



EMSEA 2017 Conference Malta

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University of Malta

Abstracts booklet

The European Marine Science Educators Association (EMSEA) is an informal non-profit organisation which provides a platform for ocean education and promoting ocean literacy within Europe. The rationale of **EMSEA** is educational and scientific.

GOALS

The particular goals and activities of EMSEA are the following:

- Stimulate dialogue between European and international marine educators and scientists;
- Provide training and teaching materials to support marine educators;
- Raise educators awareness of ocean issues and the need for a sustainable future for our coasts, seas and oceans.

ACTIVITIES

- to organise workshops and conferences for marine educators;
- to build a web portal with links to providers of marine educational and research-based materials;
- to provide a forum for members feedback and communication.

Further information about EMSEA can be gleaned through www.emsea.eu

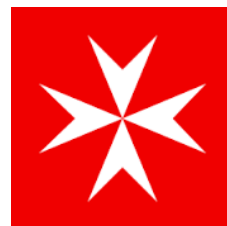


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Challenging Greek sixth graders' knowledge of carbon cycle and ocean acidification

The current study deals with the assessment and enhancement of sixth graders' knowledge of carbon cycle focusing on the effects of carbon dioxide increase on ocean acidification. It was conducted with a convenient sample of 17 experimental and 17 control group students from two classes of different public primary schools in Greece. The research combined quantitative and qualitative methods, namely (a) a structured questionnaire which included an 18-item knowledge scale and a concept inventory distributed to the experimental and control groups as pre-test and post-test, and (b) "rich pictures" drawn only by the experimental group before and after the learning process. The authors developed a program for primary students, based on international scientific educational resources, whose goals were aligned with the Ocean Literacy Scope and Sequence guide. It included 10 hours of inquiry-based and knowledge-integration class activities, such as experiments, concept maps, use of virtual laboratories and interactive online activities regarding carbon cycle and ocean acidification. The findings indicated that, although the experimental group was initially statistically equal to control group, it revealed statistically significant increase in knowledge scale after the intervention, as most students almost doubled their performance. The concept inventory also showed a statistically significant increase in self-reported content knowledge of the experimental group only. The analyses of the students' rich pictures at the beginning of the learning process indicated that most of them possessed an incomplete picture of the carbon cycle and had many misconceptions. On the other hand, students' significantly increased acquaintance with the carbon cycle components and processes was clearly manifested in the rich pictures after the learning process, while, at the same time, some misconceptions were also revealed to steadily remain. This study's findings provide a basis for offering suggestions on ways marine education might foster students' ocean literacy.