



Teaching Perspective

Engaging the public with geoscience through 'virtual guided walks'



Geraint Owen

Department of Geography, Swansea University, Singleton Park, Swansea SA2 8PP, United Kingdom

ARTICLE INFO

Article history:

Received 16 August 2016

Accepted 2 September 2016

Available online 20 October 2016

Keywords:

Public engagement
 Geological outreach
 Science communication
 Geoconservation
 Geodiversity
 Geology of South Wales

ABSTRACT

Scratching the Surface is a set of ten 'virtual guided walks' interpreting geology and landscape in the countryside around Swansea, presented as illustrated leaflets supported by a website and 'live' talks and guided walks. A summary of the design, planning and execution of the project provides a case study of how public engagement can produce lasting and effective materials that convey an understanding of geology, geodiversity and landscape evolution to non-specialists of all ages, while also contributing to wider social agendas, such as public engagement with science and rural economic wellbeing. This article provides an overview of the project and offers guidelines for using fieldwork to convey an effective public understanding of geology and landscape.

Crown Copyright © 2016 Published by Elsevier Ltd on behalf of The Geologists' Association. All rights reserved.

1. The rationale: public engagement and virtual guided walks

'Public engagement describes the myriad of ways in which the activity and benefits of higher education and research can be shared with the public' (NCCPE, 2015). In relation to science, 'the purpose of public engagement is to enable people to learn about, consider, question and debate science issues and to be inspired by and understand the benefits that science brings to society' (NERC, 2009). In 'A vision for Science and Society' the Department for Innovation, Universities and Skills sought to develop 'A society that is excited about science, values its importance to our social and economic wellbeing, feels confident in its use, and supports a representative well-qualified scientific workforce' (DIUS, 2008). Successful engagement with the general public in relation to academic research, science in general and geoscience in particular recognises and addresses public curiosity about science, and represents a return to the public for public investment in academic research. It improves public understanding and enriches the quality of debate on important social issues such as energy sources and their sustainability, environmental and climatic change, and waste disposal (Stewart and Nield, 2012) and emphasises the benefits of geodiversity to society (Gordon et al., 2012).

In the context of public engagement, 'science' refers not only to scientific issues and specific research findings, but also to the processes and logic by which scientific research progresses: 'Having an engaged public means recognising that science is not just a body of facts, but a discipline with established methods of

inquiry' (DIUS, 2008). This is particularly significant in relation to field-based research; it is important to dispel the misunderstanding that geological reconstructions of the Earth's past are simply guesswork, and to demonstrate that such reconstructions are based on the interpretation of evidence using sound scientific principles.

It is within this framework of public engagement with field-based geoscience that the project *Scratching the Surface* arose with the aim of simulating the experience of expert-led geological guided walks in an effective self-guided format.

Many people who enjoy the countryside want to know and understand more about the landscape around them—how it formed, how it has changed through time, what kinds of rocks underlie it, how they formed, how they can be used, how this impacts on the environment, and how the many diverse aspects of landscape link together through ecology, archaeology, history, industry, culture and agriculture. Although they may not realise it, they want to engage with geoscience in order to know and understand more about geology and physical geography, and responding to this is an important element in addressing the challenges faced by geoconservation in the 21st Century (Prosser et al., 2011).

Expert-led guided walks are a tried and tested way of conveying an understanding of geology and landscape (or ecology, history or archaeology) to audiences ranging from undergraduate students and school pupils through special-interest groups to the non-specialist general public. An 'expert' – often with an academic background – leads a group of interested people around a set route, explaining features encountered along the route to provide an interpretation and understanding of their significance and of the

E-mail address: g.owen@swansea.ac.uk (G. Owen).

principles on which the interpretations are based. In these ways an expert-led, interpretive guided walk differs from a simple guided walk in which the prime purpose is the activity of walking; an expert-led, interpretive guided walk is very much an academic and pedagogic activity.

Difficulties with this format of public engagement, however, include the limited availability of suitable experts and the practical logistics of organising activities. Guided walks are often hosted at events such as science festivals or through the programmes of special-interest groups, but this can limit the ability of many members of the public to participate in them, either because they are not in the right place at the right time or because they are not aware of the event taking place.

The experience of an expert-led, interpretive guided walk can be reproduced, without the expert being present, through a variety of media, including both traditional, tangible forms – books, leaflets, display boards – and digital technologies such as apps, podcasts and audio-trails. These ‘virtual’ guided walks vary widely in their ease of use, the level of prior knowledge and understanding they expect from the user, and whether they focus on explaining features or aim to provide a deeper understanding of geological principles, regional geology, resource geology or landscape evolution.

Four main challenges can be identified to the successful reproduction of the experience of an expert-led guided walk: (1) ensuring that users do not get lost; (2) making sure users look at the right things; (3) successfully conveying an understanding of what those things mean, ideally in terms of underlying principles and deductive processes as well as basic information (Stewart and Nield, 2012; Fullan and Langworthy, 2014); and (4) maintaining people’s interest and safety from start to end. In a ‘live’ guided walk the extent to which these challenges are met depends largely on the personal, academic and pedagogic skills, experience and effectiveness of the ‘expert’ leader, but in a virtual guided walk the leader is not present.

The aim of the *Scratching the Surface* project was to cater for the public interest in geology and landscape by producing an attractive and effective set of self-guided interpretive materials for short walks. The walks encourage people to visit less-frequented, rural parts of Swansea, contributing – albeit in a small way – to rural economic wellbeing. This article will outline the context in which the project arose, discuss some of the guiding principles that shaped it, and show how it achieves the challenges faced by a successful virtual guided walk. It is hoped that others undertaking guided walks for the public, producing virtual guided walks or involved in public engagement activities in general will benefit from this sharing of experience.

2. The project: City and County of Swansea Rural Development Business Plan

Scratching the Surface was a project within City and County of Swansea’s Rural Development Business Plan, which ran from 2011 to 2014. The Plan distributed funding from the European Agricultural Fund for Rural Development and the Welsh Government to projects that could contribute to economic wellbeing in rural parts of Swansea. The rationale behind *Scratching the Surface* was that support materials for themed walks would attract people to rural areas where they might support local businesses such as pubs, cafes, shops, accommodation and public transport. The theme of geology and landscape satisfied my own educational and academic interests as a university-based academic.

The project addresses additional criteria required by the Business Plan. The activity of walking promotes health and wellbeing through exercise and activity. An environmental focus contributes to the awareness and understanding of issues such as

sustainability, and climatic and environmental change. Linking trails and leaflets to a website addresses sustainability and accessibility. It was decided to focus on support materials rather than infrastructure such as path improvements or signage because those would require ongoing maintenance to prevent deterioration. All of these factors were important considerations in the application for funding under the Rural Development Business Plan.

The application was initially unsuccessful but was funded in a second round of submissions. Funding ran from early 2012 until the end of 2014, covering a time contribution by myself and a physical geography colleague, Professor Siwan Davies, plus travel and equipment costs, leaflet and website design (by Icon Creative Design of Newport, Gwent), Welsh translation (by Dyfed Elis-Gruffydd), audio recording of some trails (by Audio Trails Ltd) and printing of 5000 copies of each of 10 leaflets, allowing the leaflets to be distributed free of charge.

This project enabled me to combine my interests in geology, public engagement and walking in the countryside, and to build on previous experience of publishing interpretive guides for short walks through leaflets produced for the Geologists’ Association South Wales Group (www.swga.org.uk/pubs) and a book of short geological walks (Howe et al., 2004). From an academic and educational point of view, this was an opportunity to use the funding provided by the Rural Development Business Plan to develop interpretive materials for the geology of an area. Similar opportunities to link education and public engagement to other agendas such as economic development may arise through collaboration with bodies such as Geoparks.

3. The product: *Scratching the Surface*

The title *Scratching the Surface* reflects the need to at least imagine removing the veneer of vegetation, soil and human structures to see through to the sediments and rocks beneath in order to understand geology and its role in forming the landscape. The subtitle *Discover geology and landscape: walking trails in rural Swansea* gives a concise explanation of the scope of the project.

The twin focus on geology and landscape recognises that landscape often captures the public interest and imagination ahead of rocks. Many people who enjoy walking in the countryside and along the coastline are curious about the landscape and its origins, particularly in relation to long timescales. They want to understand the elements of spectacular or familiar views and are fascinated by the permanence – or otherwise – of landscape. What did this landscape look like in the past? Has it changed? What caused those changes? What elements of the landscape are the legacy of glaciers? When did that river start to flow? Why does it follow that course? Has it always done so? Why is this valley here? Why is that valley so narrow? Surely these hills were never under the sea? The answers to these questions and many more require an understanding of geology—the materials beneath the surface, the processes that formed them and the history they can tell. It is these kinds of questions that *Scratching the Surface* set out to address.

The concept is a series of walking trails in which the activity of walking comes first, with relevant features of geological interest pointed out along the way; the geology is subsidiary to the walk. This contrasts with many interpretive trails in which walking (or driving) is a necessary activity to connect sites of geological interest, and it targets the project firmly at people who enjoy walking but might profess to have no interest in geology.

Ten leaflets accompany ten trails spread through rural parts of the City and County of Swansea (Fig. 1). Electoral wards in the City and County of Swansea defined as ‘rural’ form two clusters separated by the urban areas of Swansea, Gowerton and Gorseinon. One is the Gower peninsula, designated Britain’s first

Download English Version:

<https://daneshyari.com/en/article/4734571>

Download Persian Version:

<https://daneshyari.com/article/4734571>

[Daneshyari.com](https://daneshyari.com)