



Ocean Literacy and Ocean Misconceptions in a sample of Italian students

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Born in the US at the beginning of the 2000s, the Ocean Literacy (OL) movement spread also in Europe and, more recently, in the Mediterranean countries, where European Marine Science Educators Association (EMSEA) – Med workgroup is developing educational initiatives for schools and general public as well as education research on OL among students of some Mediterranean countries.

Within these activities, in 2018 we investigated a sample of primary (4th-5th grade) and lower secondary (8th grade) school students of the coastal area of Friuli Venezia Giulia (North-Eastern Italy) by means of structured questionnaires. We found that, in spite of the scarcity of ocean related topics in official school curricula, students revealed a satisfactory knowledge of some OL concepts as - for instance - the connections between humans and sea, the biodiversity of marine ecosystems, the life origin in the sea and the influence of sea on climate. On other OL concepts, though, sample students showed low knowledge level, with presence of diffuse misconceptions.

In both age groups most students thought that:

- a. Seas and ocean basins are not all connected
- b. Forests are the main source of oxygen
- c. Precipitations originate from water evaporated from neighboring seas

In the secondary school group also emerged the idea that:

- d. Past sea level was higher than now

Some of these misconceptions have already been described in literature, as b. (Phillips 1991, Cook 2018) and c. (Cardak 2009), while d. is quoted as a common creationist myth of “Flood Geology” (Senter 2011), even if it must be noticed that creationist thinking is reported as uncommon in Italy (Blancke et al 2013).

On the contrary, misconception a., regarding the connectedness of all seas and ocean, appears only in an anecdotal report and seems quite new in empirical research. This finding may be surprising, considering that “The Earth has one big ocean” is stated as the first Ocean Literacy principle and resulted an “easy” concept in a large international study on a high school students (Fauville et al 2018). Nevertheless, in Italy this issue is generally misrepresented in primary and lower secondary school textbooks and probably in teaching practice.

Intending to extend our research, we developed specific hands-on teaching activities to overcome these misconceptions and are currently testing their impact on students’ OL.

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