

# Simulation didactics in the practice of maritime universities



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In today's pedagogical reality, we are no longer dealing with one-dimensional thinking about teaching. Pedagogical practice is evolving, "becoming", and is no longer given "once and for all" and for all time. Teaching situations need to be "tailored" to an increasingly demanding audience.



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There are now indications of the need for revolutionary changes in the approach to who, how and in what way learning takes place. Many ideas are emerging, although no one really seems to know exactly in which direction these changes should go yet. One thing is certain, however - the model of education in which a teacher presents knowledge to a group of listeners gathered in a classroom is in no way compatible with reality.



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John Dewey believed that "education is the result of internal and objective dependencies, and all true education is the result of experience".



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Leaving the traditional teaching method centred on the principle of 'see, learn, pass on' and problem solving has allowed technology to develop increasingly specialised simulation machines.





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## Simulation - definition

The artificial reproduction of the properties of an object or phenomenon by means of a model of it.



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In the literature, a distinction can be found between realistic, virtual and constructive simulations. In realistic simulations, real people use real equipment, but outside the context of a real event. In virtual simulation, real people use simulated equipment, while in constructive simulation, simulated people work with a simulated system.



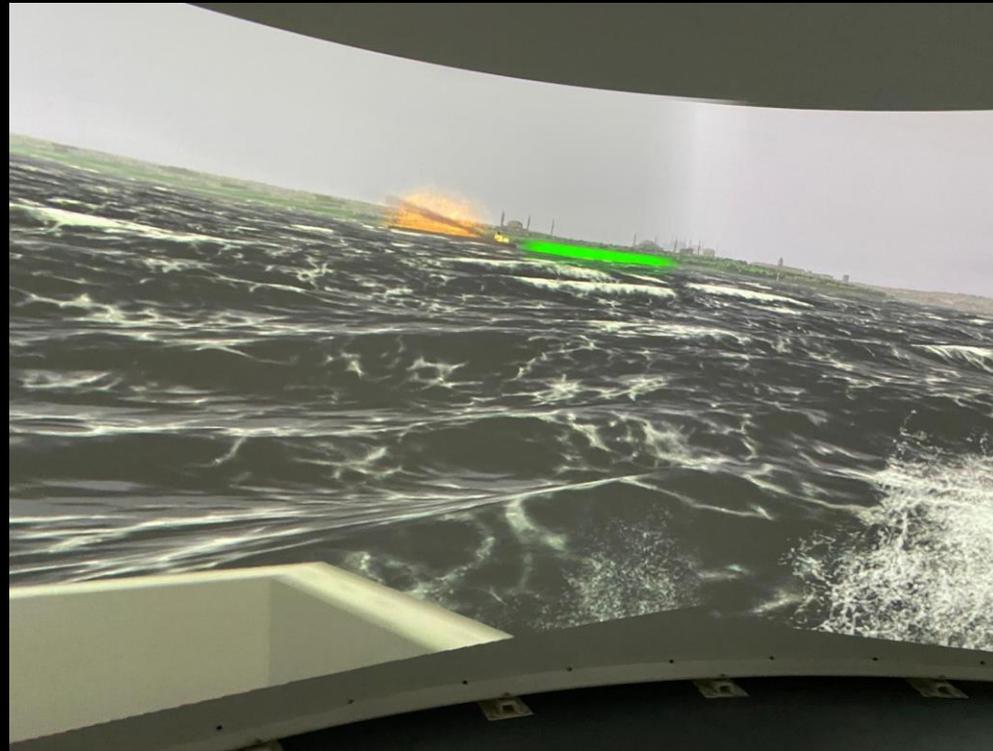
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What opportunities exist for learning through simulation?





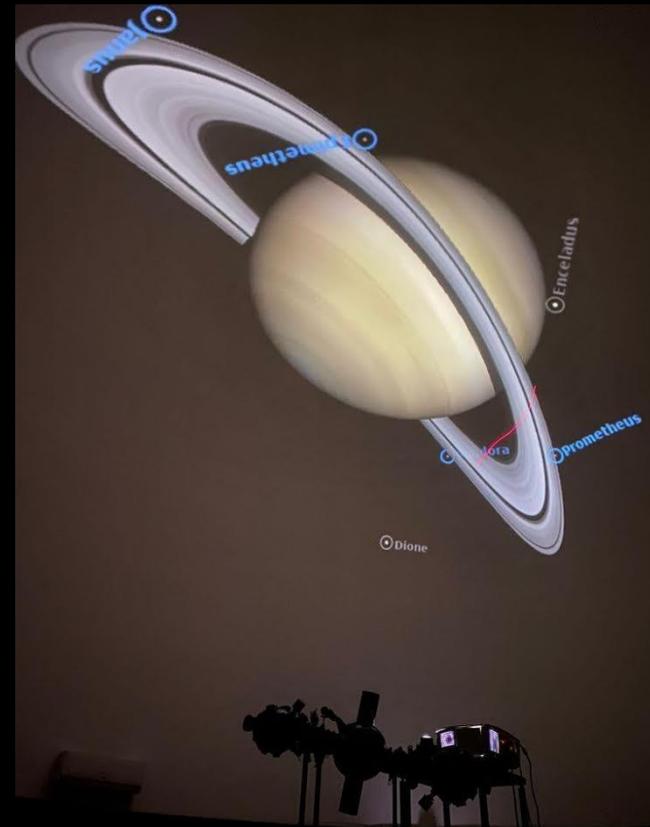
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Simulators enable experiential learning, which is one of the basic foundations of teaching-learning for adults.





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Simulator classes should follow the so-called Kolb cycle.

The four stages of the Kolb cycle:

- experience,
- reflection,
- generalisation (theory),
- application (practice).



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Sample questions from the educator at the reflection stage:

- What exactly happened?
- What did you observe while performing the experience?
- What did your action consist of?
- What positive/negative effect did your action cause?
- What exactly did you do?
- What effects did your action have?
- What are the advantages/disadvantages of your action?
- Which part of the experience was most significant?
- What emotions did the individuals involved in the experience feel?
- What determined the success/failure of the experience?



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The generalisation is to confront one's own conclusions with the theory. This part of the cycle belongs largely to the educator, although the activity of the participants can of course be used here as well. The trainer should summarise the group's conclusions, name them and relate them to the level of theory that underpins the explanations of the phenomena observed in the experience phase. This is the phase of a kind of abstract conceptualisation of experiences.



Application is about linking formulated theory to future practical action. The role of the trainer is to inspire and motivate participants to put into practice the skills they are learning. To plan the application of new knowledge, skills in practice.



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Sample questions from the trainer at the application stage:

- How will you use the experience just made and the theory formulated in your work?
- What benefits will you have from putting into practice the skills you have learned and acquired?
- What does mastering these new skills give you?
- How will the new skills improve your work?
- How will the new skills make it easier for you to function in a team?
- In what other areas can you apply the new skill?
- What can you do differently?
- What can you improve?
- What will you pay attention to next time?
- What will you be particularly mindful of next time?