

## PREREQUISITES FOR ORGANIZATION OF DISTANCE LEARNING IN PHYSICAL EDUCATION IN HIGHER EDUCATION INSTITUTIONS

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**Abstract:** The article aims to investigate the connections between the level of physical fitness, interest, general level of students' self-consciousness and interests in order to find the most optimal means and methods of conducting physical culture work, identifying individual interests and needs to exercise physical education and sports at full and distance learning form. The main research methods were theoretical analysis and generalization of special scientific data, pedagogical experiment, system-structural analysis and methods of mathematical statistics. Psychological methods included determination of the need for achievements by the methodology of Yu. M. Orlov. The individual profile of the physical "Self" was determined by the personality method according of E. V. Bochenkova. The research showed a fairly high level of consciousness of students regarding the level of development of their own physical qualities. The study found that the greatest level of motivation and influence on the development and self-improvement of young people has physical potential. Young people's awareness of their degree of responsibility for their own development and realization of their talent indicates that they have all the prerequisites for self-development, and adequate assessment of the situation and their behavior is a way to self-realization – a way of self-development.

**Keywords:** Distance learning, Higher education institutions, Motive, Physical education, Self-consciousness.

### 1 Introduction

The academic year 2020-2021 in higher education institutions not only in Ukraine but also in most countries of the world began in the context of the deteriorating epidemiological situation caused by the distribution of coronavirus disease (COVID – 19). According to the letter of Ministry of Education and Science of Ukraine dated October 12, 2020 "Regarding the temporary transition to distance learning", Ukrainian higher education institutions were recommended to introduce distance learning [1]. Today, according to current legislation, universities have academic autonomy, according to which they independently determine how to organize the educational process in quarantine and what technologies to use for distance learning. This form of learning should be balanced and give students the opportunity to achieve learning outcomes. It is worth choosing the appropriate forms for this, which will not be limited to writing written works (abstracts). The ever-increasing amount of information without full feedback from a teacher, the lack of access to sports facilities of educational institutions make the educational schedule of student youth increasingly tense. Forced constraints of motor activity leads to atrophic changes in muscles, bone tissue, metabolic disorders, decreased protein synthesis.

Hypodynamia has an extremely adverse effect on the brain, there are headaches, insomnia; young people become emotionally unbalanced, and a simultaneous increase in mental stress complicates learning and physical condition. Sedentary lifestyle is one of the main causes of severe chronic diseases of the internal organs. In this case, mental capacity worsens, there are negative changes in the central nervous system; functions of attention, thinking, memory decrease, emotional stability weakens.

In recent years, the Ministry of Education and Science of Ukraine pays most attention to the integration of Ukrainian higher education into European, so there is a need to improve the strategic direction of development of each educational institution for the competitiveness of both the institution and its graduates [20-25]. The main issues identified by the Government are the issues of financial, academic, personnel, and organizational independence of domestic universities. All these types of autonomy represent a priority development strategy of the Association of European Universities. The following aspects are included in the organizational autonomy: a clear and transparent electoral system for the management of higher education activities, the participation of faculty in addressing the issues of reorganization of various departments (departments, faculties, etc.). Financial autonomy is an important and fundamental condition for the development of any educational institution. To achieve this, teachers are encouraged to find ways to commercialize their scientific and methodological developments. In addition, in the field of physical education, it is proposed to use a wide range of commercial services for the organization of sports sections, renting own sports facilities, use of professional teaching potential in a consultative form of communication with potential consumers of educational and sports services. Also, important ones are the issues of legalization of university rights for registration of ownership of university premises, land, improvement of tuition fees for domestic and foreign students, the ability to invest in the capital development of institutions [3, 13, 14]. The aspect of personnel independence is noteworthy clear procedures for concluding contracts with the teaching staff of universities, although the issues of cancellation of scientific pension, an attempt to cancel interest surcharges for experience, scientific degree and scientific rank in the new legislation significantly slows down the development of scientific activities of teachers. To achieve leading academic autonomy, there is the need for improvement of licensing and accreditation of specialties by the Ministry of Education and Science of Ukraine, development of clear industry standards, giving universities greater autonomy in drawing up curricula and programs, including revision of compulsory and elective courses with the need to increase the number of the latter.

According to the modern requirements of educational programs, students of higher education institutions have the opportunity to independently plan and organize their free time to perform independent classes of the course "physical education".

### 2 Materials and Methods

The research involved 611 1-4 years students of Medical, Dental, and Pharmaceutical faculties of Donetsk National Medical University aged 17-23 years (208 (34%) boys and 403 (66%) girls). The main research methods were theoretical analysis and generalization of special scientific, pedagogical experiment, system-structural analysis and methods of mathematical statistics. Psychological methods included determination of the need for achievements by the methodology of Yu.M. Orlov; the individual profile of the physical "Self" personality according to the method of E. V. Bochenkova was determined.

#### 2.1 Research Participants

The research involved 611 1-4-year students of Medical, Dental, and Pharmaceutical faculties of Donetsk National Medical University aged 17-23 years (208 (34%) boys and 403 (66%) girls).

#### 2.2 Statistical Analysis

Statistical processing of the data was performed using the Excel 2010 spreadsheet editor (Microsoft, USA, 2010), the average value was used. The complex research program included 15 indicators. Before analyzing the correlation matrices, there was a need not only to distribute students in percentage to levels, but

also to evaluate reliability and accuracy. To determine the accuracy of estimating the distribution of students by level, we used mathematical confidence intervals, and to determine the reliability, confidence level was used. The need was caused by a small number of observations, different numbers of men and women and different types of exercise to assess the level of physical fitness. According to these data (CL = 95%), there is a statistically significant practical value of the selected tests, as both boys and girls did not have a difference in the percentage distribution at relevant levels. Analyzing the correlation tables of two factors was checking the presence of relation between them. Upon obtaining a certain degree of connection, its strength was calculated by Spearman's rank correlation and measure of connection (Goodman). Using rank correlation, we were able to assess the strength of the connection. The value of  $r < 0.3$  indicated a low level of correlation,  $r = 0.31-0.69$  the average level and  $r = 0.7-0.99$  a high level of communication.

Psychological characteristics were determined by questioning students. The following were studied: students' attitude to their physical "Self"; establishing gender differences in the perception of their physical development by boys and girls of different levels of physical fitness; determined individual profile of the physical "Self" of the individual. We used Bochenkova's test questionnaire "Self-description of physical development", which is a modified version of the well-known method of Prikhozhan; the need for achievements was determined by the method of Orlov.

### 3 Results and Discussion

The most important indicators of the effectiveness of the structural units of physical culture and sports in higher education are the results of research on physical health, physical condition, physical fitness, motivation, interest in various forms of physical education for students. The need to study the self-esteem of physical condition and its comparison with the actual indicators of students arose together with the need to explore the readiness of students to self-control and self-improvement by means of physical education, offering a number of incentives to positive motivation, self-development. From the point of view of age psychology, in student age, features of the internal world and self-consciousness change, mental processes and properties of the person evolve and are rebuilt, the emotional and volitional structure of life changes. The main formation of the student is self-awareness of the subject of activity, so he must be interested in personal development and self-development. The strategy of self-development in physical education of students allows getting deeper into the essence of the student's personality, understanding the motives of behavior. Each student is a unique and inimitable personality, there are a number of typologies of personality that allow classifying students on a certain basis. Given the qualities of a particular group of students on a common basis academic success it is much easier to choose a teaching strategy.

According to the questionnaire data, 611 students took part in our study, of which 403 (66%) were girls and 208 (34%) were boys. The aim of the research was to determine the differences between students who are engaged in physical education in the I-II courses, and those who do not have this cycle in the program in the III-IV courses. Statistically significant differences were related to lifestyle, temperament, emotional state, genotype, and the content of the process of physical education.

According to the study at DNMU, the largest number of students (32.5%) was classified as the average level of physical fitness, of which there were 81 (37.3%) girls of I-II courses and 63 (33.9%) girls of III-IV courses and 19 (18.4%) boys of I-II courses and twice as many 36 (34.3%) boys who are studying in III-IV courses.

The smallest number of students 64 (10.5%) was attributed to a high level of physical fitness, as well as girls of I-II training courses, 19 (8.8%), and 13 (7%) of girls III-IV courses; the number of young men was 20 (19.4%) in I-II training courses

and almost twice less 12 (11.4%) guys studying at III-IV courses. Almost a third of students 190 (31.1%) had a sufficient level of physical fitness, of which there were 60 (27.6%) girls of I-II courses and 48 (25.8%) girls of III-IV courses; among boys of this level, 37 (35.9%) in I-II courses and 39 (37.1%) boys of III-IV courses were trained. 164 (27%) students had a low level of physical fitness, of which almost a third were girls of III-IV courses 62 (33.3%) and 57 (26.3%) girls of I-II courses, and 27 (26.2%) boys of I-II courses and 18 (17.1%) boys of III-IV courses. According to these data, there is a clear trend of decreasing the number of students at higher levels of physical fitness in senior courses due to the lack of physical activity in the curriculum and the general decline in physical activity in everyday life.

The need for achievement is a component of the need-motivational structure of the student's personality. In order to assess the need (motive) for achievement, we used a technique developed by Orlov (Table 1). The test aims to identify the degree of impact on a person's need to succeed in any activity (that is the degree of charge for success).

Table 1: The need for achievements according to the Orlov method

|               | Boys                    |      |                         |      | Girls |      |                       |      | Together |      |
|---------------|-------------------------|------|-------------------------|------|-------|------|-----------------------|------|----------|------|
|               | 1-2 course<br>(n = 103) |      | 3-4 course<br>(n = 105) |      | Level |      | 3-4 course<br>(n=186) |      |          |      |
|               | n                       | %    | n                       | %    | n     | %    | n                     | %    | n        | %    |
| Low           | 0                       | 0,0  | 23                      | 21,9 | 0     | 0,0  | 0                     | 0,0  | 23       | 3,8  |
| Below average | 5                       | 4,9  | 38                      | 36,1 | 3     | 1,4  | 6                     | 3,2  | 52       | 8,5  |
| Average       | 80                      | 77,7 | 43                      | 41,0 | 176   | 81,1 | 141                   | 75,8 | 440      | 72   |
| Above average | 18                      | 17,5 | 1                       | 1,0  | 38    | 17,5 | 39                    | 21,0 | 96       | 15,7 |
| High          | 0                       | 0,0  | 0                       | 0,0  | 0     | 0,0  | 0                     | 0,0  | 0        | -    |
| Together      | 103                     | 100  | 105                     | 100  | 217   | 100  | 186                   | 100  | 611      | 100  |

According to Orlov, the need for achievement arises due to differences between the actual level of achievement and the expected level of performance or achievement, in excess of the imagined achievement. This need is manifested as the setting of a distant goal and the desire to 'compete with self' in order to achieve more meaningful results. Predecessor scientists prove the relationship between the need for physical activity, the desire to succeed with self-development, self-esteem, self-affirmation and psychosocial characteristics of the individual. Self-analysis of one's own spiritual processes often leads to a critical assessment of the negative aspects of one's inner world, which is what makes a person capable of self-improvement. Therefore, reflection is one of the main factors of youth self-development in general. It is considered as "the ability to perceive introspection, that is the ability to critically review own experience" [10]. Since reflection is unique to a human, it functions as an analysis of the subject's own mental state and is aimed at self-improvement, representing "a key point in the development of personality" [5]. Reflection promotes the conscious performance of any activity. Scientists identify three areas of implementation of reflexive processes:

- The scope of activities and thinking, which requires reflection on the basics of action;
- Reflection as an understanding of the meaning of interpersonal communication;
- The sphere of self-consciousness, where reflection provides a distinction between "Self" – not "Self".

According to results of our research, 72% of students have an average assessment of the level of need for achievement, which is quite significant, but 15.7% of students received an increased assessment of the need for achievement, all of them have above average level of physical fitness.

Only 8.5% of students were below the average assessment of the level of need for achievement, unfortunately none of the students had a high assessment of need for achievement.

The low level of achievement need was revealed only in 23 (21.9%) of the students of III-IV years of study, indicating a

decrease in motivation to study and perseverance, reducing the impact of parents and the beginning of employment attempts. About 36% of students of the III-II-IV courses have a lower average level of need to achieve, compared to the number of girls 6 (3.2%) of these same courses, which are at this level is quite a large number, which is evidence of mental overload in guys during this period. In the first and second year students, a rather small percentage of boys 5 (4.9%) and girls 3 (1.4%) had an indicator of the need for achievement at a level below average. The largest percentage of students from first to fourth year had an average level of need to achieve – 483 (79%) students. In the first and second years, this level was recognized in 176 (81.1%) girls and 80 (77.7%) boys, and in the third and fourth years of study – in 141 (75.8%) girls and 43 (41%) of boys. They differed from others by the lack of a spirit of rivalry, the desire for others to experience success and achievement with them; dissatisfaction with easy success and unexpected ease of task; willingness to accept help and help others in solving difficult problems to experience the joy of success together. In essence, this is a need that has become a personal property, an attitude.

The highest percentage of need for achievements at a level above the average was in girls III-IV years of study – 39 (21%), while

in boys of the same age, this figure was much lower (1%), which indicates a significant difference in the need-motivation structure personalities of girls and boys of the same age group, which, according to testing, are characterized by such peculiarity: persistence in achieving goals; dissatisfaction with achieved; constant desire to do better than before; tendency to be very fond of work; the desire in any case to experience the satisfaction of success; inability to work poorly; the need to invent new methods of work in the performance of the most ordinary things. The percentage of boys and girls of I-II courses of this level of need for achievement was the same – 17.7%, which indicates a small difference in motivational factors according to gender distribution. Differences between the levels of correlation in boys and girls we found out exactly in comparison with the actual indicators of health levels, physical fitness and psychological tests for determining the level of risk attitude and achievement need. When comparing students' self-esteem in terms of physical qualities, health, appearance, and global self, the correlations were quite high and similar.

Thus, in contrast to boys ( $r = 0.38$  – the average level of communication), a weak level of correlation was determined by us between the actual indicators of health and the actual indicators of physical fitness in girls ( $r = 0.18$ ) (Table 2, 3).

Table 2: Correlation table of communication coefficients G (Goodman's communication measure) between indicators characterizing the level of health, physical fitness and self-esteem (girls)

|                       | Fitness level | Attitude to risk | Level of health | Need to achieve | Self-esteem |                    |                   |             |                 |             |                       |          |             |           |             |
|-----------------------|---------------|------------------|-----------------|-----------------|-------------|--------------------|-------------------|-------------|-----------------|-------------|-----------------------|----------|-------------|-----------|-------------|
|                       |               |                  |                 |                 | Health      | Coordinate quality | Physical activity | Slenderness | Sport abilities | Global self | Appearance assessment | Strength | Flexibility | Endurance | Self-esteem |
| Fitness level         | 1,000         | 0,081            | 0,181           | -0,151          | 0,111       | 0,022              | -0,058            | -0,045      | -0,003          | 0,017       | 0,014                 | -0,042   | 0,007       | 0,006     | 0,023       |
| Attitude to risk      | 0,081         | 1,000            | 0,046           | -0,084          | -0,161      | -0,078             | 0,042             | -0,041      | -0,154          | -0,101      | -0,090                | -0,019   | -0,027      | -0,095    | -0,053      |
| Level of health       | 0,181         | 0,046            | 1,000           | 0,024           | 0,049       | 0,229              | 0,183             | 0,096       | 0,112           | 0,127       | 0,027                 | 0,066    | 0,118       | 0,075     | 0,001       |
| Need to achieve       | -0,151        | -0,084           | 0,024           | 1,000           | 0,113       | 0,116              | 0,091             | 0,058       | 0,035           | -0,000      | 0,159                 | 0,082    | -0,026      | -0,023    | 0,024       |
| Health                | 0,111         | -0,161           | 0,049           | 0,113           | 1,000       | 0,188              | -0,002            | 0,483       | 0,165           | 0,194       | 0,278                 | 0,279    | 0,108       | 0,126     | 0,467       |
| Coordinate quality    | 0,022         | -0,078           | 0,229           | 0,116           | 0,188       | 1,000              | 0,280             | 0,267       | 0,444           | 0,472       | 0,264                 | 0,364    | 0,421       | 0,433     | 0,189       |
| Physical activity     | -0,058        | 0,042            | 0,183           | 0,091           | -0,002      | 0,280              | 1,000             | 0,118       | 0,615           | 0,393       | 0,293                 | 0,448    | 0,375       | 0,472     | 0,054       |
| Slenderness           | -0,045        | -0,041           | 0,096           | 0,058           | 0,483       | 0,267              | 0,118             | 1,000       | 0,259           | 0,428       | 0,476                 | 0,262    | 0,201       | 0,215     | 0,606       |
| Sport abilities       | -0,003        | -0,154           | 0,112           | 0,035           | 0,165       | 0,444              | 0,615             | 0,259       | 1,000           | 0,694       | 0,385                 | 0,741    | 0,537       | 0,703     | 0,118       |
| Global self           | 0,017         | -0,101           | 0,127           | -0,000          | 0,194       | 0,472              | 0,393             | 0,428       | 0,694           | 1,000       | 0,627                 | 0,664    | 0,510       | 0,596     | 0,397       |
| Appearance assessment | 0,014         | -0,090           | 0,027           | 0,159           | 0,278       | 0,264              | 0,293             | 0,476       | 0,385           | 0,627       | 1,000                 | 0,400    | 0,433       | 0,320     | 0,560       |
| Strength              | -0,042        | -0,019           | 0,066           | 0,082           | 0,279       | 0,364              | 0,448             | 0,262       | 0,741           | 0,664       | 0,400                 | 1,000    | 0,562       | 0,607     | 0,264       |
| Flexibility           | 0,007         | -0,027           | 0,118           | -0,026          | 0,108       | 0,421              | 0,375             | 0,201       | 0,537           | 0,510       | 0,433                 | 0,562    | 1,000       | 0,467     | 0,250       |
| Endurance             | 0,006         | -0,095           | 0,075           | -0,023          | 0,126       | 0,433              | 0,472             | 0,215       | 0,703           | 0,596       | 0,320                 | 0,607    | 0,467       | 1,000     | 0,098       |
| Self-esteem           | 0,023         | -0,053           | 0,001           | 0,024           | 0,467       | 0,189              | 0,054             | 0,606       | 0,118           | 0,397       | 0,560                 | 0,264    | 0,250       | 0,098     | 1,000       |

The connection coefficients with the significance level  $p < 0.1$  are highlighted in red.

Table3: Correlation table of communication coefficients G (Goodman's communication measure) between indicators characterizing the level of health, physical fitness and self-esteem (youngster)

|                  | Fitness level | Attitude to risk | Level of health | Need to achieve | Self-esteem |                    |                   |             |                 |             |                       |          |             |           |             |
|------------------|---------------|------------------|-----------------|-----------------|-------------|--------------------|-------------------|-------------|-----------------|-------------|-----------------------|----------|-------------|-----------|-------------|
|                  |               |                  |                 |                 | Health      | Coordinate quality | Physical activity | Slenderness | Sport abilities | Global self | Appearance assessment | Strength | Flexibility | Endurance | Self-esteem |
| Fitness level    | 1,00          | 0,22             | 0,38            | 0,07            | -0,13       | -0,06              | 0,08              | -0,16       | 0,04            | 0,06        | 0,06                  | -0,09    | 0,11        | 0,01      | -0,09       |
| Attitude to risk | 0,22          | 1,00             | 0,00            | 0,32            | -0,05       | -0,12              | -0,16             | 0,24        | -0,14           | 0,36        | 0,21                  | -0,03    | -0,12       | -0,01     | 0,32        |
| Level of health  | 0,38          | 0,00             | 1,00            | 0,01            | -0,16       | -0,05              | 0,21              | -0,16       | 0,24            | 0,08        | 0,01                  | -0,06    | 0,05        | 0,21      | -0,26       |

|                       |       |       |       |       |       |       |       |       |      |      |      |       |       |       |       |
|-----------------------|-------|-------|-------|-------|-------|-------|-------|-------|------|------|------|-------|-------|-------|-------|
| Need to achieve       | 0,07  | 0,32  | 0,01  | 1,00  | 0,02  | -0,14 | -0,13 | 0,27  | 0,04 | 0,00 | 0,22 | -0,08 | -0,18 | -0,11 | 0,30  |
| Health                | -0,13 | -0,05 | -0,16 | 0,02  | 1,00  | 0,53  | 0,20  | 0,43  | 0,35 | 0,34 | 0,28 | 0,46  | 0,17  | 0,33  | 0,58  |
| Coordinate quality    | -0,06 | -0,12 | -0,05 | -0,14 | 0,53  | 1,00  | 0,29  | 0,26  | 0,45 | 0,48 | 0,38 | 0,45  | 0,50  | 0,40  | 0,40  |
| Physical activity     | 0,08  | -0,16 | 0,21  | -0,13 | 0,20  | 0,29  | 1,00  | 0,19  | 0,69 | 0,55 | 0,22 | 0,54  | 0,38  | 0,60  | 0,15  |
| Slenderness           | -0,16 | 0,24  | -0,16 | 0,27  | 0,43  | 0,26  | 0,19  | 1,00  | 0,31 | 0,37 | 0,43 | 0,21  | 0,15  | 0,21  | 0,54  |
| Sport abilities       | 0,04  | -0,14 | 0,24  | 0,04  | 0,35  | 0,45  | 0,69  | 0,31  | 1,00 | 0,57 | 0,26 | 0,67  | 0,51  | 0,67  | 0,13  |
| Global self           | 0,06  | 0,36  | 0,08  | 0,00  | 0,34  | 0,48  | 0,55  | 0,37  | 0,57 | 1,00 | 0,52 | 0,64  | 0,47  | 0,56  | 0,27  |
| Appearance assessment | 0,06  | 0,21  | 0,01  | 0,22  | 0,28  | 0,38  | 0,22  | 0,43  | 0,26 | 0,52 | 1,00 | 0,38  | 0,28  | 0,16  | 0,42  |
| Strength              | -0,09 | -0,03 | -0,06 | -0,08 | 0,46  | 0,45  | 0,54  | 0,21  | 0,67 | 0,64 | 0,38 | 1,00  | 0,50  | 0,63  | 0,24  |
| Flexibility           | 0,11  | -0,12 | 0,05  | -0,18 | 0,17  | 0,50  | 0,38  | 0,15  | 0,51 | 0,47 | 0,28 | 0,50  | 1,00  | 0,27  | 0,07  |
| Endurance             | 0,01  | -0,01 | 0,21  | -0,11 | 0,33  | 0,40  | 0,60  | 0,21  | 0,67 | 0,56 | 0,16 | 0,63  | 0,27  | 1,00  | 0,18  |
| Self-esteem           | 1,00  | 0,22  | 0,38  | 0,07  | -0,13 | -0,06 | 0,08  | -0,16 | 0,04 | 0,06 | 0,06 | -0,09 | 0,11  | 0,01  | -0,09 |

The connection coefficients with the significance level  $p < 0.1$  are highlighted in red.

The boys had a statistically significant connection between indicators of risk achievement and risk ratio ( $R = 0.32$ ); in girls such a connection was not observed, indicating caution and restraint of the latter. In the boys, the actual level of physical health at a low level had a connection with indicators of self-assessment of physical activity and sports abilities ( $r = 0.21$ ) and ( $r = 0.24$ ), while in girls such a connection in these indicators was not observed, but their actual physical health indicator had a low correlation with self-esteem of coordination qualities ( $r = 0.23$ ) and global "Self" ( $r = 0.54$ ). Thus, the highest level of communication was recorded in boys and girls in the self-assessment of strength, endurance, flexibility, and self-assessment of athletic ability ( $r = 0.67$ ) and ( $r = 0.74$ ), ( $r = 0.51$ ) and ( $r = 0.54$ ), respectively.

The connection between the global "Self" estimate, the level of physical activity and self-esteem of sports abilities in boys and girls were also at a high level ( $r = 0.57$ ) and ( $r = 0.69$ ), ( $r = 0.69$ ), and ( $r = 0.62$ ) respectively. This indicates a fairly high level of awareness of students about the level of development of their own physical qualities.

The analysis of correlation matrices of self-assessment of appearance with indicators of health assessment, coordination, strength qualities, flexibility, endurance, physical activity, sports abilities was at the average correlation level within ( $r = 0.31-0.69$ ) for both boys and girls. At the average level, there was a connection of coordination qualities with athletic ability ( $r = 0.45$ ) and ( $r = 0.44$ ), respectively. At the average level, both boys and girls had a relationship between self-esteem, assessment of appearance and slenderness ( $r = 0.54$ ) and ( $r = 0.61$ ), ( $r = 0.43$ ) and ( $r = 0, 56$ ). The correlation between indicators of risk and self-esteem of sports abilities was rather weak in girls ( $r = 0.15$ ), while in the boys it was higher ( $r = 0.36$ ), which indicates an active life position of boys in relation to the need for self-realization.

#### 4 Conclusion

Analysis of interconnections of the components of the functioning of organism of students as a holistic system using methods of mathematical analysis allows developing the ratio of the components of pedagogical actions. The application of correlation analysis allowed us to identify the relationships and interdependencies between indicators of physical health, physical fitness, and self-esteem of students, which has a high degree of importance in developing a system of pedagogical influences to improve organizational and managerial and

educational conditions for independent exercise of students for purposeful self-improvement.

The relationship between the level of physical fitness, interest, general level of self-awareness and interests of students allowed assessing the prerequisites for modernizing the process of physical education in order to find the most optimal means and methods of physical culture, identifying individual interests and needs for physical education and sports during school hours and in independent classes during distance learning.

The opinion of scientists that the most informative is social interaction was confirmed, since only in the course of activity the consciousness of the person is formed and developed. In the presented study, almost half of 98 (45%) first- and second-year girls are engaged in various types of physical activity to be able to find a circle of like-minded people and communicate with them, boys of this subgroup in this subgroup were much more than 62 (60%), and already to III - IV course, the vast majority of 108 (58%) girls and 69 (66%) boys enjoy socializing with friends during physical education and sports. Namely, such positive dynamics testifies to the effective work of specialists in this field and stimulates researchers to systematize old and develop new methods of researching interests and motives and encourage young people to a conscious attitude to exercise and the chosen sport.

The greatest level of motivational influence on the development and self-improvement of young people has physical potential. The connection between the level of physical fitness, interest, general level of self-awareness and interests of students is based on biological and social factors, theoretical and methodological substantiation, as well as learning factors that stimulate, shape, and support purposeful behavior.

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Therefore, the process of physical education should be managed not only during practical classes, but also should contain tools and methods that ensure the development of functional capabilities of all subsystems to the optimal level in any form of organization of classes, providing full disclosure of physical potential, which has the property to change the nature of functioning on the basis of the properties of self-regulation and adaptation of the organism and psych regulation. Such behavior

is based on a clear awareness of own goals and values. Reliance on one's own values generally provides additional resilience to the individual.

The more these values coincide with the generally accepted ones, the stronger the internal platform of the individual, which is responsible for external actions, and this is one of the possible options for adaptive change. Awareness of a person's degree of responsibility for own development and realization of own talent indicates that this person has all the prerequisites for self-development, and adequate assessment of the situation and own behavior; this is the path to self-realization – the path of self-development.

Further research will be devoted to the development of a set of educational and methodological support for the innovative process of physical education in universities with distance learning.

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#### Primary Paper Section: A

#### Secondary Paper Section: AM