

## Розділ 3. Нові інформаційні технології в освіті

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### DEVELOPMENT OF A METHODOLOGY FOR EVALUATING THE EFFICIENCY OF SHIP OPERATOR MODEL

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**Abstract.** In the thesis, emphasis is placed on the importance of developing a methodology for evaluating the efficiency of the ship operator model, analyzing the model's compliance with stakeholder needs, and utilizing adaptive educational systems for training ship operators, considering contemporary trends in maritime transport development.

**Introduction.** In modern maritime transport, it is crucial to develop an effective ship operator model that meets the demands of the labor market and contemporary development trends. This entails identifying key efficiency indicators, conducting an analysis of the model's compliance with stakeholder needs, and exploring the possibilities of utilizing automated adaptive educational systems.

**Problem Statement.** The research problem lies in the necessity of developing an effective ship operator training model that meets modern market requirements and educational standards. This also includes optimizing automated data collection and analysis, essential for preparing and making decisions by ship operators.

**Main Part and Essence of the Study.** The necessity of conducting research on existing approaches to ship operator modeling in the context of maritime transport organizational-technical systems requires accomplishing a series of tasks aimed at achieving the overall goal. Firstly, it is essential to gather information on contemporary approaches to ship operator modeling and conduct a comparative analysis of different approaches to building ship operator models [1,2]. Afterward, it is necessary to study analytical methodologies that can be applied to construct a ship operator model and develop a methodology for building a ship operator model based on analytical approaches. Furthermore, it is crucial to determine the key performance indicators for the ship operator model and develop a methodology for evaluating the effectiveness of the ship operator model based on the defined criteria [3,4].

Next, analyze the conformity of the developed ship operator model to the requirements of different stakeholder groups, including regulatory bodies, shipping companies, educational institutions, and other interested parties [5-7]. Finally, explore the possibilities of using adaptive educational systems in the preparation of ship operators, considering the individual characteristics of each student and providing flexibility in the learning process that meets the needs of the labor market and current trends in maritime transport development.

Additionally, it is necessary to perform a series of tasks related to automated data collection in maritime transport. Firstly, conduct research on modern methods of automated data collection and their comparative analysis, which will help understand the possibilities and limitations of each method. Then, analyze the reliability and accuracy of the studied methods of automated data collection, identify their drawbacks and advantages, which will facilitate the selection of the most effective solutions. Based on the obtained results, choose the most efficient and reliable methods of automated data collection that meet the requirements of the ship operator training system.

Furthermore, it is necessary to analyze the collected data, identify patterns, interrelations, and possible impacts on the ship operator model, and evaluate the effectiveness of applying automated

data collection methods. This will help understand how the obtained data affects the organizational and technical systems of maritime transport in Ukraine.

Finally, determine and propose strategies for improving the process of automated data collection, particularly in real-time, with the aim of enhancing the efficiency of analysis and data use for ship operator training. Considering well-founded decisions and recommendations will contribute to the successful achievement of the set goal.

In turn, it is essential to research and classify existing decision support systems, their features, and potential applications, which will help create an effective information model for the navigator.

Moving forward, it is necessary to develop a mathematical model of the dynamic trajectory of the ship operator that considers various factors influencing the decision-making process, which will help improve the performance of decision support systems. The next step is to develop methods for integrating decision support systems with automated data processing systems, such as data collection, processing, and analysis systems, to enhance the decision-making results of the ship operator.

It is also crucial to conduct surveys and analyze the requirements of different stakeholders regarding the dynamic component of the ship operator's information model. Understanding the needs of management, crew, and those responsible for safety will contribute to the development of effective solutions.

The final stage involves the development of algorithms for constructing the ship operator's information model based on the decision support system, which will allow considering dynamic characteristics, stakeholder requirements, and integration with automated data processing systems.

**Conclusion.** The proposed development makes it possible to improve the quality of training of vessel operators, providing flexibility and an individual approach to training, and also improves the decision-making process in maritime transport due to the optimization of automated data collection and analysis.

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