Safety strategy as an actual resource for forming modern marine corporate culture in marine education standards

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Abstract The article discusses the impact of training methods for seafarers on the formation of professional teamwork skills necessary to ensure sealift safety and analyzes the prospects for further use of this type of training in the context of Russian professional maritime education. The article focuses on corporate culture of cadets of marine specialties as a factor in the continuity of the corporate culture of the university and the marine subculture and determine its external and internal order. On the basis of Kerch State Maritime Technological University, as part of the study of marine corporate culture, a study was conducted of the state of no technical skills of cadet in “bridge team” (BTM) training courses, navigational training practice. The process of practical training, according to the results of the study, is the most effective tool for building teamwork skills.

1. Introduction
Operational safety is one of the priorities of modern navigation. Viewed as a working standard, an offshore corporate safety culture is increasingly positioned as a viable strategy for shipping companies and maritime corporations. Despite that the number of companies focused on developing a safety system not only at the formal level - the level of management documentation, but also at the deep level of awareness and conviction is extremely insufficient. The necessity to transform the concept of a safety culture in the field of navigation becomes more and more apparent. The transition from the practice of blindly following safety instructions to the formation of a strong commitment by sailors to safety guidelines expressed in self-control and individual responsibility is very important.

The purpose of this study is to consider innovative methods of working in groups as a mechanism for the formation of interpersonal, social and team competencies in sailors, which can play significant role in their professional life.

The development of the expected professionally labeled qualities of modern sailors and the optimally safe behavior mediated by them directly depends on the state and effectiveness of the culture developing in the corporation of civilian seafarers. It is in the matrix of corporate culture that the basic codes are laid down, which are responsible for updating the vital values of preserving life and health.

Confronting risks of various origins, including life threatening risks is an integral component of seaman professional life. The proven techniques developed by the maritime community to combat the inevitable and everyday risks are teamwork, collectivism, interaction and cooperation between crew members. The organization of working practices on modern ships assumes that crew members have the skills to coordinate their actions in accordance with the requirements of the safety policies pursued...
by maritime corporations and supported by the management of shipping companies. The development of these skills forms the basis of one of the core competencies of a professional sailor—shrined in the educational standards of maritime educational institutions of various state subordination—the ability to work in a team.

Teamwork is a special type of professional relationship and professional behavior. It is an essential component of effective interaction between team members united by common goals. It should be noted, however, that the mere fact of the existence of employees within one closed professional group does not mean that this behavior model is automatically implemented in the process of fulfilling their labor functions by team members. The presence of this competence among modern maritime specialists is determined by the formation of the cognitive and psychological readiness of seafarers for positive cooperation that is subject to common goals.

A common type of teamwork called the “bridge team” is used to achieve these goals. The essence of this method of work is the official organization of naval crews on a vertical principle, in accordance with the ship hierarchy adopted by the Navy. With this organization of the workflow each team member becomes an indispensable element of the overall system.

The “bridge team” (BTM) training courses are included in the educational programs of many Western maritime educational organizations [1].

The discussed methodology is aimed at developing the so-called non-technical skills of future sailors. Along with theoretical and technical training courses, the development of non-technical skills is now considered as a necessary element in the process of training professional maritime specialists in demand on the labor market who are able to demonstrate professional behavior in various working situations. An analysis of the scientific work of specialists studying this issue showed that the most popular in the context of a corporate safety culture of non-technical seafarers skills include situational behavior skills, the ability to maintain a constructive communicative environment, teamwork skills, and leadership skills for senior command personnel [1, p. 260].

The techniques for developing teamwork skills for cadets of maritime universities are based on the idea of modeling educational situations in accordance with the most typical situations that are possible in real maritime practice. Implementing the active learning strategy, the methods known as “work on simulators” are recognized in the world practice of marine vocational education as expedient and effective. The substantive elements included in them (exercises, trainings, problem situations) imitate training directly on the training courts, create the illusion of cadets being involved in team work.

In this regard the “coeducation” methodology is of interest, which is used to organize the training of cadets in the context of small groups that unite cadets not only formally but by creating a common problem situation that requires a collective solution. Work in groups maximizes the effectiveness of training, forms primary professional skills among cadets, allows you to realistically assess your potential, your strengths and weaknesses. One of the most significant results of applying this technique is the introduction of future sailors to the idea of corporate interaction necessary to ensure a safe existence on the voyage, and their understanding of the specifics of work at sea [3-5].

The need for corporate interaction on board is a fundamental value component of marine corporate culture.

Corporate culture as one of the forms of human culture is based on the existence of something whole, determined by customs, ritual forms, behaviors, value-normative systems that accumulate in the process of labor relations. The process of adaptation of future specialists in the chosen profession begins as early as the training period. Specialized universities (military, maritime) to a greater extent accumulate the cultural heritage of the corporation as their own corporate culture is mediated by the subculture of the corporation.

The Kerch State Maritime Technological University which is engaged in the training of maritime specialists for the fleet and ports, traditionally preserves and conveys the basics of maritime corporatism. The system of training and education at the Kerch State Marine Technological University was formed in accordance with its mission focused on increasing the prestige of maritime education and the formation of core values of maritime corporate culture among cadets. Most cadets understand...
and accept the mission of the university in which they study. Cadets are aware that the main task of the university is to provide the maritime industry with highly qualified, corporate-adapted personnel.

Maritime education in Crimea is an established system of traditions in the education and training of sailors, taking into account the specifics of maritime professional activities. The phased integration of the Crimean maritime industry into the international space of professional activity requires a high level of special training of personnel, instilling the values of corporate culture and the formation of professionally significant qualities of future sailors. Achieving priority positions directly depends on the personnel potential of the industry. The formation of professionally valuable qualities among cadets and their adoption of corporate ideology and ethics of the maritime professional community are the most important components of the process of introducing students to maritime corporate culture.

In the context of a sociological study of the corporate culture of sailors carried out by Kerch Marine Technological University we conducted a survey containing a thematic block of questions aimed at ascertaining the position of university teachers on methods of developing teamwork skills among cadets. The expert group consisted of teachers from the departments of the University’s Maritime Faculty. The selection of experts was carried out taking into account their professional competence and their position in managing the sub-structure of Kerch Marine Technological University, which carries out specific areas of training.

The methodology for studying the corporate culture of the civil society of Russian sailors was developed on the basis of a qualitative methodology, which implies in-depth knowledge and understanding of the specifics of professional groups, a representation of subjective meanings and assumptions.

In the process of developing a methodology for studying marine corporate culture in a professionally oriented university, the following steps were carried out.

Using an expert interview, a group of experts was interviewed whose level of scientific and pedagogical qualification, as well as their professional activity, corresponded to the following specialties [4,5]:
- navigation;
- operation of ship power plants;
- operation of marine electrical equipment and automation;
and training areas:
- ecology and nature management;
- technological machines and equipment;
- food products of animal origin;
- aquatic bioresources and aquaculture.
A total of 7 expert surveys were conducted.

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By the method of focused group interviews, 4-year full-time students and cadets were interviewed in the following specialties:
- navigation;
- operation of ship power plants;
- operation of marine electrical equipment and automation;
and training areas:
- ecology and nature management;
- technological machines and equipment;
- food products of animal origin;
- aquatic bioresources and aquaculture.

Guided by the objectives of the study and the specifics of the differentiation of target groups, 6 focused group interviews were conducted that represent marine specialties relevant to modern world
shipping, the training of which is carried out at the Kerch State Marine Technological University. In total, 71 cadets took part in the study.

When analyzing the results of the study, methods of content analysis and discourse analysis were used.

In the process of working on the obtained data, a comparative analysis of the opinions of experts and respondents from among cadets was carried out for all the studied indicators.

Let us consider in more detail the elements of the corporate culture of KSMTU cadets that were identified in the course of studies conducted in the 2016-2019 academic year among cadets of all specialties of the Maritime Faculty. The experts in the studies were the heads of specialized departments.

It was discovered that the first impression of cadets with maritime subculture occurs at the level of external cultural encounters including badges, emblem, flag, anthem, maritime symbols, website, and communication style of university employees. Surveys show that cadets are well aware of the attributes of their educational organization, easily distinguish its components as a result of the university administration organizational policy. The university website is used by cadets as a channel of information communication.

An important factor in introducing cadets to maritime corporate culture is the mandatory requirement to wear uniform. The uniform serves the purpose of psychological and pedagogical influence and is used to educate in future sailors a sense of responsibility and discipline. In addition, the uniform stimulates the process of self-identification of freshmen in the status of "I am a cadet." A change in status is accompanied by changes in the worldview and behavior of cadets.

Figure 1 shows the range of opinions of experts - leading university professors about the fact of the influence of maritime symbols (coat of arms, emblem, flag, anthem, interior. Specialized clothing) on the formation of cadets' feelings of the team as the basis for the safety of modern navigation.

![Figure 1. The effect of maritime attributes on the formation of cadet team feeling.](image)

According to the results of the study, a significant number of experts (71%) believe that the inclusion of cadets in the external attributes of marine corporate culture positively affects their development of corporate interaction skills: teamwork, joint training. At the same time, 21% of the experts surveyed considers this influence insignificant, and 8% do not recognize the fact of this influence.

Behind the external manifestations of maritime corporate culture is its internal content. At the deepest level, we differentiate such cultural components as rules and norms of behavior, traditions, a system of motivation, and core values of a corporation. Maritime specialized universities enforce strict regulations of the internal order which result in correction of the behavior of cadets in accordance with accepted standards. In this case, the motivation for submission to the norm among freshmen is the fear of disciplinary measures; in senior courses, the cadet code is respected at a conscious level, as it comes to understanding that discipline indeed is a high priority.

Formal and informal traditions developed at the Kerch Marine Technological University are aimed at creating a positive attitude towards the maritime profession among future sailors. Cadets are equally involved both in officially held events that support the maritime themes as well as in informal events...
and holidays. At the same time cadets take part in sport events with great desire, considering them the most useful. A small percentage of cadets are involved in scientific research, but many do not see practical necessity in science classes considering development of a profession and obtaining a diploma a higher priority. As turned out during the interview the cadets aspire to finish their education at the university and begin professional activities as soon as possible.

The educational activity of Kerch Marine Technological University involves the training of specialists for the maritime and shipping industries. According to the expert analysis approximately 20% of the department’s faculty staff at the University’s Maritime Faculty were directly related to fishing and, more specifically, fishing activities, which positively affects the formation of maritime corporate culture of students, expanding their understanding of the types of maritime subculture. So, all cadets clearly expressed the specifics of corporate culture, manifested in professional activities in the fishery industry.

The first comprehension of corporate culture in the professional activities of cadets occurs during training practice which in some cases is associated with the fishery industry.

Experts noted that they are actively cooperating with enterprises in the fishery industry, which are core in terms of the work of cadets in a particular area of training.

The university Maritime Faculty which focuses on training personnel for work at sea cooperates with more than 20 enterprises in the fishery industry, 5 of which are enterprises of the Federal Fisheries Agency: “Okeanrybflot”, “Preobrazhenskaya Trawl Fleet Base”, “Yuzhmorrybflot”, “TikhoyOkean”, “Lenin Collective Farm”.

Sailboats “Kruzenshtern”, “Pallada”, “Sedov” are training vessels assigned to higher educational institutions of specialized training for people in maritime professions. Their home ports are Kaliningrad and Vladivostok, which significantly affects the expansion of professional and cognitive capabilities of cadets.

Experts related to direct cooperation with the bases of practice and the implementation of the training of cadets for practical training there, note the importance of practical training. Including from the point of view of appropriation of norms and installations of marine subculture. The faculty cooperates with the practice bases not only in terms of providing places for practical training, but active interaction in the formation of cadets skills and qualities that are in demand on the modern maritime labor market: the ability to work in a team, mutual trust, professionalism.

Survey results revealed that currently only certain elements of these teaching methods are used at the university. The methodology of working in groups on simulators is based on the design of elements of a team work process, which includes behavioral, cognitive and emotional aspects. The stimulants for the development of the expected reactions and skills among cadets are artificially created situations of interdependence, assessment of group performance, coordination of behavior in accordance with the interests of the group. Experts agree that this technique is successful if its application is consistent with the general orientation of the pedagogical process of professional training of cadets.

In the course of the survey, we also revealed the opinion of students studying about the types of educational activities that, in their opinion, most successfully shape teamwork skills. The survey results are listed in Table 1.

Table 1. The optimal type of activity for the formation of teamwork skills (opinion of cadets).

| Type of educational activity | Number of respondents | Specific weight % |
|-----------------------------|-----------------------|-------------------|
|                             | 3 course | 4 course | In total | 3 course | 3 course | In total |
| Training practice           | 26       | 18       | 44       | 36.7     | 25.3     | 62       |
| Work on simulators          | 17       | 8        | 25       | 23.9     | 11.3     | 35.1     |
| Classroom lectures          | 2        | -        | 2        | 2.8      | -        | 2.8      |
| In total                    | 56       | 24       | 80       | 63.4     | 36.6     | 100.0    |
Our material indicate that the majority (62%) of cadets involved in the study believe that it is during the swimming practice that norms of corporate interaction are laid down, responsibility for the common cause is formed. While 31.5% of the respondents called the development of teamwork skills on simulators the optimal type of educational activity, and only 2.8% gave preference to lecture classes.

Thus, the internship process is considered by respondents as the most effective tool for building teamwork skills.

This paper presents studies that allow you to follow these conclusions:
- Training of cadets of maritime educational organizations in non-technical skills is considered to be a promising area of Russian maritime education.
- One of the priority vectors of this training is to help cadets to develop the vital social and professional skills such as work in a team, cooperation, professional communication ensuring their competitive advantage in worldwide labor markets.
- By introducing these innovative methods into programmatic training, offshore training organizations demonstrate the ability to flexibly respond to security policies implemented by maritime corporations as part of a corporate safety culture and adapt to new social needs and requirements.
- The corporate culture of maritime university cadets is structurally consistent with both the corporate culture prevailing at the university and the marine subculture.
- The combination and interconnection of external attribute attributes and internal components forms the structure of the cadets' corporate culture.
- external signs of corporate culture are understood as the familiarization of cadets with marine symbols in the form of emblems, a flag, a university anthem, uniform, and communication through a website.
- Analysis of the elements of the internal component of the corporate culture of cadets showed that the assimilation of the values of a maritime corporation is mediated by all forms of corporate behavior, including rules, norms, rituals and traditions.
- University cooperation with the practice bases creates the necessary conditions for the professional self-realization of cadets and the direct contact of cadets with maritime corporate culture.
- The process of practical training, according to the results of the study, is the most effective tool for building teamwork skills.

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