Social and Communicative Competence Formation of Future Boatmasters in the Process of Studying Humanities

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Abstract: The article reveals the research of social and communicative competence formation of future boatmasters in the process of studying humanities. This competence covers a system of social and communicative knowledge, skills, as well as basic values and personal qualities necessary for effective interpersonal interaction and ensuring the safety of a ship. The structure of social and communicative competence of a future boatmaster is determined by the content of his or her professional activity and covers the following components: personal-value, cognitive-content and activity-effective. The results of the study made it possible to establish the educational reserves for improving the quality of training future boatmasters and forming their social and communicative competence. Taking into account the trends of globalization of the maritime shipping industry and the impact on the professional training of future boatmasters, the influence of postmodernism on formation and development of value orientations of students, the emergence of new social values, it is assumed that formation of social and communicative competence will be effective in case at the Maritime institutions of higher education will be introduced such pedagogical conditions: structuring the content of humanitarian disciplines in accordance with the basic values of social and communicative interaction of future boatmasters; using dialogical methods for the development of future boatmasters skills of interpersonal professional interaction; developing on the basis on contextual training of managerial decision making skills; preparation of teaching staff to forming social and communicative competence of future boatmasters. The effectiveness of pedagogical conditions of the formation of social and communicative competence of future boatmasters in the process of studying humanities was confirmed by the results of the pedagogical experiment. According to the results of the study the cadets of experimental group had mostly high (36.03 %) and average (45.96 %) levels of social and communicative competence formation. In control group, these data were 24.38% and 44.37%, respectively. In this group, the number of cadets with a low level, compared to experimental group, was much higher and amounted to 31.25 % (13.24% more than in experimental group).

Keywords: *social and communicative competence; future boatmasters; pedagogical conditions; maritime education; values; humanities.*

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1. Introduction

Trends in the globalization of the European and world educational space, the influence of postmodernism on the formation and development of value orientations of students, rapid pace of scientific and technological progress, strengthening cultural, economic and political ties between states, development of modern infrastructure, transport, information and communication technologies, as well as the sphere of education and science actualize the search for ways to overcome social and communication and language barriers in various spheres of life and international cooperation. This task is extremely important for the operation of maritime transport in today's conditions, since in accordance with the requirements of the International Convention on training, certification of seafarers and watchkeeping, there is an urgent need for specialists of the Navy with a high level of social and communicative competence. This is also due to the peculiarities of the profession itself, the requirements for professional mobility of seafarers and the international labor market. Vessel officers should not only have appropriate professional knowledge and practical skills, but also ensure effective management of vessel personnel, first of all, maintain an atmosphere of mutual understanding, goodwill, mutual assistance, compliance with generally accepted moral norms and human relations, and take care of their health and safety. In addition, due to the processes of cultural, scientific, economic integration and globalization, navy specialists work as part of Joint multinational crews or ensure the functioning of foreign vessels, where a foreign language is the main means of interpersonal or group communication, functional communication and regulation of professional activities. That is why specialists of the Navy, in accordance with their functional duties, have to be able to communicate with crew members and foreign passengers, if necessary, interact with law enforcement agencies of other countries, communicate during the voyage with citizens who have different social traditions, language culture, etc.

This determines the importance of developing social and communicative competence of future boatmasters. The socio-cultural knowledge and skills they acquire will contribute to assimilation of social values, norms, rules, standards of socially approved behavior and ensure the success of social and professional interaction, harmony in relations with other people and the surrounding world (Burke, 2007; Soroka et al., 2019; 2020).

This competence covers a system of social and communicative knowledge, skills, as well as basic value orientations and personal qualities

necessary for effective interpersonal interaction and ensuring the safety of the ship (Balendr et al., 2018). Researchers consider it as a complex structure and organizational holistic entity that ensures the success of the main tasks of professional activity and is expressed in compliance with specific socio-cultural and ethical norms of speech behavior during interpersonal and intra-group interaction, covers the ability to choose an effective behavior strategy and adequate ways of communication in everyday and conflict situations, teamwork skills (Tomenko, 2006; Balendr et al., 2019).

However, the results of the pilot study indicate that graduates of Marine higher education institutions often lack the skills to apply technologies of constructive conflict resolution and communication strategies of communication depending on the situation, take responsibility for decisions making, stay tolerant in difficult situations, cooperate productively with different partners in a group and in an ethnically heterogeneous environment. The results of the analysis of professional training of future Navy boatmasters of the Bachelor level indicate that this process is not sufficiently focused on training specialists who have to quickly navigate among various social conditions and effectively interact with the social environment, work productively in international groups and teams.

1.1. The Aim

The aim of the article is to test the hypothesis that the formation of social and communicative competence of future boatmasters in the process of studying humanitarian disciplines will be effective under the following conditions of: 1) structuring the content of humanitarian disciplines in accordance with the basic values of social and communicative interaction of future boatmasters; 2) using dialogical methods for the development of future boatmasters skills of interpersonal professional interaction; 3) developing on the basis on contextual training of managerial decision making skills; 4) preparation of teaching staff to forming of social and communicative competence of future boatmasters.

1.2. Tasks

1. To determine the essence, structure and content of social and communicative competence of future boatmasters for conducting a study of its formation among students in institutions of higher education of a Maritime profile.
2. To substantiate the pedagogical conditions for the formation of social and communicative competence of future boatmasters in the

process of studying humanities and to develop a methodology for their implementation in the process of studying humanities.

3. Experimentally test the effectiveness of pedagogical conditions for the formation of social and communicative competence of future boatmasters in the process of studying humanities in Maritime institutions of higher education.

2. Literature review

The problem of forming social and communicative competence has repeatedly attracted attention of scientists. In sociology and social philosophy the ability of social communication is considered as a manifestation of purely human, as one of the most valuable social entities, as a basic condition of social life and a means of creating social values. Representatives of the communicative philosophy in order to establish proper social and communicative interaction, they pay attention to the importance of the new ethics of human relations (macroethics), orientation to universal values that would contribute to understanding humanity.

In pedagogy, social and communicative competence is interpreted as one of the most important, necessary for life in society, emphasizing that a person can "be realized", fathom himself only in constant contacts with others, through a tolerant attitude to other people and opinions. Modern scientists identify social and communicative competence among other key competencies necessary for effective interpersonal and intra-group interaction.

However, despite a fairly wide range of scientific works that present various aspects of social and communicative competence, there is no comprehensive study of its formation among future boatmasters in the process of studying humanities today: the pedagogical conditions for the formation of this significant property for professional activity are not justified, models of its formation, criteria and indicators for assessing the levels of formation have not been developed. Modern scientific and methodological support for the process of forming social and communicative competence in the study of humanities by cadets of maritime educational institutions needs to be improved.

3. Research Methods

To achieve this goal, to solve the tasks and test the hypothesis, scientific research methods used in psychological and pedagogical research were applied.

Among the methods of collecting information were used questionnaires and surveys. Also were used open questionnaires, in which the instructions did not offer options for answering the question (Sysoeva & Kristopchuk, 2013). This helped to collect the necessary qualitative and quantitative data, and then compare the initial level of formation of social and communicative competence of cadets with the level after the formative stage of the experiment. With the help of an oral and written survey, we studied the experience of cadets, their thoughts, opinions on the problem of social and communicative competence of the boatmaster. During the research were used the questionnaires "Express-diagnostics of social values", the Syshor group cohesion test, a questionnaire for teaching staff to determine readiness for the formation of social and communicative competence of future boatmasters, the method of "Identification of attitudes aimed at altruism-selfishness", the method of "Social courage", etc. (Bekh, 2012).

The study also used pedagogical observation, the method of expert assessments, testing ("Express-diagnostics of social values of personality", the method of determining the index of group cohesion and the method "Satisfaction with the chosen profession", as well as a series of test items to determine the formation of the cognitive-content component of the socio-communicative competence of future boatmasters) – to find out the state of formation of components of social and communicative competence of cadets at different stages of the study; pedagogical experiment - to check the effectiveness of pedagogical conditions for the formation of social and communicative competence of future boatmasters (Sysoeva & Kristopchuk, 2013).

To obtain quantitative values (points, grades) to find out the cadets' level of awareness of the meaning and essence of social and communicative competence, to determine the level of awareness of cadets about the most important concepts of communication theory, the tasks developed by the author's team were used. To determine formation of the activity-resultative component of social and communicative competence among cadets were proposed professionally-oriented tasks (Torsky & Topalov, 2011).

The study also used the Kolmogorov-Smirnov statistical criterion and the expert evaluation method to identify differences in the distribution of empirical series, compare samples with alternative features, and assess the probability of correlation between these features (Sokol, 2011).

The research work lasted from May 2017 to May 2020. 326 cadets of the National University "Odessa Maritime Academy", including its branches – the Azov Maritime Institute and the Danube Institute took part in the

research. The pedagogical experiment was a parallel one, which provided for the participation of two groups – experimental (hereinafter – EG) and control (hereinafter – KG). EG participants were actively influenced by the introduction of pedagogical conditions, and in CG the educational process was organized according to the traditional system. By comparing the state of objects (EG and KG), in particular the input (at the beginning of the experiment) and final (after its completion) characteristics of formation of social and communicative competence of future boatmasters, the effectiveness of the proposed measures, in particular pedagogical conditions, was clarified.

All participants of the experiment gave their consent to participate. At the beginning of the experimental work, a study (entrance control) was conducted to form the experimental and control groups, which showed that the vast majority of cadets (from 79.62% to 84.76%, depending on the criteria) have a low level of social and communicative competence. The number of cadets with an average level of social and communicative competence formation ranges from 8.88% to 20.37%, and a high level ranges from 5.49% to 6.79 %. After that, all cadets were divided into two groups: the experimental group – 164 people and the control group – 162 people. In terms of qualitative characteristics and the level of social and communicative competence, EG and KG did not differ significantly.

Diagnostics of the formation of social and communicative competence of future boatmasters was carried out taking into account its main indicators, which are conditionally combined into three criteria - personal, cognitive and activity.

4. Results of the Research

According to the first task based on the results of theoretical analysis of research (Didenko & Kalinyuk, 2014; Godlevska, 2007; Miasoid, 2005; Sokol, 2011; Tomenko, 2006), as well as the study of regulatory documents regulating the activities of specialists of the Navy, it is established that the social and communicative competence of a boatmaster (hereinafter referred to as the SCC) is a professionally important property that covers a system of social and communicative knowledge, skills, as well as basic value orientations and personal qualities necessary for effective interpersonal interaction and ensuring the safety of the ship. The structure of the SCC of a boatmaster is the unity of three components, in particular personal-value (value attitude of boatmasters to the profession, other people and social and communicative interaction, motivation for professional activity and a set of

professional-personal qualities necessary for maintaining proper contacts with other people), cognitive-content (knowledge necessary for effective establishment of business interaction of ship crew members, cohesion of the ship crew, establishing and maintaining an appropriate level of contacts between members of the multinational crew, with representatives of other nationalities, faiths) and activity-resultative (skills and abilities of interactive, perceptual, linguistic, psychocorrective, and cross-cultural nature).

Taking into account the results of the analysis of scientific works and the component composition of the boatmasters' SCC, three criteria for its formation have been determined, in particular, personal, cognitive and activity (Bakic-Tomic et al., 2015; Dumitriu et al., 2014; Fahrutdinova et al., 2016; Lukyanova et al., 2015). It was found out that the following indicators correspond to the personal criterion: recognition and compliance with the ethical principles of interpersonal interaction, understanding of its value aspects, communicative professional and personal qualities. Indicators of the cognitive criterion are knowledge of social, socio-cultural, professional norms and methods of interaction; awareness of communication strategies and tactics, rules and restrictions in communication, about communication tools inherent in the national mentality and professional community. The activity criterion is the ability to interact productively with group members, clearly express their opinions and broadcast information, defend their position, hear and understand other people; the ability to analyze their social and communicative behavior (Primov, 2019).

Taking into account the nature of the professional activity of boatmasters and the data of scientific literature, a scale with three levels was used to distribute the formation of social and communicative competence of future boatmasters. It is based on the Harrington scale – an interval discrete verbal-numerical scale consisting of intervals of a single segment that characterize the degree of approximation to a certain ideal (Marakhovska, 2009). At the same time, the study suggests using low, medium and high levels of social and communicative competence formation of future boatmasters. The low level corresponds to values from 0 to 0.37, the average level – in the range of 0.38 – 0.8, and the high level – from 0.81 to 1.0.

Defining the diagnostic apparatus allowed to conduct the experimental part of the research from May-June 2017 on the basis of the Danube Institute (Izmail) and the Azov Maritime Institute (Mariupol) of the National University "Odessa Maritime Academy" to conduct the ascertaining stage of the experiment. It was attended by 326 cadets studying at the first (Bachelor's) level of higher education in the specialty 271 "River and sea transport" and specialization "Navigation and management of sea

vessels" or "Navigation", as well as 12 persons from the teaching staff. The results of the ascertaining stage, obtained through observation, surveys, questionnaires, conversations with cadets and teachers, showed that the level of social and communicative competence of cadets is mostly low - from 79.62% to 84.76%. The number of cadets with an average level of social and communicative competence formation ranges from 8.88% to 20.37 %. The percentage of cadets with a high level of social and communicative competence is insignificant: from 5.49% to 6.79 % (table. 1).

Table 1. Distribution of participants-future boatmasters by the level of formation of the SCC at the ascertaining stage of the pedagogical experiment

Criteria	Groups	High		Average		Low	
		Q-ty	%	Q-ty	%	Q-ty	%
Personal	CG	11	6.79	16	9.88	135	83.33
	EG	9	5.49	16	9.75	139	84.76
Cognitive	CG	–	–	26	16.05	136	83.95
	EG	–	–	26	15.85	138	84.15
Activity-based	CG	–	–	33	20.37	129	79.63
	EG	–	–	30	18.29	134	81.71
Social and communicative competence of future boatmasters	CG	4	2.47	25	15.43	133	82.10
	EG	3	1.83	24	14.63	137	83.54

Source: Authors' own conception

The data presented in the table allow us to conclude that the distribution of participants in the control and experimental groups by the levels of SCC formation at the ascertaining stage of the experiment does not differ significantly.

At the same time, this state of formation of the SCC has made it necessary to determine and justify pedagogical conditions, the implementation of which in the process of studying humanities will contribute to the effective formation of the SCC of future boatmasters.

According to the second task, taking into account the results of the analysis of scientific and pedagogical literature (the provisions of the

competence approach regarding the need for a special choice of training content, the importance in the professional life of the boatmaster of understanding the value aspects of social interaction and professional communication, the positions of representatives of communicative philosophy and humanistic pedagogy about the importance of dialogue in the formation of personality and the provisions on the potential of humanitarian disciplines in the formation of personality), as well as taking into account the expert assessment, the following pedagogical conditions for the formation of social and communicative competence of future boatmasters in the process of studying humanities have been defined:

- structuring the content of humanitarian disciplines in accordance with the basic values of social and communicative interaction of future boatmasters;

- using dialogical methods for the development of future boatmasters skills of interpersonal professional interaction;

- developing on the basis on contextual training of managerial decision making skills;

- preparation of teaching staff to forming of social and communicative competence of future boatmasters.

Experimental testing of effectiveness of these pedagogical conditions was carried out during the formative stage of the experiment in the period from September 2017 to May 2020. 326 cadets of the National University "Odessa Maritime Academy", including its branches – the Azov Maritime Institute and the Danube Institute took part in the research. At the same time, the cadets of the control group were trained according to the traditional method, and in the training of cadets of the experimental group, in particular in the process of studying humanities, certain pedagogical conditions for the formation of the SCC were implemented.

When introducing the first pedagogical condition, the content of humanitarian disciplines was structured in accordance with the basic values of social and communicative interaction of future boatmasters.

For this purpose, when choosing the content of humanitarian disciplines, the requirements of the State Standard regarding the level of competence of a boatmaster and characteristics as a crew leader were taken into account, the necessary processes, problems, cultural and historical knowledge were identified, which helped to develop necessary value understanding of interpersonal interaction and the main skills of the SCC. The content was constructed, the concepts of teaching humanitarian disciplines were defined, didactic units related to the SCC were highlighted in their content, and educational and material support was elaborated.

The use of potential of the academic discipline "Philosophy" was of conceptual importance. On the basis of philosophical pluralism, cadets were trained in a versatile understanding of the world, and their ability to creatively analyze complex phenomena of reality, non-standard situations and problems in public, professional and personal life was also developed. When teaching "History and culture of Ukraine", the interpretation and assessment of past events, selection of historical facts was carried out from the standpoint of a civilizational approach (the focus is on a person as a conscious creator of history). Thanks to this, cadets paid attention to both social processes and also to individual, unique world of a person, learned to respect the world of other values and priorities, realized the need to define a system of value orientations, their worldview position, responsibility for actions and words. In general, when constructing the content of humanitarian disciplines, teachers paid attention to the basic values that determine the strategy of social and communicative interaction of future boatmasters, primarily such as respect for another, tolerance and tolerance, interpretation of meeting another as a gift, recognition of someone's right to personal opinion.

The second pedagogical condition provided for the use of dialogic methods to develop future boatmasters' skills of interpersonal professional interaction. In this context, it was taken into account that it is most effective to acquire the skills of socio-cultural interaction, in particular to respect the points of view of another person, to justify your point of view, etc., through socio-cultural interaction in a group, that is, through group discussion (conversation), discussion or dispute, brainstorming, collective decisions and their evaluation. The classes in the academic disciplines "English" and "English for Professional Purposes" focused on the most typical for professional communication of a boatmaster communicative situations, in particular those that provided for requesting information, adding to what was said, expressing agreement, disagreement, surprise, doubt, satisfaction, dissatisfaction, focusing on a certain fact, finding out details, attracting attention, justifying the assessment of what was listened to, explaining certain provisions, and so on. In particular, these were the dialogues "establishing contacts with a foreigner", "conversation in the port", "instructions to the watchman", "message for the pilot", "conversation on the phone", etc. Such dialogues helped to develop cadets' skills in establishing professional contacts and conducting business conversations.

The method of discussion was important for the development of interpersonal interaction skills of future boatmasters when delivering the disciplines "History and culture of Ukraine", "Society and state" and

"Political Science". Getting acquainted with the peculiarities of Ukrainian and Western mentalities, discussing ethical and religious issues relevant to modern society, cadets learned to respect the beliefs of representatives of other cultures, expanded their understanding of the philosophical and ideological foundations of maritime activities. Debates and discussions made it possible to model the hierarchy of positional-role tasks for solving problems of professional interaction, helped teaching cadets to find common solutions, overcome selfishness in resolving conflict situations. Introduction of dialogical methods through socially significant knowledge helped to teach cadets to treat another person more respectfully, to his/her ideological and value positions and views on the world.

The third condition provided for the development of managerial decision-making skills based on contextual training. In this case, according to the requirements of the theory of contextual training, based on the analysis of the content of professional activity of boatmasters and programs of disciplines of the cycle of professional and practical training "Navigation and sailing directions", "Practice of navigator watch", "Ship management", "Security measures on the ship", "Management of marine resources", "Technology of cargo transportation", etc., content aspects were determined that relate to the spheres of social and communicative activity of boatmasters, with the educational disciplines "English" and "English for professional purposes". Typical, non-standard and creative socio-professional tasks were identified, a story-role context was selected taking into account typical situations of future professional activity and communication of boatmasters, appropriate lexical material (English - language texts, terms, slang expressions) and teaching tools (audiovisual, in particular teaching aids, and authentic audio and video materials) were prepared.

Among the typical communication situations in the professional sphere of communication, the greatest attention was paid to ship positions and responsibilities (requesting and obtaining information about the functional responsibilities of team members; discussing norms of behavior in a multinational crew), safety on board the ship (providing safety instructions, publishing commands and orders, describing incidents that occurred due to non-compliance with the rules and commands on the safety of activities), ship protection in a port and at sea (requesting and obtaining the necessary information about the level of protection from coastal services and ship companies; discussing measures in connection with the terrorist threat, etc.), organization of teamwork (characterization of psychological and

socio-cultural differences and taking into account their impact on the safety of the ship).

The content of contextual training and, accordingly, educational and methodological materials, contained: a) simulated areas of future professional activity of boatmasters in the form of typical tasks of their activities related to social and communicative interaction; B) situations of professional communication and programs of their deployment using social and communicative skills; C) socio-professional and communicative roles defined in accordance with various aspects of professional communication of the boatmasters; d) textual material that reflected the communicative component of professional activity of the boatmasters in solving relevant tasks; E) procedures that allowed to achieve the most accurate understanding of the content information in the context of multicultural communication (Formatting information, using labeling, etc.); f) information of a socio-cultural nature, in particular about national and cultural features, the realities of foreign-language social and professional activities and their inherent label forms of speech; about communication topics, etc. In turn, in the simulation model of the business game through systematic content of the educational material, selection of adequate content of the professional activity of the boatmaster simulation-game and problem situations of training, approximation of the situation of the educational process to real conditions, structure of the future professional activity of boatmasters were reproduced.

The fourth pedagogical condition provided for the preparation of teaching staff for the formation of social and communicative competence of future boatmasters. For this purpose, during September - October of each year, a special seminar "Formation of social and communicative competence of future boatmasters when studying humanities" was organized, where teachers got acquainted with the most important issues of this problem. Increased attention was also paid to studying the history of formation of communicative philosophy, interpretation of the features of dialogue in philosophy, sociology, psychology and pedagogy, the main directions of the teacher's work, methods and forms of forming the SCC of future boatmasters, etc. During the experimental training, dialogical communication involved building a special type of relationship with cadets, focusing on the moral component, the values of communication and attitude to life, and creating an atmosphere of mutual trust, frankness and goodwill. To optimize interaction with cadets, teachers tried to form a notion of "we", eliminate barriers in communication, looked for ways to unite views, which provided for a proper assessment of the potential capabilities of cadets,

creating situations of success, a positive assessment of their communicative actions, contributed to their personal self-affirmation, development as specialists. In general, communication was organized at the subject-subject level, and co-creation and cooperation became a universal form of relations and interaction between teachers and cadets.

So, when organizing the formative stage of the pedagogical experiment, appropriate pedagogical tools, methods, organizational forms were adopted, and the necessary relations were established between the participants of the educational process. The most important forms and means of forming the SCC in the process of teaching humanities were group and pair work, conversations, discussions, mini-lectures, consideration of situations of professional interaction, tasks, role-playing and business games. These methods made it possible to model situations of professional interaction, consolidate the acquired skills and methods of proper social and communicative interaction.

In the course of the study, the effectiveness of the formation of SCC in EG and KG cadets at various training courses was constantly monitored. The results are shown in Table 2.

Table 2. Distribution of participants - future boatmasters by levels of SCC formation at different training courses at the formative stage of the pedagogical experiment

Level / Course		Low level	Average level	High level
1st year	EG	137 (83,54 %)	24 (14,63 %)	3 (1,83 %)
	CG	133 (82,10 %)	25 (15,43 %)	4 (2,47 %)
1st year	EG	121 (73,78 %)	35 (21,34 %)	8 (4,88 %)
	CG	127 (78,39 %)	29 (17,90 %)	6 (3,71 %)
1st year	EG	29 (18,01 %)	74 (45,96 %)	58 (36,03 %)
	CG	50 (31,25 %)	71 (44,37 %)	39 (24,38 %)

Source: Authors' own conception

At the end of the formative stage of the pedagogical experiment, a repeated measurement of the formation of social and communicative competence in cadets of KG and EG was carried out, the results of which are presented in Table 3. It should be taken into account that during the study, the number of participants in the experiment decreased (expelled due to poor academic performance, health reasons, personal unwillingness to study, etc.). Therefore, at the time of completion of the formative experiment, there were 160 cadets in the CG, and 161 cadets in the EG.

Table 3. Distribution of participants – future boatmasters by levels of SCC formation of cadets before and after the experiment, n = 321 (kg – 160, EG – 161).

Levels	Criteria	Control group		Experimental group	
		At the beginning of the experiment	At the end of the experiment	At the beginning of the experiment	At the end of the experiment
Low	Personal	135 (83,33 %)	53 (31,13 %)	139 (84,76 %)	34 (21,12 %)
Average		16 (8,88 %)	73 (45,62 %)	16 (9,76 %)	79 (49,07 %)
High		11 (6,79 %)	34 (21,25 %)	9 (5,49 %)	48 (29,81 %)
Low	Cognitive	136 (83,95 %)	51 (31,87 %)	138 (84,14 %)	27 (16,77 %)
Average		26 (16,05 %)	72 (45,0 %)	26 (15,85 %)	75 (46,58 %)
High		–	37 (23,13 %)	–	59 (36,65 %)
Low	Activity	129 (79,62 %)	46 (28,75 %)	134 (81,71 %)	26 (16,15 %)
Average		33 (20,37 %)	68 (42,5 %)	30 (18,29 %)	68 (42,24 %)
High		–	46 (28,75 %)	–	67 (41,61 %)
Low	Average	133 (82,10 %)	50 (31,25 %)	137 (83,54 %)	29 (18,01 %)
Average		25 (15,43 %)	71 (44,37 %)	24 (14,63 %)	74 (45,96 %)
High		4 (2,47 %)	39 (24,38 %)	3 (1,83 %)	58 (36,03 %)

Source: Authors' own conception

The data in Table 3 show that EG cadets have mostly high (36.03 %) and average (45.96 %) levels of social and communicative competence formation. In CG, these data are 24.38% and 44.37%, respectively. In this group, the number of cadets with a low level, compared to EG, is much higher and amounts to 31.25 % (13.24% more than in EG). The greatest difference between EG and CG was recorded in terms of the formation of the activity component of social and communicative competence (fig. 1). This confirms the effectiveness of implementing the proposed model and pedagogical conditions for the formation of social and communicative competence of future boatmasters in the process of studying humanities.

Figure 1 - graphic representation of the results of formation of social and communicative competence of cadets after the formative stage of the experiment in the experimental and control groups (as a percentage)

After that, to check the differences in the qualitative composition of CG and EG, according to all the criteria for the formation of social and communicative competence, the Kolmogorov-Smirnov criterion was applied at the end of the formative experiment (an example of calculations for the cognitive criterion is given in Table. 4).

Table 4. Calculation of the $d_{\max}$ value for the cognitive criterion of social and communicative competence at the end of the formative experiment

Levels of formation SCC	Empirical CG frequency	Empirical EG frequency	Empirical CG frequency f_1	Empirical EG frequency f_2	Accumulated CG frequency ($\sum f_1'$)	Accumulated EG frequency ($\sum f_2'$)	difference of accumulated freq. by module
Low	51	27	0.32	0.17	0.32	0.17	0.15

Average	72	75	0.45	0.47	0.77	0.53	0.24
High	37	59	0.23	0.37	1	1	0
Amount	$n_1 = 160$	$n_2 = 161$	1	1	–	–	–

Source: Authors' own conception

Thus, $d_{\max} = 0,24$. The formula was used to calculate the empirical value of the criterion λ :

$$\lambda_{emn} = d_{\max} \cdot \sqrt{\frac{n_1 \cdot n_2}{n_1 + n_2}},$$

where n_1 and n_2 are the number of cadets in KG and EG, respectively.

In our case

$$\lambda_{emn} = 0,24 \cdot \sqrt{\frac{162 \cdot 164}{162 + 164}} = 2,17,$$

a $\lambda_{kp} = 1,36$ ($p = \leq 0,05$). Based on the decision-making rule for the Kolmogorov-Smirnov criterion, it is obvious that the differences in the distributions of cadets of KG and EG according to the levels of formation of social and communicative competence according to the cognitive criterion are statistically significant, since $\lambda_{emn} \geq \lambda_{kp}$ ($2,17 \geq 1,36$) at the significance level $p = \leq 0,05$.

Similar calculations were performed for all criteria for the formation of social and communicative competence.

5. Discussion

Differences in the levels of SCC formation in EG and KG cadets are due to the fact that during the experimental work in EG the emphasis was on the formation of the value basis of social-communicative interaction, understanding of respect for their interlocutors. For this purpose, the content of humanities disciplines was structured in accordance with the basic values of social and communicative interaction of future boatmasters. Also important was the use of dialogic methods for the development of skills of interpersonal professional interaction, management decision-making. Usually students do not possess the most important skills of communicative competence. Often they are not able to consistently and persuasively express their point of view, replacing the logic of the arguments with unsubstantiated statements and do not have the specific lexis and cannot participate in the professional communications. Thus, development of communicative competence skills should be seen as a purposeful process

that requires considerable pedagogical effort (Bissenbayeva et al., 2013). Speaking about the specifics of training seamen, the results of diagnostics of the formed level of seafarers' skills to assess the quality of their speech and their formed level of skills and abilities as a listener have prompted to improve speech perceptual skills of future seafarers that will enable them to improve professional communication and interpersonal communication at sea (Tyron, 2017).

According to the results of the formative stage of the pedagogical experiment, we can talk about the effectiveness of the proposed methodology, which covers all levels of formation of social and communicative competence - substantive, procedural, activity, value, motivational, personal and evaluation. Special mention should be made of changes in the value attitude of EG cadets to social and communicative interaction as an important factor that determines effective professional activity.

We have also done significant work to improve the quality of training of research and teaching staff for the formation of SCC for future boatmasters. The result of the formative stage of the experiment on the formation of SCC cadets was that EG cadets realized the importance of social and communicative competence in professional activities, they have increased interest in communication, the need for proper communicative interaction. The cadets properly mastered the knowledge, categories related to social and communicative interaction, features of professional communication, received information about the means of social and communicative interaction in different situations of professional activity. The cadets gained experience in conducting discussions, reasoned proof of their point of view, orientation in social and communicative problems, self-esteem in situations of professional interaction.

In turn, in CG, in contrast to EG, positive changes in the formation of SCC do not reach the level of statistical significance, they are the result primarily of the entire educational process in the institution. Thus, the analysis of the results of research and experimental work confirms that the introduction of pedagogical conditions allows to properly form the SCC of future boatmasters in the process of studying humanities.

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