

EGU2020-13234

<https://doi.org/10.5194/egusphere-egu2020-13234>

EGU General Assembly 2020

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DiG-DAG: Didactic Game for Divulcation of Understandable Geophysics

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Geophysics is the application of the laws and techniques of physics to disclose knowledge about the Earth's dynamic processes and subsurface structure. It explores phenomena such as earthquakes, volcanoes, tsunamis to improve our understanding of the Earth's physical processes. Effective mitigation of risks from catastrophic geophysics hazards requires knowledge and understanding of natural processes. Scientific divulgation deals with the communication of knowledge previously produced in scientific contexts to a non-expert massive audience. One of the difficulties science divulgators need to overcome is to explain specific concepts, even complex, from a given discipline in a language simple and understandable, maintaining scientific correctness, and enhance skills, knowledge and competences of their interlocutors.

Considering that, nowadays, digital technologies play a large role in young people's lives and games are directly connected to the life of adolescents, we realized an educational videogame to teach geophysics and Earth sciences to low and high-school students; an educational computer game, serious game, where electronic medium with all the characteristic of a gaming environment convey formative outcomes. The starting point is that technologies are systems of open possibilities that can be effectively integrated with innovative methods of education necessary to promote more effective, efficient, attractive and durable learning. In fact, the ardour and enthusiasm that digital games evoke in teenagers has brought many researchers, school leaders and teachers to the question "how video games" can be used to engage young people and support their learning.

A first stage of the project of Virtual Reality, "Journey inside the volcano", were presented at several scientific divulgative events, such as the ESA Living Planet Symposium, The National Geographic Festival delle Scienze, the September 29th INGV Open Day, involving more than a thousand users and receiving appreciation from the public. We present the serious game and the related appreciation analysis based on guestbook comments compiled at the end of the experience. The comments reveal a great level of appreciation, involvements and emotions, and margins of improvement. The results foster us to improve the project developing other geophysical topics.