

What do Ocean Literacy research projects tell us about the use of Mobile Digital Technologies? Potentialities and constraints in science education

Diana Boaventura^{1,2}, Ana Teresa Neves^{2,3} & Cláudia Faria³

¹ Escola Superior de Educação João de Deus, Centro de Investigação e Estudos João de Deus, Lisboa, Portugal

² MARE – Marine and Environmental Sciences Centre, Laboratório Marítimo da Guia, Faculdade de Ciências da

Universidade de Lisboa, Cascais, Portugal

³ Instituto de Educação, Universidade de Lisboa, Lisboa, Portugal

ABSTRACT

The use of Mobile Digital Technologies (MDT) has considerably increased in educational contexts recently. This study analyses the implementation of learning activities using MDT and reflects on the potential and limitations of these experiences in two Ocean Literacy research projects, related to intertidal rocky shore ecosystems: EDUMAR (SAICT-POL/23482/2016) and 'Roteiro entre Marés' (FA_06_2017_011). Participants included elementary students, pre-service and in-service teachers, researchers and users of the digital platforms. A mixed methodology was applied using questionnaires, semi-structured interviews, focus group interviews and image records inserted by students on digital platforms/apps. Results showed the potential of MDT on both the learning of the students and teaching process, since they are a useful resource for motivating students and for creating more dynamic and interesting activities. However, some constraints were identified as the layout and the excessive text in the app, the reduced concentration of students on specific tasks while using the app, and equity problems on the quality of MDT equipment. In the referred projects, the use of MDT resources constituted an important bridge between formal and non-formal science education and for linking interdisciplinary subjects. Moreover, the findings revealed the importance of MDT integration on diverse science education levels. The project (FA_06_2017_011) is funded by Fundo Azul (Direção-Geral de Política do Mar).

Keywords: elementary students; learning; pre-service teachers; teaching; rocky shores