

EUROPEAN MARINE SCIENCE EDUCATORS ASSOCIATION CONFERENCE

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CretAquarium, Heraklion, Crete

CONFERENCE HANDBOOK





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UNIVERSITY OF GOTHENBURG



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Investigating the cross-cultural validity of the SOLE: Evidence from high-school students in Greece and the U.S.A.

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Measurement of individuals' knowledge about ocean sciences issues requires tools that are aligned with the Essential Principles and the Fundamental Concepts of ocean literacy and possess well-established psychometric properties. Considering the lack of comprehensive instruments and the increasing demand for standardized tools that also allow for cross-cultural comparisons, the present study investigated the cross-cultural validity of a modified version of the SOLE scale, developed by Greely in 2008, in U.S. and Greek high-school students, using a Rasch analysis framework. The Rasch measurement model was used to generate item-fit statistics, assess item appropriateness and identify the item-difficulty hierarchy. The questionnaire was found to be a reliable and valid tool for assessing the ocean content knowledge of high-school students in both countries. The item-difficulty hierarchy was consistent between the two groups, further supporting the construct validity of the instrument. Particularly, respondents in both countries had the greatest difficulty with the questions concerning a) the ocean's connection to all of the earth's water reserves, b) the deep ocean ecosystems that are independent of energy from sunlight and photosynthetic organisms, c) the pollution sources which put the most oil in the ocean, and d) the earth's carbon cycle. Conversely, the easiest items to address for both groups concerned a) the ocean's surface coverage on earth, b) the hydrological cycle, c) the ocean's influence on surface temperatures, and d) how temperature and light availability change with increasing depth. Overall, participants demonstrated low to moderate levels of knowledge. The use of the SOLE could contribute to the assessment of the quality of marine education, as well as to the cross-cultural comparison of ocean literacy. Information on both issues is valuable for the improvement of ocean literacy.

Everyone's Skagerrak

Jensen M. M., Larsvik L.

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The Lovén Centre at the University of Gothenburg has had regular marine outreach activities since the 1980's. Schools and the general public can throughout the year visit Sweden's two largest marine research stations to learn more about the sea and about marine research. The Lovén Centre is also the host of research camps for youths where they work according to the methodology "to think like a scientist".

In November 2014, two marine biologists conducted a tour of non-coastal parts of western Sweden, with the hour-long program "Everyone's Skagerrak", meeting 770 persons. The program began with an introduction of the Skagerrak: the connection between the district we visited and the Skagerrak, the marine life and the ecosystem services we get from the Skagerrak. We showed three films concerning research on changes in the ocean environment: ocean acidification, invasive species, and eutrophication. We also brought our mobile touch pool where participants got to explore 15 spectacular marine species with several senses.