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The entering results of formation of valeological competence of future teachers in the course of physical education

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Purpose: *the research consists in development, justification and experimental check of theoretical-methodical bases of formation of valeological competence of the process of physical education of students of pedagogical higher educational institutions.*

Material & Methods: *the level of formation of valeological competence of future teachers in the course of physical education was determined by averaging of estimates by each experimental indicator during the skilled-experimental work. 497 students from 1 till 5 courses, 35 university graduates, working as teachers at schools of Vinnitsa, and 17 teachers of higher education institutions were involved in the forming experiment.*

Results: *the low level of formation of valeological competence of future teachers in the course of physical education in all skilled groups, participating in the pedagogical experiment, creates the objective need of introduction of the developed experimental model of formation valeological competence of future teachers in the course of physical education and complex of reasonable pedagogical conditions.*

Conclusions: *the carried-out entering test showed the similarity of experimental groups in the section of respondents on levels of formation of valeological competence, allows to consider output parameters leveled and to begin implementation of the chosen plan of experiment.*

Keywords: *future teacher, physical culture, pedagogical model, valueology, results of experiment, competence.*

Introduction

The experimental research of the put scientific problem consisted in check in practice of conceptual approaches and model of formation of valeological competence of future teachers in the course of physical education. The pedagogical experiment was aimed at approbation of the developed model of formation of valeological competence of future teachers in the course of physical education, including its main structural components; contents, which is expressed in set of educational programs and modules, didactic system of formation of valeological competence of future teachers in the course of physical education, criteria and conditions of effective realization of model of formation of valeological competence of future teachers in the course of physical education. The program of skilled-experimental work included three consecutive stages: stated, forming and appraisal-correcting.

Communication of the research with scientific programs, plans, subjects

The work is the component of complex scientific research of the chair of pedagogies of Kotsiubynskyi Vinnytsia State Pedagogical University name "Theoretic-methodical bases of pedagogical training of future teachers" (No. 0101U007274).

The purpose of the research:

developing, justification and experimental check, theoretic-methodical principles of formation of valeological competence of process of physical education of students of pedagogical higher educational institutions.

Material and Methods of the research

Participants. The forming stage of the experiment was carried out on the basis of Kotsiubynskyi Vinnytsia State Pedagogical University, Berdyansk state pedagogical university, V. Gnatyuk Ternopil national pedagogical university, Khmelnytskyi national university. 497 students from 1 on 5 courses, 35 university graduates, who work as teachers at schools of Vinnytsia, and 17 teachers of HEI were involved in the forming experiment.

Organization of the research. The forming stage of the pedagogical experiment was directed to the detection of nature of dynamics (positive, negative, stable) in heating-up period of valeological competence of future teachers in the course of physical education in the conditions of approbation of contents and mechanisms of realization of conceptual model, and also justification of technologies of diagnostics and development of valeological competence of future teachers.

Content of experimental activity in the course of the forming experiment included:

1. Developing, approbation and introduction in study of the competence-oriented educational programs within the realization of conceptual model of formation of valeological com-

petence of future teachers in the course of physical education.

2. Creation of valeological-professional educational space, which is pedagogical technology of enrichment and expansion of creative potential of educational opportunities, independently choosing and mastering, which the student projects his own individual educational space (educational design taking into account valeological aspect of professional activity). This task found the successful solution through the organization of activity of section of students' scientific society on the basis of Mikhail Kotsyubinsky Vinnytsia state pedagogical university. Results of individual design by students of valeological and professional educational space diagnostic were proved and correlated to stages of integration of valeological and professional education: acculturation, coadaptation and synergy, future teachers presented to models of formation of valeological competence in the course of physical education.

3. Control diagnostics of parameters of formation of valeological competence of future teachers in the course of physical education.

Statistical analysis. The level of formation of valeological competence of future teachers in the course of physical training was defined by averaging of estimates by each experimental indicator during the skilled-experimental work. Such scale was applied for this purpose: critical level of formation of the studied indicator was estimated at 0–0,5 points, low – at 0,75–1 points, average, – at 1,25–1,5 points, and high – at 1,75–2 points. Let's notice that all noted indicators accepted equal value which did not demand introduction of the weighing coefficients for formation of valeological competence of future teachers in the course of physical education.

Therefore, the general formula of definition of value of formation of valeological competence of future teachers in the course of physical education looks so:

$$C_{vc} = \frac{A_1 + A_2 + A_3 + A_4}{4} \quad (1)$$

where C_{VC} – change, which is necessary for calculation of measure of formation of valeological competence of future teachers in the course of physical education;
A_1 – estimation by knowledge indicator which make valeological competence of future teachers in the course of physical education;

Table 1

Level scale of assessment of measure of formation of valeological competence of future teachers in the course of physical education

The sum of estimates on indicators (A_1+A_2+A_3+A_4)	Meaning C_{VC}	Name of level
0	0	
1	0,25	critical
2	0,5	
3	0,75	low
4	1	
5	1,25	average
6	1,5	
7	1,75	high

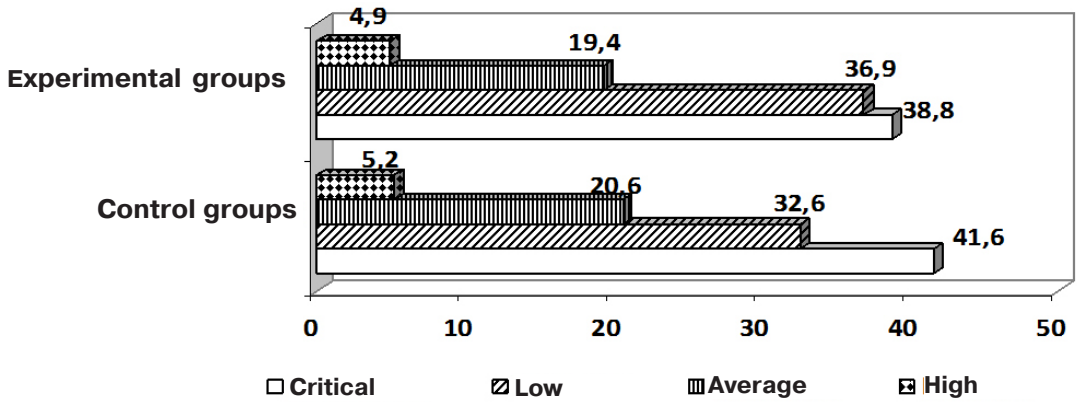
A_2 – estimation by ability indicator which make valeological competence of future teachers in the course of physical education;
A_3 – estimation by indicator of professionally-significant personal qualities which are included in structure of valeological competence of future teachers in the course of physical education;
A_4 – estimation by indicator of the valuable orientations included in structure of valeological competence of future teachers in the course of physical education.

Let's note that size C_{VC} is calculated by the formula (1) for any respondent who participates in the experiment. Depending on C_{VC}, the respondent is appropriated one of four levels of formation of valeological competence on the developed scale (tab. 1) in the course of the dissertation research.

Results of the research and their discussion

Results of the entrance test of all skilled groups are presented in tab. 2. Let's note that estimation was carried out by the group of experts with use of the appropriate diagnostic device, which was given earlier.

Let's note that assessment was carried out by the group of experts with application of the formula (1) of averaging of estimates on the data, which were provided earlier in tab. 2 (tab. 3).



Pic. 1. Results of the entrance test concerning formation of valeological competence of future teachers in the course of physical education in the skilled groups

Table 2

Result of the entrance test according to formation of valeological competence of future teachers in the course of physical education

Group	N-ber of stud.	Indicator	Levels							
			critical		low		average		high	
			abs.	%	abs.	%	abs.	%	abs.	%
EG-1	95	A_1 – knowledge	41	43,2	32	33,6	17	17,9	5	5,3
		A_2 – ability	40	42,1	34	35,8	18	18,9	3	3,2
		A_3 – professionally-significant personal qualities	39	41,1	29	30,5	21	22,1	6	6,3
		A_4 – valuable orientations	37	39,0	33	34,7	23	24,2	2	2,1
EG-2	99	A_1 – knowledge	44	44,4	28	28,3	20	20,2	7	7,1
		A_2 – ability	38	38,4	34	34,3	22	22,2	5	5,1
		A_3 – professionally-significant personal qualities	42	42,4	29	29,3	21	21,2	7	7,1
		A_4 – valuable orientations	46	46,4	28	28,3	19	19,2	6	6,1
EG-3	97	A_1 – knowledge	43	44,3	32	33,0	18	18,6	4	4,1
		A_2 – ability	39	40,2	36	37,1	17	17,5	5	5,2
		A_3 – professionally-significant personal qualities	37	38,2	36	37,1	21	21,6	3	3,1
		A_4 – valuable orientations	40	41,2	27	27,8	23	23,7	7	7,3
CG-1	101	A_1 – knowledge	40	39,6	37	36,6	17	16,8	7	7,0
		A_2 – ability	38	37,6	36	35,6	19	18,8	8	8,0
		A_3 – professionally-significant personal qualities	41	40,6	34	33,7	21	20,8	5	4,9
		A_4 – valuable orientations	39	38,6	35	34,6	23	22,8	4	4,0
CG-2	105	A_1 – knowledge	38	36,2	40	38,1	21	20,0	6	5,7
		A_2 – ability	41	39,0	37	35,2	22	21,0	5	4,8
		A_3 – professionally-significant personal qualities	39	37,1	45	42,9	18	17,1	3	2,9
		A_4 – valuable orientations	40	38,1	42	40,0	19	18,1	4	3,8

Table 3

Future teachers average result of the entrance test according to formation of valeological competence in the course of physical education

Group	Number of students	Levels							
		critical		low		average		high	
		abs.	%	abs.	%	abs.	%	abs.	%
EG-1	95	39	41,1	32	33,7	20	21,0	4	4,2
EG-2	99	42	42,4	30	30,3	21	21,2	6	6,1
EG-3	97	40	41,2	33	34,0	19	19,6	5	5,2
Together EC	291	121	41,6	95	32,6	60	20,6	15	5,2
CG-1	101	40	39,6	35	34,7	20	19,8	6	5,9
CG-2	105	40	38,1	41	39,1	20	19,0	4	3,8
Together CG	206	80	38,8	76	36,9	40	19,4	10	4,9

We will display total results for implementation of comparison in skilled groups (tab. 4).

Results of the entrance test in the skilled groups are represented graphically in pic. 1.

Results of the entrance test testified that most of respondents have critical (41,6%) and low (32,6%) levels of valeological competence (that makes about 74% of all set of respondents) by the beginning of the pedagogical experiment. This circumstance confirms need of the solution of the put problem, and especially it is staticized that these results are received at respondents, who have consciously chosen the direction of pedagogics, where the valeological direction is one of the basic components of professional study, and orientation to valeological values – fundamental factor of successful professional activity. Similar situation developed with each of indicators of valeological competence: 44% of respondents – have critical and 31,6% of respondents – low levels of formation of knowledge; 40,2% of respondents – critical and 35,7% – low levels of abilities; 40,6% of respondents – have critical and 32,3% – low levels of professionally significant personal qualities; 42,2% of respondents – have critical and 30,3% – low level valuable orientations.

Thus, results of the entrance cut testified the low level of formation of valeological competence of future teachers in the course of physical education, which confirms need of the solution of the put problem by introduction of the developed by us model of formation of valeological competence of future teachers in the course of physical education and complex of the formulated pedagogical conditions.

Before displaying process of introduction of model of formation of valeological competence of future teachers in the course of physical education and pedagogical conditions, feasible check, whether on the business skilled groups with the distributions of respondents noted above by levels of for-

Table 4

Result of the entrance test on total data of formation of valeological competence of future teachers in the course of physical education in control and experimental groups

Group	Number of respondents	Levels							
		critical		low		average		high	
		abs.	%	abs.	%	abs.	%	abs.	%
Experimental groups: EG-1, EG-2, EG-3	291	121	41,6	95	32,6	60	20,6	15	5,2
Control groups: CG-1, CG-2	206	80	38,8	76	36,9	40	19,4	10	4,9

Table 5

Values of criterion χ^2 K. Pearson on the entrance test

Groups	The obtained meaning	Critical meaning of changeable χ^2 K. Pearson by the levels of significance	
		0,01	0,05
CG-1 and EG-1	0,364		
CG-1 and EG-2	0,438		
CG-1 and EG-3	0,095		
CG-2 and EG-1	0,624		
CG-2 and EG-2	0,003	11,345	7,815
CG-2 and EG-3	0,686		
CG-1 and EG-2	0,518		
CG-1 and EG-3	0,144		
CG-2 and EG-3	0,362		

mation of valeological competence are elected, have no statistically significant divergences and can be considered as similar by the contingent.

The comparison of the level of development of valeological competence of future teachers in the course of physical training in experimental (EG-1, EG-2, EG-3) and control (CG-1, CG-2) groups by criterion was carried out for the purpose of statistical experiment of data of pedagogical experiment χ^2 K. Pearson, which empirical value was calculated by the formula:

$$\chi^2_{empir.} = N \cdot M \cdot \sum_{i=1}^{L} \frac{\left(\frac{n_i}{N} - \frac{m_i}{M}\right)^2}{n_i + m_i} \quad (2)$$

where N and M – the number of respondents of experimental and control groups;
n_i, m_i – the number of respondents of experimental and control groups who have shown i-level of knowledge;
L – the number of the allocated levels.

Criterion χ^2 K. Pearson give the chance to check zero hypothesis H_0 of reliability of coincidence of motivation in experimental and control groups.

The assumption is accepted for "zero hypothesis" H_0 that distribution of respondents by the levels of formation of valeological competence of the skilled groups, which participate in the stated pedagogical experiment, is identical. By the terms that empirical value of variables χ^2 during the paired comparison of the skilled groups turn out less than tabular, the hypothesis is considered as proved. These uses of criterion χ^2 K. Pearson are displayed in tab. 5.

As use of criterion χ^2 K. Pearson testified, at significance value $\alpha=0,01$ and $\alpha=0,05$ and numbers of degrees of liberty of variation $v=k-1$, where k – quantity of estimates, $v=4-1=3$ by the table "Critical values of criterion χ^2 for the levels of the statistical importance $\alpha \leq 0,05$ and $\alpha \leq 0,01$ at different quantity of degrees of liberty", received $\chi^2_{crit}(\alpha=0.01)=11,345$, $\chi^2_{crit}(\alpha=0.01)=7,815$.

There are no statistically essential divergences in formation of valeological competence (therefore "the zero hypothesis" H_0 is proved) between the experimental groups, which participate in the pedagogical experiment, as all experimental values below of the tabular. That gives the grounds to use the plan of the research, which was chosen earlier and to explain correctly the results, which were received during the pedagogical experiment.

Conclusions

The carried-out entrance test testified:

– the low level of formation of valeological competence of future teachers in the course of physical education in all skilled groups, who participate in the pedagogical experiment, which approves objective need of introduction of the developed experimental model of formation of valeological competence of future teachers in the course of physical education and complex of reasonable pedagogical conditions;

– the viability of the experimental groups in division of respondents by the levels of formation of valeological competence which allows considering initial parameters equaled and becomimg implementation of the chosen plan of the experiment.

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