"So we can't bring a volcano into the classroom…" Communicating geosciences through digital media

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There are many fascinating, exciting and important aspects of geoscience that we just cannot physically bring into classrooms and public engagement events in all their glory. Volcanic eruptions, using drones to combat environmental crime, museum exhibits of dinosaur remains… and so we must find other ways in which to capture the imagination and attention of the scientists of the future, and make science and scientists accessible and relatable to them.

How best to do this? What do we need to consider? What do audiences want? Do our approaches actually work? Research and practice from three different projects, at varying stages of development, which use computer-based applications to engage public audiences with geosciences give us some insight into effective use of novel communication methods in this area.

Science Hunters (1) is a successful and well-established outreach project which uses the widely popular computer game Minecraft to engage children with science. Run by environmental scientists, there is a heavy focus on geosciences (2). Minecraft is akin to Lego on a computer, but with many more building possibilities. Features and processes are relatable to those in the real world, which, along with the widespread appeal of the game, make it an ideal tool for communicating scientific topics. The Science Hunters approach is highly effective in engaging children, as shown by project evaluation data.

Science for Environment Policy (3) communicates environmental research findings in easy-to-understand formats to policymakers and citizens across Europe, strengthening the connection between scientific evidence and policy, and is evaluated annually, charting the impact of an element of its digital media. Recent project videos have showcased a variety of geoscience issues in a variety of formats as part of the public service. An evaluation undertaken with students of relevant environmental sciences gives insights into which of these most formats are most appealing, and likely to be used more widely.

The Virtual Natural History Museum (4) is a novel engagement project that places digitised museum resources back on public display. The website takes the form of a giant computer game museum which visitors can explore, viewing palaeontological multimedia. This grants any community with an internet connection immediate access to world-class natural history collections, providing everyone with the opportunity to learn about fossils and past environments. The project is currently in development for use in schools, presenting an opportunity to find out more about how teachers respond to such tools. Research into teachers' views and ideas about how such a resource might be used in schools is widely applicable to other sciences.

1 www.lancaster.ac.uk/sciencehunters
2 Hobbs et al., 2018. Digging Deep into Geosciences with Minecraft. Eos, 99(11), 24-29
3 http://ec.europa.eu/environment/integration/research/newsalert/index_en.htm
4 http:///www.vnhm.org