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GAMES IN ENVIRONMENTAL EDUCATION, COMMUNICATION AND SCIENCE

Joern Schmidt (*Christian-Albrechts-University Kiel, Cluster of Excellence Future Ocean, Germany*)

Dennis Nissen (*Naym, Germany*)

Michel Magens (*Naym, Germany*)

Rudi Voss (*Christian-Albrechts-University Kiel, Cluster of Excellence Future Ocean, Germany*)

jschmidt@economics.uni-kiel.de

Games as tools for the mediation of learning contents, board or computer games are not a novel idea. However the full potential of games and experiments as powerful tools for education, outreach and research especially in fields related to maritime and coastal management has not fully explored yet. Main uses of games are teaching economic, ecological and social principles to students or the public, communication with stakeholders in participatory assessment or management and collecting scientific data in controlled research experiments. Games and experiments can be designed so that players' or subjects incentives parallel those in a specific community or set of activities. How players or subjects respond to incentives, and how their responses affect other players/subjects' incentives, can be extremely instructive, leading to insights not easily attained from other approaches such as modelling. The use of role-playing games can foster the understanding of different perceptions and mediate communication, especially in situations where other ways of communication have failed. We present general frameworks for games for the education of the broad public and a conceptual framework for more complex games, which might be used for scientific experiments and stakeholder communication.

In popular perception, games tend to be viewed as "fun" and experiments tend to be viewed as "serious." Actually, games and experiments can be the same thing: there is no reason that a fun game cannot also be a serious experiment, or vice versa. The more "fun" a game is the greater the potential to seriously engage participants in thinking about the choices they are presented by the game (McGonigal 2012). The player implicitly learns in the system and exhibit behaviour which reflects his or her personal experiences (Gee, 2005).

Gee J (2005) What would a state of the art instructional video game look like?. *Innovate* 1 (6). <http://www.innovateonline.info/index.php?view=article&id=80> (accessed August, 2012).

McGonigal J (2011) *Reality Is Broken: Why Games Make Us Better and How They Can Change the World*. Penguin Press, 400 pp.