Information and Communication Technologies in the Professional Training of Future Specialists in the Specialty 38.05.02 “Customs Business”

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Abstract. The main condition for the effective functioning of the higher education system is to improve the quality of professional training of graduates. The use of information and communication technologies (hereinafter referred to as ICTs) in the process of professional training of future specialists contributes to increasing the motivation for students to acquire professional knowledge and skills and, as a result, improving the quality of education. The article considers the features of the use of ICT in the professional training of future customs specialists, analyzes the impact of ICT on moral and legal self-determination, presents the results of experimental work on the problem of pedagogical support for the moral and legal self-determination of a future customs specialist in the process of professional training at a university using specialized training software. It is proved that the formation of the structural components of the moral and legal self-determination of future customs specialists is a dynamic process; its effectiveness depends on the quality of pedagogical support. The use of ICT in the process of professional training of future customs specialists provides students with the methods and forms of scientific thinking, contributes to the deep assimilation of knowledge, the formation of independence, the ability to make moral choices within the legal field; leads to students’ awareness of the need for continuous self-education, independent improvement of the theoretical and legal framework, the ability to analyze and summarize the facts and information studied.

Keywords: Information and Communication Technologies in Education, IT-Technologies, Software, Moral and Legal Self-Determination of Future Customs Specialists, Pedagogical Support, Experimental Work.

1 Introduction

The main resource for the development of mankind in the modern world is information. It significantly affects the development of all sectors and spheres of society: science, social life, education. Information technologies provide access to a huge
amount of information, the ability to exchange this information, the opportunity and comfort of training, regardless of time and location. In the information society, the processes of obtaining, processing, and analyzing information, generating knowledge are associated exclusively with information and communication technologies. The main values of modern society are information and the ability to work with it, professional knowledge and awareness in related fields of science and activity, independent thinking, and competence.

The higher education system is characterized by the active use of information technology as an integral part of the educational process, significantly increasing its efficiency [1].

A computer equipped with a teaching program is the main direction of the development of teaching aids. The need for the informatization of education as one of the spheres of the life of society is beyond doubt. The rapid development of the capabilities of the Internet has led the majority of teachers (teachers, professors) to rethink the role of computer technologies, their importance for the education system. The teacher, realizing the possibilities of ICT, uses new technologies to achieve the required educational results, to ensure a high-quality learning process.

In this regard, the relevance of scientific research and analysis of methodology, new technologies, and practices of using modern information and communication technologies (hereinafter - ICT), focused on achieving learning goals in educational institutions of higher education, is increasing [21; 22; 25]. The process of professional training of future customs specialists requires the use of a set of pedagogical actions, techniques, methods, teaching aids that ensure high efficiency of vocational training at a university, pedagogical support of moral and legal self-determination of an individual [2]. Teaching practice shows that the first place for teachers is not the content of knowledge, which quickly becomes obsolete and requires constant updating, but the technology of acquiring knowledge. The problems of using ICT in higher education are of increased scientific and practical interest, which is reflected in the works of Russian and foreign classics of scientific informatics, originating from cybernetics and mathematics (A.I. Berg, N. Viner, A.P. Ershov, P. Landa, S.A. Lebedev, D. Neumann, and others).

Russian and foreign scientists Ya.A. Vagramenko, G.R. Gromov, E.V. Zvorygin, V.M. Monakhov, S. Papert, G. Kleiman, B. Hunter, and others. Didactic and methodological problems of computerization of education in Russia are reflected in the works of A.P. Ershova, B.S. Gershunsky, T.A. Sergeeva, I.V. Robert, N.F. Talyzina and others. The importance of modern ICT in the moral and legal education of young people is explored in the works of V.I. Kudashova, B.S. Sadulayeva, O. V. Sviridova, I. V. Usik, S.I. Chernykh, etc. [20; 21; 22; 23; 24].

2 The purpose

Recognizing the theoretical and scientific significance of the research carried out, we note that at present, many problems associated with the use of ICT in the professional
training of future specialists, the influence of ICT on the moral and legal self-determination of the individual, remain insufficiently studied.

The purpose of this article is to analyze the use of ICT in the professional training of future customs specialists, to substantiate the role of ICT in the moral and legal self-determination of an individual.

3 Presentation of the Main Material

The rapid spread of digital technologies opens up unlimited opportunities for access to network tools, materials, and services, which allows you to model your own information space. The use of ICT in education has, among other things, negative aspects: the formation of Internet addiction, the lack of active speech practice, limited social contacts, lack of practical experience, etc. [3]. Students are exposed to the positive and at the same time negative impact of Internet technologies. Gamification, storytelling, augmented and virtual reality, learning in collaboration, mobile learning has become today an integral part of the educational process in the higher education system. Therefore, it seems important to find methods of using ICT that allow you to achieve educational goals in the most optimal way [4].

Competent pedagogical support of students makes it possible to neutralize the negative consequences of using ICT in the process of professional training of future specialists. “A teacher, unlike a computer, is a person who has a systemic impact on a student. He is the bearer of moral values, meanings, ideas, and this impact is realized directly in contact, and not in the texts of educational assignments” [5]. Teachers see the main advantage of information technologies in the fact that they make it possible to organize a richer, productive, and interactive educational environment with almost unlimited possibilities. Modern teaching aids include the following:

- specialized computer training programs: testing systems, electronic teaching aids, laboratory workshops;
- training systems, which are formed on the multimedia technologies, various video equipment, and personal computers are used for their implementation; educational coworking space with a Web-space on the website of the educational institution;
- training and intelligent expert systems, the use of which is provided for various subject areas [6].

Many higher educational institutions implementing the “Customs business” training direction use the IT resources of customs operators in the professional training of future customs specialists. However, the experience of using ICT in the professional training of future customs specialists, the influence of ICT on the moral and legal self-determination of students do not have sufficient scientific substantiation. To analyze the use of ICT in the professional training of future customs specialists, the authors in the course of experimental work used software supplied by Alta-Soft LLC (Moscow).

The customs operator Alta-Soft is a leading developer of software for customs clearance of goods, warehouse logistics, and labeling of goods. This company not only develops specialized software (software - many programs, procedures, and rules
of the information processing system), on the customs operator, a Professional Education Center has been created and is successfully operating, where students successfully pass training on filling out a declaration for goods, analyze cases on the work of temporary warehouses, storage, bonded warehouses, and labeling of goods with the national digital marking system "Honest Mark" and the global marking system "GS1".

For several years the company has been providing specialized software to educational institutions of higher education for use in the professional training of future customs specialists. The software is used by higher educational institutions in the study of the following disciplines: "Commodity nomenclature of foreign economic activity", "Prohibitions and restrictions in foreign trade", "Customs declaration of goods and vehicles", "Workshop on the electronic declaration", "Customs payments", "Customs cost of goods ", etc. The software package for the specialty 38.05.02 "Customs" includes four programs:

1. "Alta-GTD" - a program with which you can fill out a declaration for goods, prepare commercial and transport documents for the international carriage of goods;
2. "Customs documents" - a normative and legal reference book, with the help of which a student can track changes in legislation in the field of foreign economic activity (hereinafter - foreign economic activity), in customs legislation;
3. "Tax" - a program that allows you to: select a product code with the commodity nomenclature of foreign economic activity, pre-calculate customs payments to be paid when importing or exporting goods, check permits for submission to customs authorities for imported/exported goods;
4. "Filler" - a program as a means of automating the filling of a declaration for goods for multi-item, multi-code deliveries.

In 2019, on the website of the customs operator "Alta-Soft" for students studying in the specialty 38.05.02 "Customs", the educational portal "Alta" was created. Teachers - employees of the Center for Vocational Education "Alta" (Moscow) have developed courses "Customs declaration of goods when they are placed under the procedure for release for domestic consumption: the moral and legal basis and practical aspects" and "Customs declaration of goods when they are placed under the export procedure: the moral and legal basis and practical aspects ". The courses are implemented in an online format, with an emphasis on the formation of legal identity and professional morality (ethics) among students.

In the course of online training on the educational portal "Alta", future customs specialists learn how to correctly fill out customs declarations for goods, commercial and transport documents [4]. The software allows you to emulate the process of filing a declaration to the customs authority, the process of passing all stages of customs control and customs clearance of goods, the process of conducting a dialogue with a virtual inspector, the process of issuing a declaration for goods ( emulation is the execution of a computer program on the platform to accurately simulate the state of the simulated program ). As part of the study of the course topics, attention is necessarily paid to the moral content of the future profession: students are offered for consideration a variety of cases, practical situational tasks, in the solution of which there is a need to make a reasonable moral and legal choice.
Thanks to the web-space created by the customs operator Alta-Soft, students have the opportunity to listen to lecture material, ask questions in a special chat, study the opinion of experts in the customs sphere and foreign economic activity, and also get acquainted with scientific materials [2]. The work of the educational portal is organized as follows: a teacher, curator, tutor, providing pedagogical support of a student, have the opportunity to constantly monitor his work: the time spent and stay on the portal, stages, speed, and levels of mastering training programs, difficulties in passing checkpoints [7]. This enables the teacher to conduct systematic monitoring of the knowledge gained, timely adjust the learning process, provide psychological and pedagogical assistance, and develop the reflexive skills of future customs specialists (see Fig. 1)

Students get the opportunity to adjust their educational individual trajectory, gain additional knowledge in their specialty, develop professional skills, improve the experience of social partnership, using the practice of cooperation. The practice of work has shown that passing training courses on the educational portal of the customs operator "Alta-Soft" helps to increase the efficiency and productivity of students, develop
their leadership qualities; makes the learning process more attractive; allows students to realize their merits, identify shortcomings, receive qualified help and expert assessment of members of the professional community; forms moral and legal consciousness; increases educational and professional motivation; stimulates the scientific activity of students. The program of each course is available in the public domain on the website of the Alta-Soft customs operator (alta.ru). A personal access code to the educational portal "Alta" and software for university students is provided free of charge if there is a corresponding request from a teacher, curator, or tutor. The technical specialists of the company help each student install the software.

4 Results

The productivity of the use of digital technologies in the professional training of future customs specialists, the influence of ICT on the moral and legal self-determination of students were tested during 2018-2021. In the course of experimental work to prove the effectiveness of the author's technology of using ICT in the course of pedagogical support of moral and legal self-determination of future customs specialists. The technology was implemented in three stages. The first stage - preparatory and diagnostic - was aimed at studying the state of the problem under study, setting goals and objectives for solving the problem [8], studying the basic level of moral and legal self-determination of students enrolled in the specialty 38.05.02 "Customs". Diagnostics of the basic level of moral and legal self-determination was carried out among students of 1-3 courses enrolled in the specialty 38.05.02 "Customs" (70 people in each course). Students of each course made up control and experimental group (35 people in each group). The results were reviewed and compared taking into account the year of study at the university. Diagnostics were carried out at the beginning of the academic year in October (2018-2019 academic year). The following methods were selected as diagnostic tools: "Motives for choosing a profession" (R.V. Ovcharova), "Scale of conscientiousness" (developed by V.M. Melnikov and L.T. Yampolsky based on the MMPI methods and the 16-factor questionnaire by R. Kettella), "Self-analysis/personality analysis" (OI Motikov), author's questionnaires, tests, etc.

At the preparatory and diagnostic stage of the experimental work, a low level of structural components [9] of the moral and legal self-determination of future customs specialists was revealed (the method of TI Ilyina). Most of the students of the studied groups as a motive for admission to the university designated "position in society in the future", "friends have higher education, I do not want to lag behind them", "it is important to have a diploma of higher education." As professional motives, the respondents single out material values - EG (72%), CG (73%) (averaged indicators for all courses). Students who are focused on self-realization in the profession demonstrate positive motivation to their specialty turned out to be in the EG - 28%, in the CG - 29%, respectively (averaged indicators for all courses). The analysis of the results obtained (the method of E.M. Pavlyutenkov) showed that only 30% of first-year students have social and cognitive judgments associated with the desire to master special knowledge, the desire to contribute to social progress through their work.
The result of the formation of the cognitive component of moral and legal self-determination was the calculation of the coefficient of assimilation by students of legal and moral knowledge (at the stage of the ascertaining experiment it was in the range from 0.4 to 0.8). Hence, it follows that the majority of the respondents had average and low levels of knowledge of the system of legal and moral norms, the basics of professional activity (EG - 65%; CG - 64%) (the average indicator for all courses). The majority of respondents, regardless of the year of study, single out material well-being as a life priority (83%), 35% single out “utilitarian and prestigious” as the main motives for choosing a profession, including the achievement of material well-being, while they do not identify work as a source of this welfare. According to the results of the assessment of the activity component of moral and legal self-determination, there was a tendency of growth of indicators depending on the year of study: 1 course (EG - 14%; CG - 11%); 2 course (EG - 20%; CG - 17%); 3 course (EG - 23%; CG - 20%). It turned out that the more a student studies at a university, the more independent and active he becomes, the more acutely he realizes the importance of professional duty, consciously observes moral and legal norms, and knows how to control himself [10].

Factor analysis showed that the majority of 1st year respondents with a high level of formation of the activity component of moral and legal self-determination had the maximum scores on the factors "collectivism", "diligence", "creative activity" (the interval of manifestation of the level - from 4.33 to 5.00) ... According to the results of testing, the majority of 1-st year students showed an average (3.66 - 4.32) and low (1.00 - 3.65) intervals of the levels of manifestation of factors. For 2nd year students, the priority was given to the factors "awareness of the importance of their work", "independence in overcoming difficulties", "collective responsibility", "purposefulness". For these factors, they scored the maximum number of points on the testing. Analysis of the results of diagnostics of the activity component of the moral and legal self-determination of 3-rd year students showed that the respondents begin to focus on moral factors (respect for people, sensitivity, mutual assistance) and volitional qualities (the desire to bring the started business to the end), realize the importance of legal knowledge.

When diagnosing the degree of self-assessment of the reflexive component of moral and legal self-determination, it was found that self-esteem among the majority of students is strongly overestimated (EG - 44%, CG - 47%), or, conversely, strongly underestimated (EG - 32%, CG - 33%) (averaged over all courses). The survey revealed the average level of reflection among students in all courses of study (EG - 38%, CG - 40%) (average indicator for all courses). At the same time, it turned out that more than 25% of the students participating in the ascertaining stage of the experiment (EG and CG) have a low level of reflection. Testing of students in the specialty "Customs" revealed a high percentage of inability to reflect. More than 30% of 1-st year students are not inclined to analyze their feelings, do not listen to their inner feelings, do not like to spend time alone with themselves (M. Grant's method). By the third year, students often think about the future, try to look at themselves through the eyes of other people, analyze their actions and those of those around them. Professional identification of students in terms of involvement in the results of the work of
the system of executive authorities - the Federal Customs Service of the Russian Federation - is one of the incentives for high-quality and conscientious performance of their duties, directly at the place of service [11, 12].

For further experimental work, students of the 3rd year were selected. At the organizational-activity and control-generalizing stages of the experimental work, the tasks of introducing the technology of using ICT were solved in the course of pedagogical support of the moral and legal self-determination of future customs specialists, its effectiveness was checked using mathematical calculations. The main means of implementing the technology were: a program for the formation of moral and legal culture of future customs specialists, which complements educational and educational plans, systematizes and optimizes the work of teachers, structures the moral and legal self-determination of a future customs specialist; the use of ICT of the customs operator "Alta-Soft", with the help of which future customs specialists were included in the professional community [16] on the specially created educational portal "Alta" (Moscow), additional professional training of students was carried out within the framework of the courses "Customs declaration goods ("release for domestic consumption" procedure and "export" procedure): moral and legal justification and practical aspects training and industrial practices were organized.

The use of training courses in the process of professional training of future customs specialists [13, 14] on the educational portal "Alta-Soft" (before entering pre-diploma practice), provided a higher level of professional training of students: positive feedback on the results of practice, no complaints from the outside organizations providing internship places. The leaders of the practice noted a high level of responsibility, deep knowledge of regulatory legal acts, confident possession of professional skills and abilities, the ability to adequately assess work situations.

A comparative analysis of the initial and final levels of the formation of the structural components of the moral and legal self-determination of the students of the experimental and control groups was carried out. The \( \chi^2 \)-Pearson criterion was used to verify the reliability of the conclusions and to evaluate the effectiveness of the experimental work.

The results obtained at the organizational-activity stage and processed by mathematical methods made it possible to conclude that the average level of formation of the components of moral and legal self-determination of future customs specialists at the stage of the ascertaining experiment differs from the average level at the end of the forming experiment [15]. The use of ICT in the process of implementing the technology of using ICT in the course of pedagogical support affects the effectiveness of moral and legal self-determination of future customs specialists.

Using the example of the dynamics of the formation of the reflexive component [16] of moral and legal self-determination, we present the calculation of the empirical value of the criterion \( \chi^2 \) (Table 1).

1 Formulation of hypotheses

H0: the distributions of indicators of the formation of the reflective component of the moral and legal self-determination of future customs specialists at the preparatory and diagnostic stage of experimental work for the experimental and control groups do not significantly differ from each other (3rd year, 1st semester).
H1: the distributions of indicators of the formation of the reflexive component at the preparatory and diagnostic stage of the experiment for the experimental and control groups significantly differ from each other (3rd year, 1st semester).

Table 1. The results of the formation of the reflective component at the preparatory and diagnostic stage of experimental work (ascertaining experiment)

<table>
<thead>
<tr>
<th>Course, group (abs. qty)</th>
<th>Course 1, 70 people (%)</th>
<th>Course 2, 70 people (%)</th>
<th>3 course (I semester)</th>
</tr>
</thead>
<tbody>
<tr>
<td>High EG 10 (29)</td>
<td>KG 11 (31)</td>
<td>EG 12 (34)</td>
<td>KG 11 (31)</td>
</tr>
<tr>
<td>Medium 14 (40)</td>
<td>14 (40)</td>
<td>13 (37)</td>
<td>15 (43)</td>
</tr>
<tr>
<td>Low 11 (31)</td>
<td>10 (29)</td>
<td>10 (29)</td>
<td>9 (26)</td>
</tr>
</tbody>
</table>

2 Calculation of the empirical value of the $\chi^2$ criterion

Tables PZH.1 and PZH.2 were compiled

Table RG.1. Table of empirical and expected frequencies of the formation of the reflexive component at the preparatory and diagnostic stage of the experiment

<table>
<thead>
<tr>
<th>Level</th>
<th>Empirical frequency $f_e$</th>
<th>Expected frequency $f_o$</th>
<th>$f_e$</th>
<th>$f_o$</th>
<th>$f_e - f_o$</th>
<th>$(f_e - f_o)^2$</th>
</tr>
</thead>
<tbody>
<tr>
<td>High</td>
<td>13</td>
<td>13</td>
<td>26</td>
<td>26</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>Medium</td>
<td>13</td>
<td>13</td>
<td>26</td>
<td>26</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>Low</td>
<td>9</td>
<td>9</td>
<td>18</td>
<td>18</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>Σ</td>
<td>35</td>
<td>35</td>
<td>70</td>
<td>70</td>
<td>0</td>
<td>0</td>
</tr>
</tbody>
</table>

To compare the distributions of indicators of the formation of the reflexive component at the preparatory and diagnostic stage, the table RV was compiled 2.

Table PZh.2. Calculation of the $\chi^2$ criterion for comparing the distributions of indicators of the formation of the reflexive component at the preparatory and diagnostic stage of the experiment

<table>
<thead>
<tr>
<th>Cell contingency tables</th>
<th>$f_e$</th>
<th>$f_o$</th>
<th>$f_e - f_o$</th>
<th>$(f_e - f_o)^2$</th>
</tr>
</thead>
<tbody>
<tr>
<td>A</td>
<td>13</td>
<td>13</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>B</td>
<td>13</td>
<td>13</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>C</td>
<td>13</td>
<td>13</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>D</td>
<td>13</td>
<td>13</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>E</td>
<td>9</td>
<td>9</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>F</td>
<td>9</td>
<td>9</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>Σ</td>
<td></td>
<td></td>
<td>0</td>
<td>0</td>
</tr>
</tbody>
</table>
\[ \chi^2 = 0 \]  

The number of degrees of freedom \( df = (r - 1)(c - 1) \) where \( r \) is the number of rows, \( c \) is the number of columns in the contingency table.

\[ df = (r - 1)(c - 1) = (3 - 1)(2 - 1) = 2 \]  

The critical value of \( \chi^2 \) for the significance level \( \alpha = 0.05 \) and \( df = 2 \) is 5.991.  

Since \( \chi^2 < cv \), \( H_0^- \) is accepted, \( H_1^- \) is rejected, i.e. the distribution of indicators of the formation of the reflexive component at the preparatory and diagnostic stage of the experiment for the experimental and control groups does not significantly differ from each other (3-d course, I semester).

To check the reliability of the conclusion of the difference between the distribution of indicators of the experimental and control groups according to the level of formation of the reflexive component of moral and legal self-determination at the control-generalizing stage of the experiment (5th year), the Pearson \( \chi^2 \) criterion was applied with observance of all restrictions.

**Table 2.** The results of the formation of the reflective component at the control-generalizing stage of the experiment

<table>
<thead>
<tr>
<th>Course, group (abs, qty)</th>
<th>3 course, (II semester), 70 people (%)</th>
<th>4 course, 70 people (%)</th>
<th>5 course, 70 people (%)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Level</td>
<td>EG</td>
<td>KG</td>
<td>EG</td>
</tr>
<tr>
<td>High</td>
<td>14 (40)</td>
<td>13 (37)</td>
<td>17 (49)</td>
</tr>
<tr>
<td>Medium</td>
<td>15 (43)</td>
<td>14 (40)</td>
<td>16 (46)</td>
</tr>
<tr>
<td>Low</td>
<td>6 (14)</td>
<td>8 (23)</td>
<td>2 (6)</td>
</tr>
</tbody>
</table>

1 Formulation of hypotheses  
\( H_0^- \): the distributions of indicators of the formation of the reflexive component of moral and legal self-determination at the control-generalizing stage of the experiment for the experimental and control groups do not significantly differ from each other (5 courses).

\( H_1^- \): the distributions of indicators of the formation of the reflexive component of moral and legal self-determination at the control-generalizing stage of the experiment for the experimental and control groups significantly differ from each other (5 course).

2 Calculation of the empirical value of the \( \chi^2 \) criterion
Tables RV.3 and RV.4 were compiled.
Table RG.3. Table of empirical and expected frequencies of the formation of the reflexive component of moral and legal self-determination at the control-generalizing stage of experimental work

<table>
<thead>
<tr>
<th>Level</th>
<th>Empirical frequency $f_e$</th>
<th>$\Sigma f_e$</th>
<th>Expected frequency $f_o$</th>
<th>$\Sigma f_o$</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>EG</td>
<td>KG</td>
<td>EG</td>
<td>KG</td>
</tr>
<tr>
<td>High</td>
<td>23</td>
<td>15</td>
<td>38</td>
<td>19</td>
</tr>
<tr>
<td>Medium</td>
<td>10</td>
<td>13</td>
<td>23</td>
<td>11.5</td>
</tr>
<tr>
<td>Low</td>
<td>2</td>
<td>7</td>
<td>9</td>
<td>4.5</td>
</tr>
<tr>
<td>$\Sigma$</td>
<td>35</td>
<td>35</td>
<td>70</td>
<td>35</td>
</tr>
</tbody>
</table>

To compare the distributions of indicators of the formation of the reflexive component at the control-generalizing stage, the table RV was compiled.

Table PZh.4. Calculation of the $\chi^2$ criterion for comparing the distributions of indicators of the formation of the reflexive component of moral and legal self-determination at the control-generalizing stage of the experiment

<table>
<thead>
<tr>
<th>Cell contingency tables</th>
<th>$f_e$</th>
<th>$f_o$</th>
<th>$(f_o-f_e)/f_e$</th>
<th>$((f_o-f_e)^2)/f_e$</th>
</tr>
</thead>
<tbody>
<tr>
<td>A</td>
<td>23</td>
<td>19</td>
<td>4</td>
<td>0.696</td>
</tr>
<tr>
<td>B</td>
<td>15</td>
<td>19</td>
<td>4</td>
<td>1.067</td>
</tr>
<tr>
<td>C</td>
<td>10</td>
<td>11.5</td>
<td>1.5</td>
<td>0.225</td>
</tr>
<tr>
<td>D</td>
<td>13</td>
<td>11.5</td>
<td>1.5</td>
<td>0.173</td>
</tr>
<tr>
<td>E</td>
<td>2</td>
<td>4.5</td>
<td>2.5</td>
<td>3.125</td>
</tr>
<tr>
<td>F</td>
<td>7</td>
<td>4.5</td>
<td>2.5</td>
<td>0.893</td>
</tr>
<tr>
<td>$\Sigma$</td>
<td></td>
<td></td>
<td></td>
<td>6.179</td>
</tr>
</tbody>
</table>

$\chi^2=6.179$ (3)

The number of degrees of freedom $df = (r-1)(c-1)$ where $r$ is the number of rows, $c$ is the number of columns in the contingency table.

$df = (r-1)(c-1) = (3-1)(2-1) = 2$ (4)

The critical value of $\chi^2$ for the significance level $\alpha = 0.05$ and $df = 2$ is 5.991. Since $\chi^2 > 5.991$, $H_0$ is rejected, $H_1$ is accepted, i.e., the distribution of indicators of the formation of the reflexive component of moral and legal self-determination at the control-generalizing stage of experimental work for the experimental and control groups significantly differ from each other (5 course).
5 Conclusion

Analysis of diagnostic data, statistical and mathematical processing based on the totality of indicators of the formation of moral and legal culture, allows us to conclude that the use of information and communication technologies for training has increased the quality of professional training of future customs specialists, provided qualitative and quantitative changes in the level of formation of all components of moral-legal self-determination. When comparing the data of monitoring the formation of the components of moral and legal self-determination of students, it turned out that the organizational and pedagogical conditions for managing an organization in a university of an information educational environment have the greatest influence on this process and include:

1) organization of group work of students in solving situational tasks of a professional orientation;
2) solving practice-oriented tasks in the learning process on the Alta portal;
3) differentiated tasks, taking into account the interests and capabilities of students [17];
4) acquaintance with representatives of the profession;
5) organization of independent, practical, research work of students;
6) organization of individual monitoring of students' work in the learning process on the portal "Alta";
7) the use of information and communication technologies for teaching [18].

The introduction of digital tools and services makes it possible to form qualitatively new educational results, develop the cognitive potential of each student. Modern digital technologies have more educational opportunities, their use allows students to master various forms of cooperation, develop the skill of coordinated actions, form a readiness for joint problem solving, and increase the level of educational and cognitive motivation [19]. At this stage, the educational process actively uses universal software packages Microsoft Word, Adobe Photoshop, Excel, AutoCad, programs for preparing electronic presentations ClearSlide, PowerPoint, various tools for creating graphics, editing video tasks [20]. Most of the teachers of the educational portal "Alta" did not experience difficulties using digital tools and services that allow actively updating the educational content of the portal, optimizing teaching methods, developing training and testing programs, and stimulating active self-study activities.

The use of information and communication technologies in conjunction with pedagogical technologies creates the necessary level of quality, variability, differentiation, and individuality of teaching and moral education. The integrated implementation of these technologies ensures the effective formation of professional competencies [4], readiness for moral and legal self-determination of future customs specialists.
References