

INTELLIGENT SEAFARERS FOR INTELLIGENT SHIPS

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Introduction. It is natural that the development of post-industrial society and the information sector dominance in the economy, focused mainly on information using (its production, storage, processing, exchange and consumption), cause significant changes in human lifestyle and the world system as a whole. It is now clear that a new civilizational paradigm is being formed, in which information becomes the driving force of development and progress and, accordingly, stimulates intellectual activity.

In recent decades, labor intellectualization has also affected merchant shipping. Generating and implementing various innovations have not only reduced physical activity and routine work, but also emphasized the need to constantly acquire knowledge and competencies due to substantial increase in the seafarers' intellectual activity.

The relevance of the research. In merchant shipping, as in many other industries, the labor intellectualization is becoming increasingly important. It involves the implementation and use of information technologies, automation, artificial intelligence (AI) and other modern technologies to increase the labor efficiency, accuracy, and productivity. In the context of merchant shipping, this may include, according to experts, such aspects as automation in supply chain management, vessel and equipment monitoring systems, electronic document management platforms, AI planning and forecasting, energy management systems etc.

On the other hand, all the progressive innovations in the field of intelligent ship equipment (digitalization and sensor technologies, cloud-based and networking technologies) are pushing the shipping industry towards ship personnel intellectualization.

Research objective. The purpose of the study is to explore the ways of promoting the future seafarers' intelligence level at the English language lessons.

Research results. The word *intellectualization* is often interpreted as *saturation with knowledge*. The predominance of intellectual activities, according to scientists, will change the very essence of a man and create a new type of people: *Homo sapiens* from a *reasonable man* will gradually transform into *Homo intelligens* – a *knowledgeable man* [1:482; 2:9; 3:317], in other words, an intellectual man – a *knowledge worker or brainworker*, with a highly developed intellect and analytical thinking [4].

Highly effective in information and analytical activities, such a person is usually able to think well and quickly, gaining insight into things, and, if necessary, is also able to think in depth and justify his actions. His professional qualities alongside with sharp wit and intelligence include also good sense and sound thinking, which together provide a useful framework for both quick and timely response as well as for making complex and balanced decisions. Such professional qualities reinforced by skills and abilities for teamwork and English-language communication are practically invaluable today. Specialists of precisely this level are badly needed by the modern marine industry.

Noting the fundamental technical changes that have occurred in the world fleet over the past decades regarding the safe operation of the vessel and, above all, the uninterrupted functioning of the ship's power plant (SPP) as the main on-board complex, as well as other general ship systems and mechanisms, experts on the training of ship mechanics simultaneously point out the paradox consequences of fleet modernization [5].

In parallel with the fundamental technical changes that have taken place in the world fleet in recent decades regarding ship safety, marine engineers' training specialists note the paradoxical results of fleet modernization. Primarily, this concerns the smooth operation of the ship's power plant (SPP) as the main onboard complex, as well as other general ship systems and mechanisms.

On the one side, progressive changes in the automatic control of ship operation are obvious. It has been proven that automated equipment and computer-integrated technologies provide reliability and safety in ship equipment operation and maintenance, reducing the probability of errors by means of a central control system. Modern hardware and software systems make it possible not only to control automatically and control, but also to diagnose. Moreover, they provide in-place diagnostics, when the technical condition (level of wear and damage) of ship equipment is determined without disassembling or destroying it.

On the other side, according to ergonomics, automation not only does not eliminate the human factor, but, on the contrary, enhances it. According to experts due to the multiple increase of mostly the English language information volume (esp. in critical situations), the quality of data processing is significantly lost.

Due to some effects of automation, such as crew reduction (a desired goal of shipowners) and loss of sensory characteristics of the current equipment state obtained through the senses, the logical analysis of indicators is difficult. The heuristic method of processing large amounts of information is quite unreliable due to its certain approximation and inaccuracy. Therefore, today, according to researchers, marine engineers with abilities for analytical processing English-language technical information, equipped with interdisciplinary technologies, are becoming extremely in demand because of their ability to go beyond specialized training and solve new challenges. [5, 6]. In an international crew, among the listed qualities of a seafarer, the ability to successfully communicate during group discussions and respond in a timely manner to emerging challenges is also of particular importance.

At the same time, Maritime education and training (MET) experts emphasize insufficient attention to decision-making skills for uncertain conditions. Differentiated teaching of various disciplines, practiced in modern education has almost no projections into real professional activity, which is usually characterized by clearly marked interdisciplinarity.

So, on gaining dispersed knowledge, young specialists can feel completely helpless, finding themselves totally helpless in situations where the facts do not match the knowledge they have. As a result, there is no proper response to an external challenge due to the lack of experience in reacting on it. [5]. If we add another crucial factor - the factor of uncertain communication in English, which turns out to be quite probable and natural in any emergency as well as in circumstances with some degree of uncertainty or lack of knowledge, then the situation most likely comes to a dead-end.

It is clear that in the face of high uncertainty, the ability to find an adequate solution to the problems encountered assumes particular importance. The ability to independently develop the necessary competencies is defined by scientists as meta-competence [2, 6]. As mentioned above, the development of meta-competencies provides the basis for future demand on the labor market due to their interdisciplinary and therefore universal character, that enables the solution of any professional and life problems. And they become almost invaluable if supported by a high level English-speaking competence in professional communication.

A significant role in the development of meta-competencies is played by cognitive processes, more precisely thinking and metathinking. It is thinking, according to scientists, that plays the most important role in the ability to adapt to changing conditions, question reality and make optimal decisions.

Due to the impossibility for at least somehow predicting the events in total uncertainty, there is a need for alternative ways to stimulate one's own mental activity for reformatting mental processes and tailoring them to fundamentally different from the previously established algorithm.

Researchers claim that the format of one's own thinking can be changed through the mechanism of metathinking which is a notch above. This is also emphasized by the ancient Greek prefix *meta-* (μετά-) with the meaning *after*, indicating continuity in development and manifestation. It is also worth noting that all meta-processes can be distinguished not only by

their complexity, but also by their focus, i.e. their object of influence. [2]. They are most fully revealed when functioning in the system, along with all the other personal qualities and characteristics involved in a given task.

So, as the ability to learn, analyze, and also change one's own way of thinking, adapting it to the problem at hand, metathinking performs both cognitive and regulatory functions at the same time. It also acts as an integrative mechanism for regulating the human activity and behavior as well as a means of solving seemingly unsolvable problems.

The results of modern scientific research on the development of metacognitive abilities in students are quite encouraging. In particular, the diagnosis of reflection, recognized as the main indicator of metathinking for conscious introspection followed by rethinking and transformation, revealed a steady upward trend in the percentage of students with high and medium reflexivity when using special teaching technologies [2].

In addition, the psychological data on the close relationship between thinking and speech testify in favor of assessing students' metathinking by observing their speech behavior. As the mental activity indicator and as its direct verbal manifestation, speech behavior acts as a valuable material for recognizing metacognitive abilities. Therefore, according to research results, the following skills they can serve as criteria for assessing metathinking:

- to develop a plan and action strategy
- to identify the problem, formulate goals and objectives
- to outline the work context (physical and social factors affecting the nature of work)
- to stick to the plan
- to coordinate activities with the outputs and requirements
- to realize and verbalize (describe verbally) dead-ends, uncertain conditions or impossible situations
- to change strategies by measuring success.

It has been proven that the ability to perform these actions confirms the ability to consciously regulate one's own mental activity.

Intellectualization by means of the English language can be achieved through various practical tasks that engage students intellectually. They not only facilitate the Maritime English proficiency but also promote mastering their professional skills as well as the abilities for critical thinking and problem-solving, taking on challenges and decision-making, etc. Here are some practical ways used at the English lessons that can contribute essentially to intellectual education:

- *group discussions*, or process of talking about something in order to reach a decision or to exchange ideas. The focus is made on solving problems together and finding solutions. They may be held in the form of a *fact-based discussion* about practical things on day-to-day topics; *opinion-based discussion* check how participants express their opinions or views and therefore based less on facts and more on opinions; *case study discussions* with critical analysis and simulation of real-life situations; and *abstract discussions* with focus on intangible topics and innovative thinking and creativity.

- *debates* as formal discussions about a subject where students have different views on current affairs, ethical issues, or professional topics. Debates encourage students to use evidence and logic to support their arguments on contradictive standpoints.

- *a case study* as a detailed examination of a real-life event related to the topic to answer *why* or *how* questions which involves students in conducting their own independent research. As a tool for analysis and discussion it uses multiple methods of data processing: tracking, analyzing, recording, simulating, interpreting, summarizing, and reporting the findings.

- *problem-solving strategy*, or teaching through problem-solving – activities which are productive both for language learning and intellectual development as they include deciphering word meanings and context clues, solving deliberately confusing puzzles and semantic tricks, or

completing other linguistic challenges as well as critical thinking to define the problem, generate possible solutions, evaluate and select them, and argue for their implementation.

– *project method* – a method of teaching and learning in which students master their language skills plus acquire knowledge and skills by exploring real-world problems which require a period of time to resolve. Through problem-based learning, students learn how to arrange their group research effectively and practise such thinking processes as analyzing and clarifying the problem, brainstorming and generating creative ideas and alternative solutions, reasoning in support of the expected benefits, creating a roadmap and applying change strategies (reconstructing, replanning, regrouping etc.) in case of doubt or inaccuracy, and, crucially, establishing interdisciplinary connections by synthesizing or integrating ideas from other disciplines.

– *creative writing techniques* – assignments that stimulate imaginative thinking and original ideas. Very often, creativity and imagination are encouraged more than the provision of facts and information. As well as polishing language skills for drafting, revising and editing, it will help to develop logical flow of thought, persuasive reasoning and sound conclusions. By the way, this is a good alternative for those who find it much easier to present their ideas in writing.

– *critical reading activities* involves a thorough examination of the claims and arguments presented, rather than accepting the given text without question. Students are encouraged to critically read and analyze, providing any negative or disapproving remarks they may have. Expressing their viewpoints and analyses in English improves not only their language proficiency but also stimulates and inspires the mind fostering critical thinking and reasoning skills.

– *creative reading activities* emphasize active involvement and interpretation of the any professional text (articles, reports, essays, manuals, research papers etc.) rather than passive absorption of its content. Engaging with professional material at a deeper level, exploring its themes, ideas, and implications through imagination and critical thinking is crucial for developing decision-making and problem-solving skills. An open-minded future professional is able to overcome cognitive biases when only facts confirming assumptions are attended to, while disproving ones are ignored. He can evaluate information effectively and make informed decisions.

Conclusion. The practical activities presented not only enhance language skills but also foster critical thinking, creativity, and a deeper understanding of the subject. They not only encourage students to express themselves effectively in English but also cultivate their ability to intellectualize their professional education. This is not an exhaustive list of teaching methods employed in English classes to educate highly intelligent specialists. The rise of artificial intelligence poses new challenges for educational technologies still to be solved. The significant role of the English language in promoting intellectual growth and delivering high-quality training to skilled seafarers cannot be overestimated. Moreover, it offers access to professional information and enables effective communication in multinational settings, fostering teamwork and close collaboration across diverse fields of study.

LITERATURE

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