the Rufier Index. The patient's pulse is measured while sitting or lying down. Then he does 30 squats in 45 seconds and immediately his pulse is measured, then after a minute the pulse is counted again. The test is designed to determine the rate of increase in heart rate during exercise and its recovery after its termination. Then the Rufier index is calculated, which is used to judge the performance of the heart muscle, as well as the influence of the autonomic nervous system on it. Stange's test. In a sitting position, the subject takes a deep breath in and out, then inhales, closes his mouth and pinches his nose with his fingers and holds his breath.

Genchi's test. The examinee holds his breath after a full exhalation. The result is recorded by a stopwatch.

Items 15-16 allow to assess the functional state of the parasympathetic division of the autonomic nervous system.

Romberg's test allows you to determine the coordination functions of the nervous system.

Orthostatic test allows you to assess the state of the heart, the degree of fitness, performance.

All tests and samples stated in the self-observation diary are available, they can be performed independently or with the help of a friend.

1-2-year students of the Agroindustrial Faculty were asked to perform these tests and samples and record the results in the proposed self-observation diary. On the basis of the processed data, the average indicators, the deviation from the norm of these indicators were derived and, accordingly, recommendations for changes for the better were proposed (Figures 3 and Figures 4). Analyzing the data obtained, it is possible to determine the general physical fitness of students, to gain an understanding of the adjustment of independent studies, to reveal whether there is a significant deviation from the norm or the results are within the normal range (Table 2 and Table 3).

### Table 2. The results of general physical training of students of the agroindustrial faculty (girls).

<table>
<thead>
<tr>
<th>P / p No.</th>
<th>Indicator</th>
<th>Worst result</th>
<th>Best result</th>
<th>Average result</th>
<th>The upper limit of the norm</th>
<th>Lower limit of the norm</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Incline</td>
<td>+4</td>
<td>+22</td>
<td>+13</td>
<td>+16</td>
<td>+8</td>
</tr>
<tr>
<td>2</td>
<td>Raising the torso</td>
<td>29</td>
<td>51</td>
<td>40</td>
<td>43</td>
<td>32</td>
</tr>
<tr>
<td>3</td>
<td>Flexion / extension of the arms in the lying position</td>
<td>3</td>
<td>25</td>
<td>14</td>
<td>17</td>
<td>10</td>
</tr>
<tr>
<td>4</td>
<td>Standing jump</td>
<td>134</td>
<td>210</td>
<td>172</td>
<td>195</td>
<td>165</td>
</tr>
</tbody>
</table>
Analyzing the data obtained, it is possible to determine the general physical fitness of students, to gain an understanding of the adjustment of independent studies, to reveal
whether there is a significant deviation from the norm or the results are within the normal range.

3 Results

Findings: students are interested in the bulk of them in the application of self-control methods and keeping a diary of self-observation. Based on these findings, the research group of the Department of Physical Education developed and implemented a self-control diary and proposed the following tests and standards.

It should be clarified that the experiment began before the coronavirus pandemic. But, during distance learning, it has become even more relevant due to its availability.

The data obtained as a result of testing allows us to draw the following conclusions:
1. The proposed self-control diary is appropriate for use by students of the Agroindustrial Faculty in distance learning.
2. The data of the diary allows to expand the range of means and methods of preparing students.
3. An individual approach is used.
4. The objectivity of the assessment is increased.
5. A detailed picture of students' successes and mistakes is recorded and summarized.

4 Discussion

At the scientific and methodological council of the Department of Physical Education, the general decision of the council approved the direction chosen by the authors of this article, which must certainly be developed and improved. The adjustments developed during the study will be introduced.

5 Conclusion

The presented brief summary of data on the implementation and application of self-control methods, considered the reasons for the need for special attention to this problem and the introduction of new methods of training students of the agro-industrial faculty. This article can be useful to everyone who is interested in the current state of affairs in the field of physical culture and sports.

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