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Visualization of Maritime Safety Culture - Development and Evaluation of an Interactive Learning Tool

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12) Visualization of maritime safety culture – development and evaluation of an interactive learning tool.

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A Swedish maritime safety project focusing on building up competence in the area of human and organizational factors and safety culture, yielded new knowledge for increased safety at sea. Safety culture in an organization concerns having an awareness of risks and the knowledge, ability, and willingness to prevent them. The Swedish shipping industry realize that positive attitudes to safety and a good safety culture are needed in all activities in the sector, and that understanding about these issues needs to be rooted early in a seaman's education. It was therefore considered that the experiences and the knowledge gained in the research project should be disseminated on different levels in the maritime sector to gain a long term positive effect on safety. Therefore, an educational material was decided to be developed with the purpose of educating students at upper secondary maritime schools in the area of safety culture and safety management.

The aim of the current study was to design an interactive prototype to visualize knowledge about maritime safety culture based on cognitive theories and practical examples.

A preliminary prototype was developed using a participatory design process involving researchers and the potential users from a maritime school in Sweden. A pilot study was performed where the prototype was tested in an educational setting.

The usage of the prototype supported education, communication and learnability among students. The results also showed very positive responses from students, as well as teachers, in using the prototype. The approach to visualize the concept of maritime safety culture with interactive illustrations and animations resulted in clear presentations of important situations and scenarios, fruitful discussions and positive attitudes among the users of the prototype.

It is very likely that the current approach to design and visualize dilemmas and safety situations could function also in other sectors such as transport, medical, and manufacturing industry.

Keywords: education, maritime safety, visualization.

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