

E-01: Symposium: Advancing our Global Understanding of Citizen Science Engagement through Cross Programmatic Research - ABSTRACTS

Environmental identity and citizen science

Nina James, University of South Australia

How much do we know about the identity of the adult citizen scientist; about why people do or don't participate in citizen science; or about the relationship between projects and participants? It has been recognised that the degree and quality of volunteer participation has a direct influence on the outcomes and benefits of citizen science projects (Shirk et al. 2012). Many authors have called for research on participation in citizen science that goes beyond project evaluations (Bonney et al. 2009), in an effort to further understand the relationships between participant engagement, participant motivation, project design and participant impacts (Trumbull et al. 2000; Jordan et al. 2011; Nov et al. 2014) and to enable the development and implementation of more informed and targeted participation strategies. This Australian-based study utilises qualitative and quantitative data collected from practitioners and participants involved in a diverse range of citizen science projects, as well as from people who have not previously participated in citizen science. The research examines project design and recruitment; personal and social environmental identity of participants and non-participants; the relationship between people, communities and their local environment; motivation for and awareness of citizen science; and factors that inhibit or enable participation. This presentation summarises the implications of this research for participant-focused project design, and demonstrates the application of identity theory to the field of citizen science.

How Can We Maximize Learning in Citizen Science? A Mixed-Methods Study Examining the Influence of Different Project Activities on Learning Outcomes

Tina Phillips, Cornell Lab of Ornithology, Cornell University

The ways and extent to which participants are engaged in scientific activities is at the core of many informal learning contexts, including citizen science, but in general how people engage in self-directed projects is poorly understood (Phillips et al., in review). This mixed methods, collaborative research is described in two phases, both of which rely on cross-programmatic analyses. The first phase used qualitative interviews from participants across six different citizen science projects that span the co-created to contributory continuum and present a framework for describing the various dimensions of engagement. These dimensions include: effort, interest, activities, and social connectedness. The second phase of the research gathered quantitative data through an online survey that included these dimensions to further quantify engagement and examine its relationship to outcomes such as self-efficacy, science inquiry skills, and environmental stewardship. Survey results describe how engagement differs across and within the six projects and how duration and frequency of participation, diversity of activities, social connections, and interest and motivation influence individual learning. Results from this work will shed light on the complex dimensions of engagement in citizen science. In addition, we hope to provide practitioners with a better understanding of the kinds of activities that can best maximize intended learning outcomes. This work is based on a collaborative research grant with UC Davis and funded by the National Science Foundation.

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Short and Long-Term Engagement Among Volunteers in Human Computation Projects

Lesandro Ponciano, Federal University of Campina Grande, Brazil

Citizen science projects engage non-expert volunteers in performing tasks that are part of a scientific research. In projects based on human computation, scientists ask volunteers to perform tasks that require mainly their cognitive abilities, e.g. classifying galaxies from images. Drawing on concepts from human engagement and volunteering, we study volunteer engagement across projects focusing on short-term and long-term engagements. We characterise engagement in projects hosted on two platforms: Zooniverse and Societize. Our results show various engagement patterns across projects. Volunteers can be broadly divided into transients, those who execute tasks only one day and do not return, and regulars, those who return at least one more day. Regular volunteers also differ among themselves; they can be grouped into five distinct engagement profiles. Besides providing a deep understanding of the nature of volunteers' engagement, the results provide insights on how to encourage participation of volunteers in each engagement profile.

Why is education important for Citizen Science? Learning as a factor supporting long-term participation in Online Citizen Science Projects.

Laure Kloetzer, University of Neuchâtel, Switzerland

Although Citizen Science projects rely on a changing, constantly renewed pool of volunteers, keeping a core team of experienced and engaged volunteers is an important aspect of sustainable research. This core team of engaged volunteers often contributes to a big number of tasks, and in the same time, they play a key role in enhancing the social life of the community, as can be seen for example in distributed computing projects. However, both practitioners and scientists know how difficult it is to keep volunteers engaged in a Citizen Science project in the long run. The repetition of tasks might discourage best wills after a while. This contribution will explore learning as an important dimension which might support sustained participation of volunteers in online citizen science projects. It will also suggest some ways to support informal learning through the design of the project. This contribution is based on a 3-years research project (Citizen Cyberlab) recently conducted in Europe around learning and creativity in online citizen science.