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THE LEVEL OF EFFECTIVENESS OF DEVELOPING ECONOMIC COMPREHENSION IN STUDENTS

Abstract:

Introduction. In the world, the need to ensure the quality and competitiveness of higher education institutions by developing the competence of educational personnel and students is growing. The model of "Competence-based learning" in the context of the "Sustainable Development Goals (SDGs)" adopted at the 70th anniversary session of the "European Higher Education Area" (EHEA) and the United Nations General Assembly is specified. It is important to carry out scientific research on the creation and improvement of modern teaching methods by developing the creative potential, economic competence and creativity of the educational staff.

Research methods. The article uses methods such as literature analysis, observation, generalization, questionnaire, test, interview, pedagogical experiment, mathematical-statistical processing used in pedagogical research.

Results and discussion. Increasing the quality of personnel training in the higher education system, the methodology of developing economic competence in future specialists, its pedagogical-psychological aspects, these can be seen in scientific research works of scientists of our republic like Kh.F. Rashidov, Sh.E. Kurbonov, N.A. Muslimov, B.S. Nuridinov, N.N. Azizkhodjaeva, U.Sh. Begimkulov, R.H. Djuraev, F.M. Zakirova, D.Sayfurov, A. Musurmanova, M.B. Urazova, Z.K. Ismailova, Sh.S. Sharirov, G.A. Yeldasheva, M.H. Mirsolieva and others.

Summary. Thus, the results of the experiment on improving knowledge and skills related to the development of economic competence among students of higher educational institutions have been successfully completed. The level of training of the participants of the experimental groups regarding economic compensation is high, which confirms the effectiveness of our methodology.

Key words: competency, economic competency, economic activity, general economic sciences, private economic sciences, functional economic sciences, respondent students, comparative analysis, mathematical-statistical analysis, Student-Fisher method, experimental group, control group.

Introduction.

In the world, the need to ensure the quality and competitiveness of higher education institutions by developing the competence of educational personnel and students is growing. The model of "Competence-based learning" in the context of the "Sustainable Development Goals (SDGs)" adopted at the 70th anniversary session of the "European Higher Education Area" (EHEA) and the United Nations General Assembly is specified. It is important to carry out scientific research on the creation and improvement of modern teaching methods by developing the creative potential, economic competence and creativity of the educational staff.

One of the global tasks of the innovative development of higher education in the world is the formation of economic competence among students. According to international pedagogical experiences, extensive research is being conducted on the application of innovations in the educational process in the qualitative organization of the higher education system and the scientific justification of teaching principles in the process of training personnel in the field of economics. In this process, there is a need to improve the mechanisms for the development of students'

economic competence, to expand their didactic capabilities in accordance with the content of the higher education system and to improve teaching methods.

Research methods. The article uses methods such as literature analysis, observation, generalization, questionnaire, test, interview, pedagogical experiment, mathematical-statistical processing used in pedagogical research.

Results and discussion. Increasing the quality of personnel training in the higher education system, the methodology of developing economic competence in future specialists, its pedagogical-psychological aspects, these can be seen in scientific research works of scientists of our republic like Kh.F. Rashidov, Sh.E. Kurbonov, N.A. Muslimov, B.S. Nuridinov, N.N. Azizkhodjaeva, U.Sh. Begimkulov, R.H. Djuraev, F.M. Zakirova, D.Sayfurov, A. Musurmanova, M.B. Urazova, Z.K. Ismailova, Sh.S. Sharirov, G.A. Yeldasheva, M.H. Mirsolieva and others.

Issues of development of economic competency, its pedagogical-psychological aspects, principles and technologies and the role of the approach in personal activity and professional development, as well as conceptual issues of professional self-improvement were seen in research works of the scientists of the countries of the Commonwealth of Independent States: T. Bazarov, A. Derkash, I. Zimnyaya, E. Zeer, N. Kuzmina, Y. Kudryavseva, A. Markova, V. Slastenin, G. Kalkova, N. Ilina, G. Jirkova, Y. Yejak and others in addition to this considerable amount of research has been conducted on its impact on the educational environment.

Leading economists of our country A.Sh. Bekmurodov, V. Zaripov, N. N. Makhmudov, M.R. Rakhmatov, B.Sh. Rizaev, B.B. Salimov, M.A. Tillyakhodjaev, S.R. Kosimov, R.Kh. Khalikova, K. Khonkeldieva, F. Azimova, M.B. Boltaboev, R. Isaev, G.R. Madrakhimova, A.M. Razikov, B. Tursunov, M. Khudoykulov, S. Yusupov, U. Yusupov, M. Abdusalyamov, T.M. Akhmedov, S.V. Chepel, A. Soliev, Sh.I. Mustafakulov, Sh.Kh. Nazarov, A.B. Nizamov, D.A. Ortikova, B. Ruzmetov, N.A. Khashimova, A.M. Sodikov, S.S. Zokirov, A.M. Kodirov, F.T. Egamberdiev and others in their scientific work, they researched the theoretical and methodological foundations of management in various spheres and branches of the economy, issues of development of economic cooperation, theoretical and methodological aspects of the regional economy.

The direction of economic education in higher educational institutions the issues of development of economic retention among students have not been studied in detail and pedagogical recommendations for use in the educational process have not been developed.

After gaining independence, our country is developing by choosing its own development path. This path is the path of large-scale reforms aimed at building a democratic legal state, a socially oriented market economy and a prosperous civil society. The information revolution and the formation of the information society fundamentally changed the role of knowledge in socio-economic development.

In modern conditions, the main type of economic activity is the production of information and its use for the efficient functioning of the economy. The main production factor is knowledge and this knowledge is delivered through the education system. At the basis of the modern educational process is the concern for the well-rounded development of the learner's personality.

The implementation of the development strategy of New Uzbekistan aims to establish modern production using advanced innovative and scientific technologies. In particular, the international legal documents adopted in this regard, including the United Nations World Declaration "Higher Education of the 21st Century", UNESCO's programmatic document "Reform and Development of Higher Education" and Euroura, guarantee the uniformity of the quality of higher education institutions. The Bologna Declaration, adopted in order to ensure that it occupies an important place in improving the quality of education worldwide. According to its main formal characteristics, higher education meets the standards recommended by the International Standard Classification of Education (ISTC) adopted by the General Conference of UNESCO in 1997. According to these documents, it is important to raise the content and quality of higher education to the international level, to improve the competence of future teachers by introducing advanced

teaching methods using modern pedagogical and information and communication technologies in learning.

To date, ample conditions have been created for the formation of the legal basis of the national education system in our republic. In turn, the reforms made it possible to improve the structure and content of education.

As the President of our country, Sh.M. Mirziyoyev, stated, "We consider it our primary duty to improve the activities of all links of the education and training system based on the requirements of today's times."¹

The socio-economic development of the country, the well-being and standard of living of the members of the society, the mutuality of various economic interests, first of all, directly depends on the knowledge of economic relations and laws and a conscious attitude to their implementation. Accordingly, it is necessary to ensure that a person is economically knowledgeable, observant and conscious, that is, economic competence. Anticipating the actions and economic processes that need to be implemented, in short, by monitoring the ever-changing business and external environment and its increasing impact on people, businesses, countries and the world as a whole, economic acumen is one of the qualities of a highly spiritual person, which cannot be imagined without deep economic knowledge and skills.

Regarding the issue of using innovative and information communication technologies in economic education, it can be seen in the scientific research works of a number of scientists working in the fields of economics, education and information communication technologies of the Republic and abroad.

Deepening of economic reforms and modernization of economy in our country requires development of innovation system. The role of the educational system in the acquisition of knowledge, scientific research, acceleration of socio-economic development and ensuring its economic security is incomparable. The stable development of the education sector is the guarantee of ensuring rapid socio-economic development of our country. In order to achieve it, it is important to ensure the effective operation of educational institutions based on the improvement of economic relations in the higher education system. Therefore, in the period of liberalization and modernization of the economy in the Republic of Uzbekistan, ensuring the rational use of production factors is a leading factor in achieving high economic growth rates.

Today, future economists' need for the most natural communication, to be aware of its secrets and to be able to effectively influence others has increased and there are several reasons for this.

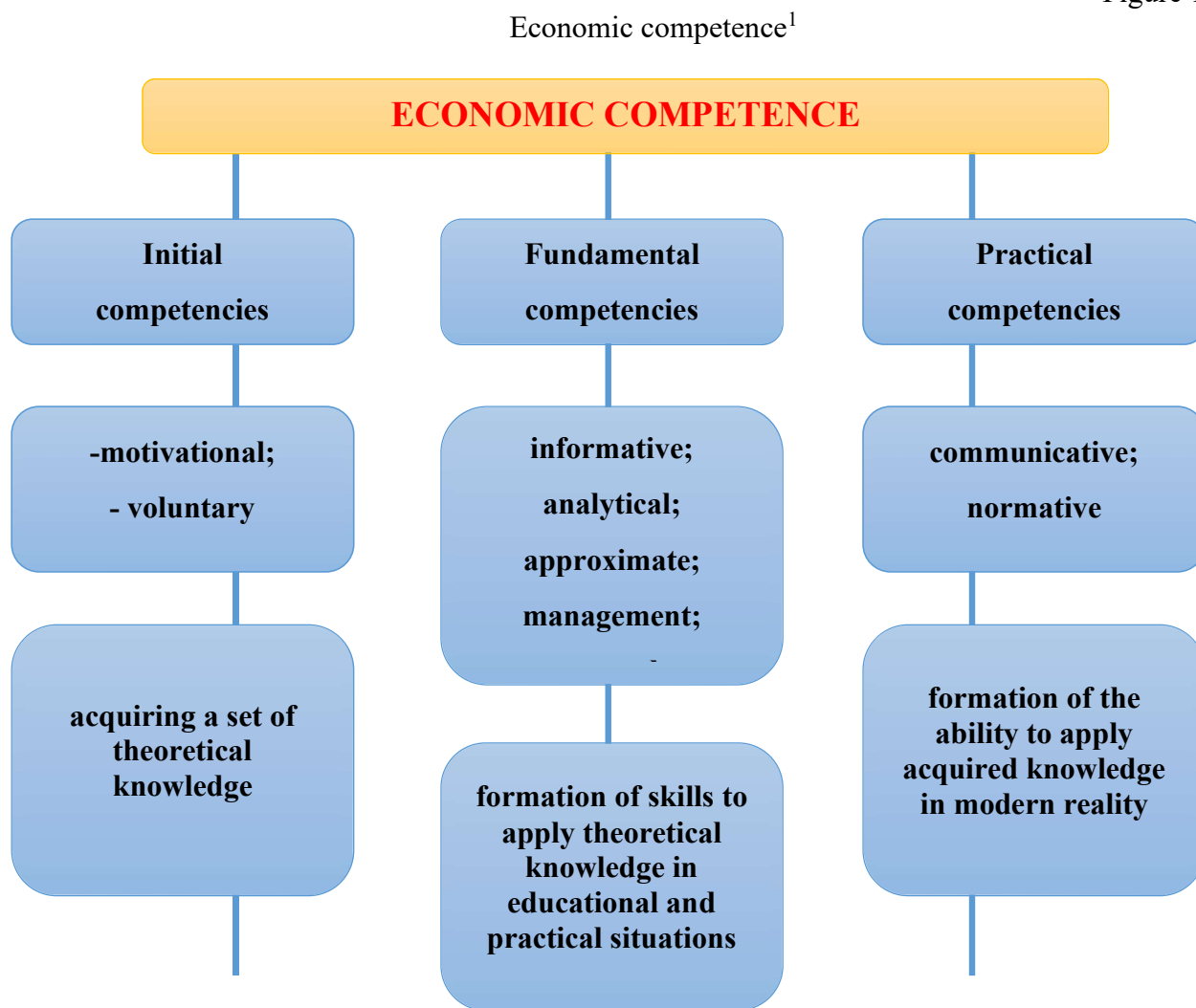
First, we are moving from an industrial society to an information society. The blindness of the information demanded to sort out the information related to the interest of the person, to have the right relationship with it. Information has become the phenomenal commodity in the 21st century and this, in turn, will change the speed and intensity of the transmission of necessary information to people.

Secondly, the vision of a group of people working in different fields of activity, the increase in the number of students in higher education institutions, the relevance of relations and communication between them requires not simple communication in a dense information environment, but communication based on professional knowledge.

Therefore, in recent years, the number of educational fields and specialties has increased, which are called socionomic group professions, in which the "person-to-person" dialogue determines the effectiveness of the activity. For example, pedagogical activity, management system, various services, marketing and others are among them. In such conditions, the increase in the deliberate communication skills of people determines the labor productivity.

¹Mirziyoyev Sh.M. Qonun ustuvorligi va inson manfaatlarini ta'minlash – yurt taraqqiyoti va xalq farovonligining garovi. – T.: «O'zbekiston», 2017. – 22-b.

Figure 1



Characteristics of the future specialist's economic competence

At present, it has become an objective necessity to develop students' economic competences, to make independent choices and decision-making skills in them. It is known that the structural changes in the economy, in turn, require students to improve their qualifications and skills, adapt to the demands of the labor market and strive to improve their qualifications. Therefore, it is necessary to teach these students independent research, thinking, comparison of different views, analysis, drawing conclusions. It is taught, first of all, in the educational process, that is, the set of forms and methods of teaching this system constitutes a single didactic complex determined by the objective laws of the educational process.

The object of study of economic sciences can be conditionally divided into three groups in terms of scope and coverage of economic knowledge:

1. General economic sciences. They study the economy, the application of economic laws and principles inherent in it as a whole. These include, first of all, the science of economic theory. It serves as a basis for all economic sciences. Knowing the rules of economics begins with studying this subject. In vocational education, "Basics of Economic Knowledge", "Basics of Economics", and "Economic Theory" are studied in higher education institutions.

2. Private economic sciences. These are microeconomics, macroeconomics, national economy, social economy, labor economy, etc., which study one or another area of the economy.

¹ <https://academic.oup.com/icc/article-abstract/3/3/687/696633?redirectedFrom=PDF>

3. Functional economic sciences. These subjects include accounting, finance, auditing, financial analysis, taxation, insurance, management, banking, etc. Usually, they are studied as blind specialist subjects. Accordingly, each economic science studies its system based on its general philosophical, general economic and other special features, using the methods specific to this science. In the process of studying science, not only the methods used in studying the object of science, but also the methods used in studying science and organizing the knowledge process are of great importance. So, in the process of teaching, bringing science to the minds of students, encouraging them to learn, interest them and directing them to work on themselves depends largely on the methods used in it.

Improving the process of developing economic retention in students is a complex educational process, which requires the implementation of educational activities aimed at organizing this process based on various forms, methods, tools and technologies. This encourages students to actively participate in activities in this direction.

Pedagogical activities aimed at improving the process of development of economic competence among students of higher educational institutions are divided into two groups according to their nature, i.e. educational activities and pedagogical activities aimed at educating the individual.

It was found that the possibilities of improving the process of development of economic competence among students of higher educational institutions are very large. Most of the topics expressed in the content of this activity serve to find a positive solution to the research problem. In particular, the ability of students to act independently, to think and work independently, to maintain their independence in various situations, to be able to hold themselves in the process of organizing events based on national and universal values, to be respectful to their comrades, to be humble, qualities such as self-confidence, mutual support, awareness of economic knowledge, harmony show that they have improved economic competence.

The economic forum, virtual economic laboratories, activities of cheerleaders and geniuses, organized based on the mass participation of students, which appear as an important component of pedagogical activity aimed at improving the process of economic retention in students, have great potential. The possibility of these activities is characterized by the students' wishes and needs, the existence of certain conditions, as well as the ability, skills and creative thinking skills of the organizers.

In the course of the research, it was tried to make wide use of the possibilities of classroom and non-auditory training. Particular attention was paid to the organization of these trainings based on a specific program.

One of the main factors ensuring the development of economic competence in future specialists is raising the educational process organized in higher education institutions to a high level.

In the organization of practical work aimed at improving the process of development of economic competence among students of higher educational institutions, based on methods such as question-and-answer, roundtable discussions, meetings and surveys among the students working in these educational institutions, experience-test work was carried out. In the course of experimental work, it was found that students have the following deficiencies in terms of economic competence development:

- informational literature in the direction of economy in higher educational institutions cannot fully satisfy today's needs;
- insufficient teaching-methodical scientific resources to improve the process of development of economic competence among students;
- lack of sufficient conditions for creative activity of students in educational institutions;
- insufficient development of students' knowledge of economic competence and skills of free economic thinking;
- the attitude of some students to economic participation, the level of activity is at a lower level;

- lack of implementation of sufficient pedagogical and information technologies in the process of teaching economic subjects in higher educational institutions;
- such as lack of virtual economic laboratories and personal training rooms for the development of economic knowledge in higher education institutions.

The main goal of the experimental work organized to improve the process of development of economic competence among students of higher educational institutions is to study the level of economic competence before and after the experiment and to achieve the full development of economic competence among students of these educational institutions.

Based on this goal, we determined the following tasks during the experimental work:

1. To determine the current state of development of economic competence among students of higher education institutions based on the organization of several types of questionnaires.
2. Arming students with information about the concepts of economic co-retention, its essence, social and personal importance, ways and factors of its development.
3. To determine the pedagogical factors that ensure the improvement of the process of development of economic competence among students of higher educational institutions.
4. To determine the resources that ensure the improvement of the process of development of economic competence among students of higher educational institutions.
5. To determine the reasons that have a negative impact on the development of economic competence in students and to determine the measures to eliminate them.
5. To achieve the students' understanding of the meaning and importance of economic co-retention.
6. Creating the necessary pedagogical-psychological conditions for the development of students' responsibility for the development of economic competence and practical activity in this regard.
7. To ensure that students organize practical activities of socio-educational importance, based on such feelings as economic consciousness, economic literacy, economic thinking, economic skills, which are considered important components of economic competence.

The following steps were taken to solve the set tasks:

- a) questionnaire surveys were organized among respondent students;
- b) direct pedagogical observations were organized in order to study the activity of respondent students;
- d) the veracity of the results obtained based on the organization of interviews with respondents was checked;
- e) the results determined during the study were summarized, analyzed and relevant conclusions were drawn.

In the course of the research, a total of 562 students from higher education institutions, including Bukhara, Karshi and Samarkand state universities, were involved in the experimental work and their knowledge of the concepts of economic co-retention and their attitude to it were tested. Students were divided into experimental and control groups according to the principle of random selection. In the experimental groups, work was done on the basis of a questionnaire expressing the concepts of economic co-retention and a methodology for determining their knowledge. In the control groups, general information about the problem under study was given. Deeper and more comprehensive knowledge was given in the experimental group.

The answers to the questions of both groups of students were evaluated in accordance with the requirements of rating control, namely:

- 100 - 86 points - 5 grades;
- 85-71 points - 4 marks;
- 70 -55 points - 3 grades.

At the beginning of the experiment, the level of knowledge of the students involved in the experimental work on a series of questions was as follows (Table 1) .

Table 1.

Demonstration of students' mastery of knowledge on economic concepts before the experiment

Groups	Number of students	Level of knowledge acquisition		
		high	medium	lower
Experience	274	78	94	102
Control	288	66	105	117

The results of this experiment show that it is necessary to organize the process of developing economic competence among students of higher education institutions based on the requirements of the times and to achieve a guaranteed result by using certain innovative pedagogical technologies. These innovative pedagogical technologies, first of all, are created on the basis of organizing the process of development of economic content based on new content and requirements. The development of economic cooperation is especially organized based on the requirements of the Resolution of the Resident of the Republic of Uzbekistan dated April 1, 2021 on "Measures for the further improvement of state policy in the field of science and innovative development of state management - RQ-5047 " and it is desirable to establish a transfer.

At all stages of the educational process in higher education institutions, the main aspect of the application of the main innovative educational technologies of the whole system is the orientation towards achieving a guaranteed goal. The use of innovative pedagogical technologies guarantees the achievement of the set goal.

Today's educational reforms require the study of modern advanced technologies of the educational process and their introduction into the educational process. This, in turn, requires future specialists to apply and develop these technologies in the field of education.

The approach to the design methods created within the framework of the application of innovative pedagogical technologies helps to effectively and creatively plan the process of economic development, to enrich it with new ideas and to evaluate their results.

In this case, it is appropriate to use more forms, methods and technologies related to the development and improvement of economic competence among students.

For example, in higher education institutions, it can be usefully used in conducting the following pedagogical activities with students:

It is possible to organize such activities as "Frugality is the demand of the times", "Do you know the economy?", "Young economists are the heirs of the future", "The causes of the economic crisis in the family and their prevention" for the development of economic competence in students. Also, it is desirable to launch the distribution of books, booklets and brochures that will allow students to develop this economic competence.

In the process of these activities, not only the student's theoretical and practical readiness for independent work is checked, but also opportunities are created to enrich the student's creative abilities.

As a result of the study, the data of the control group was compared with the data of the experimental group. Comparative analysis, as mentioned above, was determined using methods such as self-assessment, rating, tests, observation, interview, questionnaires, interview (survey). Comparative analysis showed that the results of the control group were more accurate than those of the experimental groups. Especially at the end of the experiment, we saw positive results. In the experimental group, 42% of the students scored high, while in the control group, 34% did. So, it shows that the system of pedagogical influence was effective in the experiment: if at the beginning of the experiment, 78% of the students who showed a high level of economic comprehension development, at the end of the experiment, it was 94%. The change in the level of development of economic co-retention in students in the control group was very small. Therefore, the educational influence in these groups was not based on a specific goal, but on the basis of general requirements. Students in the control class do not have enough knowledge of economic concepts.

In the experimental groups, as a result of economic participation, students set new goals for themselves, independence and initiative. They were able to cultivate economic qualities such as thrift and it was found that they achieved a high level in terms of honesty, correctness, honesty, humanity, patriotism, diversity of opinions and acquired the skills of self-management. In general, the knowledge of economic competence formed the economic consciousness of the individual, the self-management skills of the students were developed and the acquired knowledge, skills and abilities were allowed to be used in practice.

Scientific confirmation of these conclusions can be seen from the results of the experiment in Table 2 :

Table 2

A comparative analysis of the improvement of the level of development of economic competence in students

Criteria for developing the level of economic competence in students	The results of the preliminary diagnosis of the study				The results of the final diagnosis of the study			
	Control group		Experimental group		Control group		Experimental group	
	The number of students	In percentage %	The number of students	In percentage %	The number of students	In percentage %	The number of students	In percentage %
Knowing the essence of concepts such as "economy", "competence", "economic competence"	38	14	43	17	65	24	128	49
Formation of knowledge about economic comretention	34	12	37	14	68	24	115	44
The formation of thrift, organization, initiative, entrepreneurial willpower qualities	42	16	31	12	69	25	115	44
Determining perceptions of economic understanding, knowledge, skills of economic activity	33	13	31	12	76	28	128	49
Being able to apply economic knowledge and skills in his life	35	13	29	11	78	28	138	52.5
Formation of attitude to economic knowledge and experiences in socio-economic development	43	15.6	42	16	87	32	105	40

Conclusion.

Thus, the results of the experiment on improving knowledge and skills related to the development of economic competence among students of higher educational institutions have been successfully completed. The level of training of the participants of the experimental groups regarding economic compensation is high, which confirms the effectiveness of our methodology.

At the end of the experiment, the results of the experiment, which was conducted to ensure the improvement of the process of development of economic competence among students of higher educational institutions based on the requirements of the time, took the following form (Table 3).

The Student-Fisher method was chosen for the mathematical-statistical analysis of these data.

Table 3.

The results of the experiment

Student achievement levels	In the experimental group m=274Xi		In the control group n=288 Yi	
	At the beginning of the experiment	At the end of the experiment	At the beginning of the experiment	At the end of the experiment
High	78 (29%)	94 (34.3%)	66 (23%)	68 (23.6%)
Medium	94 (34%)	124 (45.2%)	105 (36%)	114 (39.5%)
Lower	102 (37%)	56 (20.5%)	117 (41%)	106 (37%)

If we take the results of the assessment in the experimental and control classes as selections 1 and 2, respectively, we have the following variation series.

1 – selection Xi: high; medium; lower;
(experimental group) ti: 94; 124; 56;
t=274

2 – selection Yi: high; medium; lower;
(control group) ni: 68; 114; 106.
n=288

Let's draw a diagram corresponding to these choices (Figure 1):

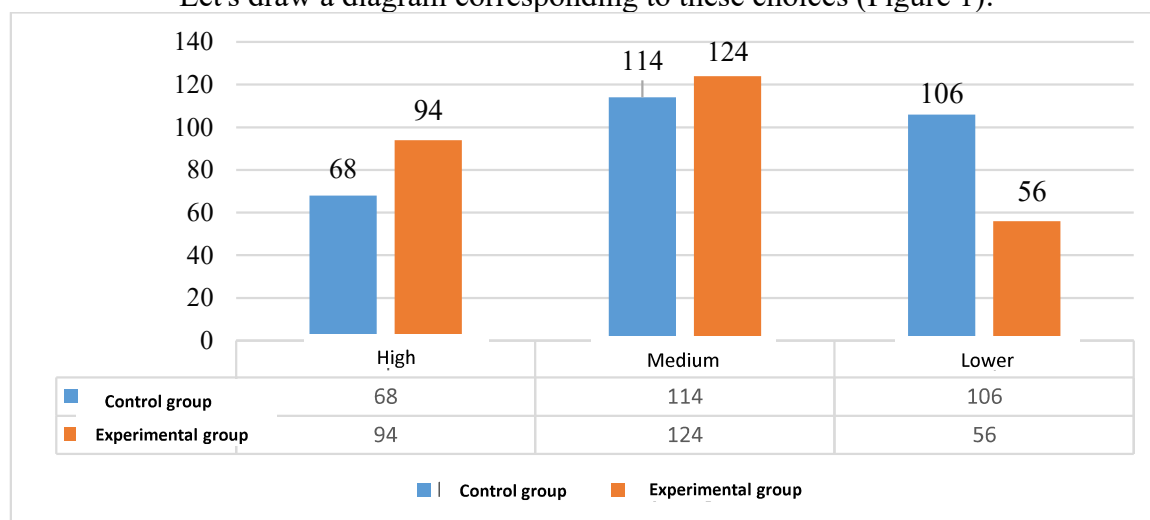


Figure 2. Diagram of the level of development of economic competence in students

It can be seen from the graphs that the modal values of the experimental and control groups are MT=5 and MH=3, respectively, that is, the difference between them is sufficient and

MT>MH. This, in turn, presupposes that these selections and corresponding mean values also satisfy the condition $X > Y$. We calculate them based on the following formulas :

$$\bar{X} = \frac{1}{n} \sum_{i=1}^{n=3} n_i x_i = \frac{1}{274} (94 \cdot 5 + 124 \cdot 4 + 56 \cdot 3) = \frac{1}{274} (470 + 496 + 168) = \frac{1134}{274} = 4,1$$

$$\bar{Y} = \frac{1}{n} \sum_{i=1}^{n=3} n_i y_i = \frac{1}{288} (68 \cdot 5 + 114 \cdot 4 + 106 \cdot 3) = \frac{1}{288} (340 + 456 + 318) = \frac{1114}{288} = 3,8$$

Therefore, the average mastery in the experimental group is higher than in the control class:

$$\bar{X} > \bar{Y}$$

Now we calculate the coefficients of dispersion of both groups. For this purpose, we first calculate the sample variances:

$$D_m = \sum_{i=1}^{n=3} n_i \frac{(x_i - \bar{x})^2}{n-1} = \frac{94(5-4,1)^2 + 124(4-4,1)^2 + 56(3-4,1)^2}{274} = \frac{94 \cdot 0,81 + 124 \cdot 0,01 + 56 \cdot 1,21}{274} = \frac{76,4 + 1,24 + 67,7}{274} = \frac{145,34}{274} \approx 0,53$$

$$D_H = \sum_{i=1}^{n=3} n_i \frac{(y_i - \bar{y})^2}{n-1} = \frac{68(5-3,8)^2 + 114(4-3,8)^2 + 106(3-3,8)^2}{288} = \frac{68 \cdot 1,44 + 114 \cdot 0,04 + 106 \cdot 0,64}{288} = \frac{97,92 + 4,56 + 67,84}{288} = \frac{170,32}{288} \approx 0,59$$

From these results, we subtract the root mean square deviations:

$$\tau_m = \sqrt{0,53} \approx 0,72 \quad \tau_H = \sqrt{0,59} \approx 0,76$$

Based on these, we calculate that both classes show this variation:

$$\delta_m = \frac{\tau_m}{\bar{X}} = \frac{0,72}{4,1} \approx 0,17 \quad \delta_H = \frac{\tau_H}{\bar{Y}} = \frac{0,76}{3,8} \approx 0,2$$

If we consider the significance level of a statistical sign, then the Larlas function calculates the critical point of statistics from the table

$$\Phi(t_{kp}) = \frac{1-2\alpha}{2} = \frac{1-2 \cdot 0,05}{2} = \frac{0,9}{2} = 0,45$$

we determine from the equation: $t_{kp} = 1,67$ If we draw from this the reliable deviations of the assessment:

$$\Delta_m = t_\gamma \cdot \frac{D_m}{\sqrt{n}} = 1,67 \cdot \frac{0,53}{\sqrt{274}} = 1,67 \cdot \frac{0,53}{16,5} \approx 1,67 \cdot 0,032 \approx 0,053$$

and in the control group:

$$\Delta_k = t_\gamma \cdot \frac{D_k}{\sqrt{n}} = 1,67 \cdot \frac{0,59}{\sqrt{288}} = 1,67 \cdot \frac{0,59}{16,9} = 1,67 \cdot 0,034 \approx 0,056$$

If we draw a confidence interval for the experimental group from the obtained results:

$$\bar{Y} - t_\gamma \cdot \frac{D_m}{\sqrt{n}} \leq a_x \leq \bar{Y} + t_\gamma \cdot \frac{D_n}{\sqrt{n}}$$

$$4,1 - 0,053 \leq a_x \leq 4,1 + 0,053 \quad 4,04 \leq a_x \leq 4,15$$

confidence interval for the control group:

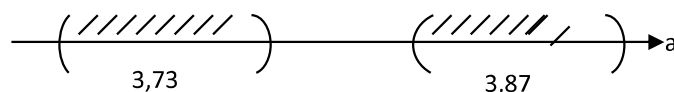
$$\bar{Y} - t_\gamma \cdot \frac{D_m}{\sqrt{n}} \leq a_y \leq \bar{Y} + t_\gamma \cdot \frac{D_n}{\sqrt{n}}$$

$$3,8 - 0,056 \leq a_y \leq 3,8 + 0,056 \quad 3,74 \leq a_y \leq 3,85$$

Let's put it geometrically:

4,05

4,15



So, with a significance level of $\alpha=0.05$, it can be said that the average grade in the experimental group is higher than the average grade in the control class.

Thus, according to the results of experimental work, the level of development of spiritual-educational activity was verified.

Based on the above results, we calculate the quality of experimental works.

We know $\bar{X} = 4,1$; $\bar{Y} = 3,8$; $\Delta_m = 0,053$; $\Delta_H = 0,056$ is equal to

Here are some of the qualities:

$$K_{yc\delta} = \frac{\bar{X} - \Delta_m}{\bar{Y} + \Delta_H} = \frac{4,1 - 0,053}{3,8 + 0,056} = \frac{4,04}{3,85} = 1,04 > 1;$$

$$K_{\delta\delta} = (\bar{X} - \Delta_m) - (\bar{Y} - \Delta_H) = (4,1 - 0,053) - (3,8 - 0,056) = 4,04 - 3,74 = 0,3 > 0;$$

From the obtained results, it can be seen that the criterion for evaluating the effectiveness of teaching is greater than one, and the criterion for evaluating the level of knowledge is greater than zero. It is known that the results of the experimental group are higher than those of the control group.

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