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TO THE EFFECTIVENESS OF PEDAGOGICAL TECHNOLOGY FOR FUTURE MARKETOLOGIST LEADERSHIP COMPETENCE FORMATION IN THE PROCESS OF INTERDISCIPLINARY TRAINING

The results of the formative stage of the pedagogical experiment on future marketologist leadership competence formation in the process of interdisciplinary training basically conducted in Alfred Nobel University, Dnipro State Agrarian and Economic University in 2020-2021 are presented in the following chart.

According to the results of the research, students from both groups showed some changes in the indicators of the criteria in the process of university training. It should be noted that in the process of university training the number of students of experimental group with low level of leadership competence decreased most significantly. There has been a significant increase in the number of students with average level. The number of students who reached a high level has also increased.

Analysing the general level of leadership competence formation the following dynamics was recorded: low level (from 38% to 10.5%), medium level (from 50.5% to 73.5%), high level (from 11.5% to 16%). In the control group the changes were very insignificant (low and high level) or practically none (medium level). Dynamics for the control group: low (former – 35.6%, became 33.5%), medium (former – 52%, became 52.1%), high (former – 12.4%, became 14.4%).

Here is the analysis of the changes according to the criteria outlined above.

To confirm the hypothesis of the research, which is the assumption that the process of forming the leadership competence of a future marketologist can be successful as a result of the implementation of the appropriate pedagogical technology, we have proved the following:

Table 1

The results of the formative stage of the pedagogical experiment on future marketologist leadership competence formation

№	Components	Групи	Levels of development,%					
			Low		Medium		High	
			CE	FE	CE	FE	CE	FE
1	Motivational	CG	31,7	29,5	57,3	57,9	11,0	12,6
		EG	33,2	9,2	56,0	75,9	10,8	14,9
2	Cognitive	CG	38,2	37,2	51,4	53,0	10,4	9,8
		EG	39,7	10,4	49,8	77,9	10,5	11,7
3	Operational	KG	32,3	30,2	52,0	53,0	15,7	16,8
		EG	38,0	9,7	49,7	67,8	12,3	22,5
4	Personality	CG	39,9	37,2	47,3	44,5	12,8	18,3
		EG	41,2	12,7	46,7	72,2	12,1	15,1
Average level		CG	35,6	33,5	52	52,1	12,4	14,4
		EG	38	10,5	50,5	73,5	11,5	16

Table 2

Levels of leadership competence formation (motivational criterion)

Levels of leadership competence formation (Motivational criterion)	Experimental group %			Control group %		
	before exper.	after exper.	increase	before exper.	after exper.	increase
High	10,8	14,9	+1,2	11,0	12,6	+1,6
Medium	56,0	75,9	+28,2	57, 3	57,9	+ 0,6
Low	33,2	9,2	-29,3	31,7	29,5	-2,2

Table 3

Levels of leadership competence formation (cognitive criterion)

Levels of leadership competence formation (Cognitive criterion)	Experimental group %			Control group %		
	before exper.	after exper.	increase	before exper.	after exper.	increas e
High	10,5	11,7	+1,2	10,4	9,8	-0,6
Medium	49,7	77,9	+28,2	51, 4	53,0	+ 2
Low	39,7	10,4	-29,3	38,2	37,2	-1

Table 4

Levels of leadership competence formation (operational criterion)

Criteria indicators and levels of leadership competence formation (Operational criterion)	Experimental group %			Control group %		
	before exper.	after exper.	increase	before exper.	after exper.	increase
Organizing skills						
High	13,2	23,5	+10,3	15,64	15,8	+0,16
Medium	54,2	70,2	+16	54, 3	55,78	+1,48
Low	33,3	9,8	-23,5	31,05	28,1	-2,95
Analytical skills						
High	11,63	20,94	+9,31	16,7	17,7	+1
Medium	40,2	56,2	+16	44,3	45,3	+1
Low	48,17	9,74	-38,43	38,7	36	-2,7
Communicative skills						
High	11,95	22,45	+10,5	14,9	15,5	+0,6
Medium	54,7	76,7	+22	56,9	57,9	+1
Low	33,35	9,79	-23,56	29,44	27	-2,44
General level of operational component development						
High	12,3	22,5	+10,2	15,7	16,8	+1,1
Medium	49,7	67,8	+18,1	52	53	+1
Low	38,0	9,7	-28,3	32,3	30,2	-2,1

Table 5

Levels of leadership competence formation (personality criterion)

Criteria indicators and levels of leadership competence formation (Personality criterion)	Experimental group %			Control group %		
	before exper.	after exper.	increase	before exper.	after exper.	increase
Leadership traits						
High	19,6	22,3	+1,14	18,9	22,9	+4
Medium	52,9	73,3	+20,4	54,3	51,6	-2,7
Low	27,5	4,4	-23,1	26,8	25,5	-1,3
Reflection						
High	11	13,2	+2,2	12,2	16,7	+4,5
Medium	38,1	69,47	+31,3	48	43,4	– 4,6
Low	50,9	17,33	-33,5	39,8	39,9	+ 0,1
Empathy						
High	11,95	12,2	+0,25	10,98	15,8	+4,82
Medium	54,7	73,51	+18,81	39,3	38,7	-0,6

Table 5 (continuance)

Low	33,35	14,29	-19,06	29,44	45,5	-16,06
Emotional intelligence						
High	10,7	12,7	+2	11,2	17,8	+6,6
Medium	46,9	72,7	+25,8	47,4	44,3	-3,1
Low	42,4	14,6	-27,8	41,4	37,9	-3,5
General level of personality component development						
High	12,1	15,1	+3	12,8	18,3	+5,5
Medium	46,7	72,2	+25,5	47,3	44,5	-2,8
Low	41,2	12,7	-28,5	39,9	37,2	-2,7

1) control and experimental groups are statistically different in criteria indicators;

2) changes observed in the experimental group at the end of the formative experiment are significant enough compared to the summative experiment.

In order to confirm the first assumption, we compared the data obtained for the experimental and control groups using Pearson's criterion.

The result: χ^2_{emp}= **26.964**, critical value χ^2 at v=2

v	p	
	0.05	0.01
2	**5.991**	**9.21**

Differences between the two distributions can be considered significant if χ^2_{emp} reaches or exceeds $\chi^2_{0.05,}$ and even more significant if χ^2_{emp} reaches or exceeds $\chi^2_{0.01}$.

Thus, the differences between control and experimental groups are statistically plausible, since χ^2_{emp} exceeds the critical values (hypothesis H1).

To confirm the above, we also conducted calculations by Fisher criterion. The number of trial participants with the result "effective" (CG – 117 (66.5%), EG -154 (89.5%)) to the number of trial participants with "non-effective" (CG-59 (33.5%), EG-18 (10.5%)) gives the result φ^*_{emp} = 5.363, which is in the significance area, since $\varphi^*_{cr} = \begin{cases} 1{,}64, & p \le 0{,}05 \\ 2{,}31, & p \le 0{,}01 \end{cases}$. Thus the H0 hypothesis is rejected.

To confirm the other assumption about the significance of changes in the experimental group at the end of the formative experiment in comparison

with the summative experiment, we again compared the obtained data by means of the Pearson criterion. The differences in the experimental group before and after the assessment proved to be statistically significant (empirical value of the criterion $\chi^2_{emp.} = 36.573$ as it is greater than the critical values of 5.991 and 9.21.

Thus, at the end of the formative experiment we compared the indicators of the control and experimental groups and proved that these groups are not equal in terms of the specified criteria. These facts are a valid confirmation that the process of leadership competence formation under the conditions of its organization as an appropriate pedagogical technology is effective.

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ЗАСТОСУВАННЯ ОНЛАЙН-СЕРВІСУ SPARKOL ДЛЯ ВІЗУАЛІЗАЦІЇ НАВЧАЛЬНОЇ ІНФОРМАЦІЇ У ЗАКЛАДАХ ПРОФЕСІЙНОЇ (ПРОФЕСІЙНО-ТЕХНІЧНОЇ) ОСВІТИ

Інформатизація освіти спонукає до оволодіння майбутніми і працюючими педагогами професійного навчання засобами візуалізації та подання інформації у цікавому, привабливому та інформативному форматі. Цьому сприяє представлення навчальних знань у вигляді презентацій з використанням анімації. Великі обсяги інформації та даних у процесі професійного навчання доцільно представляти у вигляді анімованих відео та візуальних зображень, що сприяють підвищенню інтересу та мотивації до навчання.