Inquiring Rock Hunters

Maria Aristeidou, Eileen Scanlon, Mike Sharples

Institute of Educational Technology, The Open University, U.K.
{Maria.Aristeidou, Eileen.Scanlon, Mike.Sharples} @ open.ac.uk

Abstract. The Inquiring Rock Hunters project is an example of Citizen Inquiry. Adult citizens designed and ran their own investigations in geology, through the online platform called nQuire, while collaborating with scientists. Analysis of the investigations shows patterns of collaboration and mentoring between novice, intermediate and expert geologists, however further work is needed to create a self-sustaining community of inquiry.

Keywords: Citizen Inquiry, Online Science Learning, Engagement with Science, Scientific Investigations, Community of Inquiry.

1 Overview

Citizen Inquiry for Inquiring Rock Hunters combines aspects from Citizen Science and Inquiry-Based Learning [1]. Important components of the design of the project are collaboration, knowledge sharing, peer review aligned to Citizen Science, as well as experimentation, discovery, critique and reflection associated with Inquiry-Based Learning. Citizen Inquiry addresses a need for citizens to adopt a sense of shared responsibility for scientific issues and become critical of the scientific information they receive [2].

The aim of Inquiring Rock Hunters is to support members of the public in designing and engaging in scientific investigations on rocks through an online community of inquiry. Geologists (experts and non-experts) having a shared interest in geology interact and exchange knowledge and methods supported and guided by the tools within the web-based inquiry environment, the nQuire platform [3][4].

Inquiring Rock Hunters is the first design study of a design-based research project which aims to explore the potential of Citizen Inquiry in engaging citizens with science and scientific investigation. Thus, the research question is shaped to this theme:

*"How can non-expert geologists engage in successful **Inquiry-Based Learning** through peer **collaboration** and **mentoring** by experts within **informal settings**?"*

For the data collection a survey and a System Usability Scale questionnaire were given to the participants, the published investigations were analyzed, and an online focus group discussion and online and face-to-face interviews were conducted.

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The project recruited 24 adult participants with interests in geology, of whom twelve created their own investigations. Seven investigations were complete (conclusions included) and three investigations received feedback without a follow-up discussion. The participants communicated through a forum and a chat. The usual pattern was for the amateurs to ask for help, the experts to guide and the intermediate geologists to be inactive. The participants reported that the platform was not very usable and that they needed a tutorial on how to operate it.

The results of the project confirm the active contribution of specific members only; the creators of incomplete investigations do not seek for help within the community; there is no response to the feedback given on some investigations; the platform is abandoned once the investigation is completed. These issues emerged mostly because of the nQuire platform and the inquiry design which do not allow participants to conduct more than one investigation or collaborate with other members for their investigation. This leads to the possibility of people conducting lonely investigations and quitting when they are finished or they are not able to finish.

3 Conclusions

The findings of Inquiring Rock Hunters project suggest that in the next phase of the study there is a need to improve the sense of community within the Citizen Inquiry members. A more intensive exploration of communities of practice and online communities may help build a self-sustaining community with a steady or increasing number of members and interactions.

References

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