

Formation of sustainable development competencies in the training of specialists in the field of physical culture and sports

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Abstract. The relevance of the article is due to the need to develop sustainable development competencies when training specialists in the field of physical culture and sports. A responsible attitude towards the environment, social issues and economics allows graduates to actively participate in solving the problems of the modern world. The purpose of the article is to determine the elements of the educational program that form the competencies of sustainable development during training in specialties in the field of physical culture and sports. The main research method is correlation-regression analysis, using as a result indicator the number of students who received an “excellent” grade in disciplines that form sustainable development competencies, and as factor indicators characterizing the completeness of the educational program. As a result of the assessment, the overall significance of the identified factors for the formation of sustainable development competencies in the training of specialists in the field of physical culture and sports was obtained in the range of average values - 0.36. Correlation analysis showed that the indicator “Number of practical, laboratory, seminar classes hours” has the greatest connection with the formation of sustainable development competencies - 0.48, which characterizes the importance of students’ personal motivation to master areas of training in the field of physical culture and sports. In the range of the average level of connection with a high level of sustainable development competencies are the factors “Number of full-time hours” - 0.45, “Number of student independent work hours” - 0.48 and “Number of practice hours” - 0.41.

1 Introduction

The concept of sustainable development, which determines the ways of human existence without significant burden on the environment, requires constant improvement of implementation methods in relation to a specific area of human activity. Higher education institutions play a dual role in the implementation of the sustainable development concept: firstly, universities carry out research work, the results of which make it possible to bring human activity closer to the requirements of sustainable development, and secondly, universities carry out the formation of sustainable development competencies among

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students [1]. Until recently, the basic model of graduate competencies was an international model of competencies that corresponded to trends in sustainable development, including the competencies of integrative thinking, the ability to anticipate changes in natural and economic systems, and the competencies of implementing transformations. In modern conditions, it is necessary to form a Russian model of sustainable development competencies focused on achieving national interests [2, 3]. Such a model of sustainable development competencies should include the graduate's self-organization skills, self-adaptation when changing social conditions, skills to counter economic, social and environmental risks, and the ability to develop and implement solutions in the field of economic, social and environmental policies. The formation of this model of competencies in universities is implemented through a set of activities included in the educational program.

The purpose of the article is to determine the elements of the educational program that form the competencies of sustainable development during training in specialties in the field of physical culture and sports.

2 Materials and Methods

The result of training in bachelor's and specialty programs in the field of physical culture and sports involves the formation of the following competencies of sustainable development: the ability for self-organization and self-education, the ability to use the means of a chosen sport to develop healthy lifestyle skills when conducting recreational, health-improving activities with people of different sexes and age, the ability to use the spiritual values accumulated in the field of physical culture and sports, the knowledge gained about the personality traits of students for the education of patriotism, the prevention of deviant behavior, the formation of a healthy lifestyle, the need for regular physical education, etc. Assessment of the maturity of these competencies is carried out during intermediate certification in disciplines, practice and final certification of the graduate. Conventionally, the level of developed competencies can be divided into three levels: low, rated satisfactory and below; medium, rated good and below; high, rated excellent. The analysis was carried out according to Federal State Educational Standards 3+ in the following areas of undergraduate training: 03.49.01 Physical education, 03.49.02 Physical education for persons with health problems, 03.49.03 Recreation and sports and health tourism, 03.49.04 Sports.

For the purposes of the study, the maturity of the sustainable development competencies of students who received an excellent grade during the intermediate certification in disciplines, practice and final certification of the graduate is recognized [4,5]. The authors believe that achieving the highest indicator in the assessment corresponds to the knowledge and skills necessary to implement the tasks of sustainable development in professional activities, a "sustainable" worldview, a responsible attitude towards the environment, and civic responsibility.

Next, a base of assessment factors is formed by analyzing curricula in the specified areas of training. Information was collected on the following indicators:

- number of disciplines for the entire period of study,
- number of hours in disciplines during the entire course of study,
- number of student independent work hours,
- number of practice hours.

At the next stage, a factor model and regression equation are constructed [6], including as a result indicator the number of students who received an "excellent" grade in disciplines that form sustainable development competencies, and as factor indicators characterizing the educational program.

3 Research Results and Discussion

The results of the formation of the research information base are presented in Table 1.

Table 1. Information base for studying the formation of sustainable development competencies in the training of specialists in the field of physical culture and sports.

Number of students who received an excellent grade	Total number of disciplines for the entire training course	Number of full-time hours	Number of practical, laboratory, seminar hours	Number of student independent work hours	Number of practice hours
36	39	390	840	370	280
45	50	700	1620	700	700
45	50	800	1800	760	800
41	60	840	1850	800	800
29	60	940	2170	900	940
33	50	715	1670	730	750
36	50	750	1700	730	730
41	40	750	1675	750	750
39	25	820	1850	780	900
29	40	890	2110	890	1000
31	50	750	1740	730	760
37	30	700	1620	700	730
31	60	850	1930	700	830
32	28	780	1750	730	770
38	30	730	1640	720	720
29	60	880	2030	880	920
41	30	660	1540	680	670
38	40	810	1830	750	810
41	50	730	1700	700	760
25	30	1000	2350	950	1000
26	30	740	1750	780	760
27	60	780	1730	720	780
38	60	680	1500	680	700
30	60	900	2040	860	900
41	50	670	1540	690	670
30	50	900	2130	920	950
28	50	780	1820	800	800
29	70	780	1750	760	740
35	50	710	1630	690	700
44	30	700	1580	680	720
35	50	900	2030	880	900

The results of regression analysis for determining the factors for the formation of sustainable development competencies in the training of specialists in the field of physical culture and sports are presented in Table 2.

Table 2. Results of regression analysis of the formation of sustainable development competencies in the training of specialists in the field of physical culture and sports.

Regression statistics indicator	Indicator value
Plural R	0,608161
R-square	0,369859
Normalized R-squared	0,243831
Standard error	5,125343
Observations	31
Y-intersection	53,93974
Variable X 1	-0,06879
Variable X 2	0,09328
Variable X 3	-0,07358
Variable X 4	0,007105
Variable X 5	0,047013

As can be seen from the table, the overall importance of the identified factors for the formation of sustainable development competencies in the training of specialists in the field of physical culture and sports is in the range of average values (0.36). To clarify the role of each factor, we use paired correlation analysis; the results are presented in Table 3.

Table 3. Results of correlation analysis of the formation of sustainable development competencies in the training of specialists in the field of physical culture and sports.

Factors	Correlation coefficients
Total number of disciplines for the entire training course	0,19
Number of full-time hours	0,45
Number of practical, laboratory, seminar hours	0,48
Number of student independent work hours	0,44
Number of practice hours	0,41

The results obtained showed that the indicator “Number of practical, laboratory, seminar hours” is most closely related to the formation of sustainable development competencies - 0.48, which characterizes the importance of students’ personal motivation to master areas of training in the field of physical culture and sports. In the range of the average level of connection with a high level of sustainable development competencies are the factors “Number of full-time hours” - 0.45, “Number of student independent work hours” - 0.48 and “Number of practice hours” - 0.41,

When mastering training programs in the field of physical culture and sports, a significant role is played by the student’s proactive position, the type and content of educational activities, and the inclusion of mastering sustainable development competencies in the process of performing practical classes, internships and independent work.

To summarize, we can draw the following conclusions and recommendations based on the data obtained:

Firstly, when developing educational programs in the areas of physical culture and sports, it is first of all necessary to pay attention to the topics of practical and seminar classes, to include the topics of sustainable development.

Secondly, obtaining sustainable development competencies should be revealed in the topics of students' independent work.

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