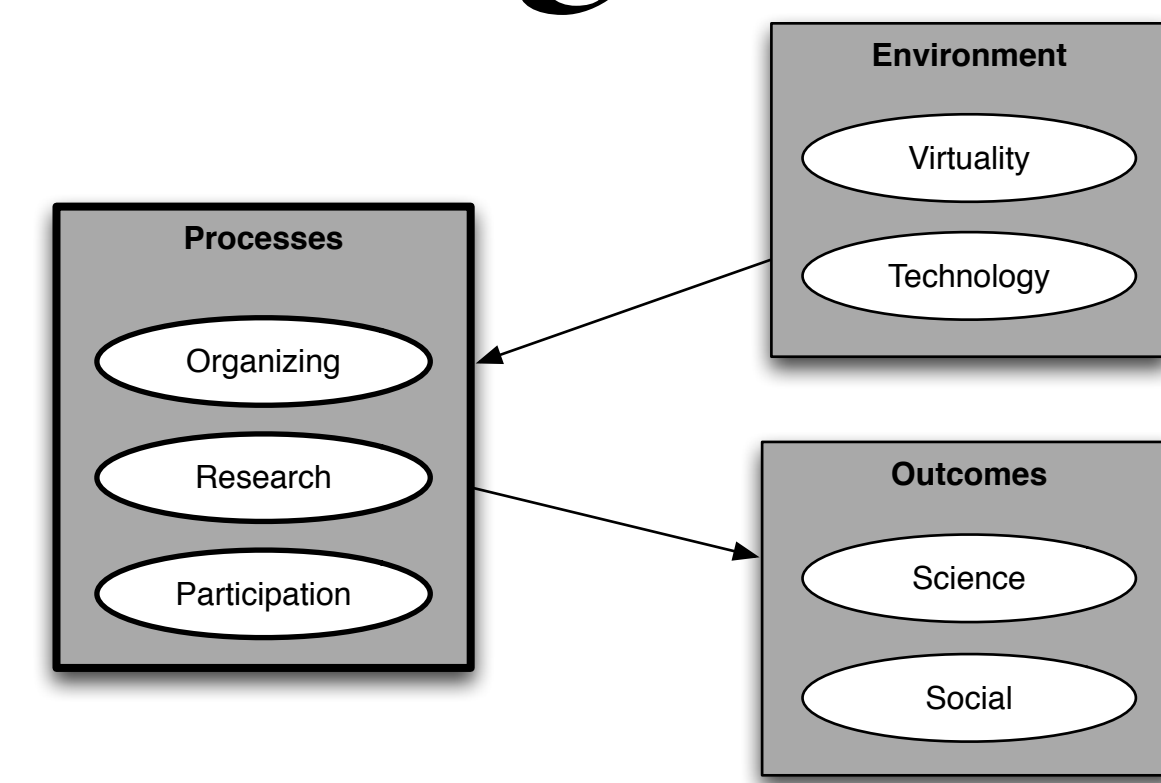


Technology and Work Practices in Citizen Science

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How do ICTs support public participation in scientific research?

Background



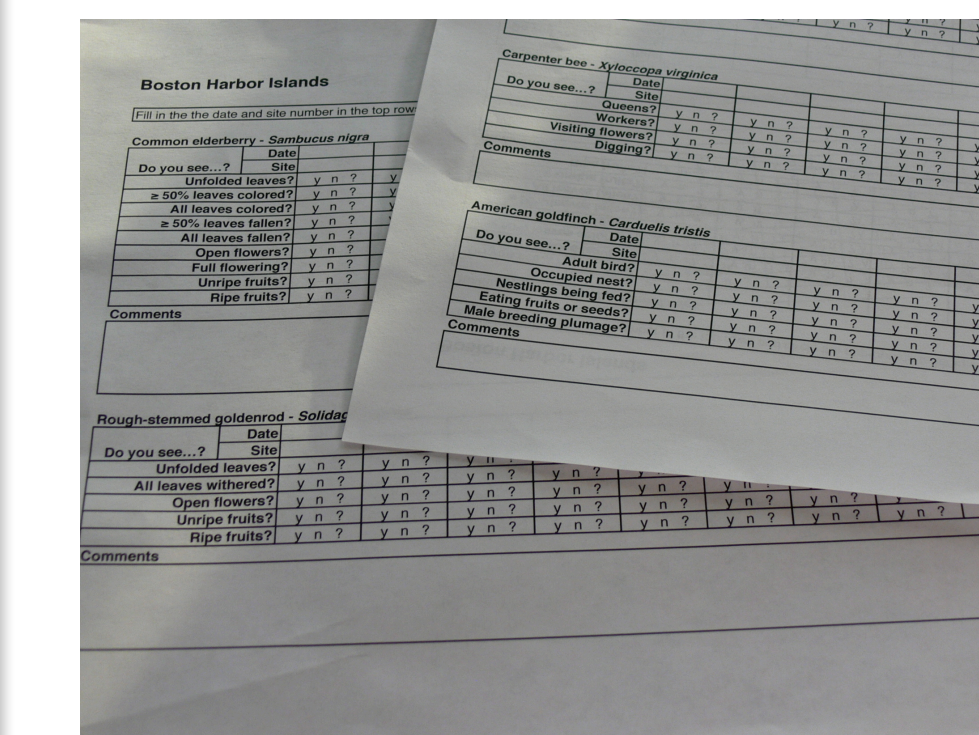
Citizen science is a form of collaboration involving public participation in scientific research.

Participation usually involves :

- contributing data according to an established protocol, or
- completing structured recognition or problem-solving tasks.

ICTs have enabled the growth of large-scale participatory projects for which volunteers are information workers and scientific research collaborators. ICT and task design are critically important to scientific outcomes.

Methods



Comparative case study of 3 citizen science projects:

- similar research focus and protocol design
- different project goals and organizational settings

Projects all involve independent volunteer monitoring of plants at fixed observation sites, with data contribution via online forms.

Inductive qualitative analysis of data from:

- 18 interviews with project leaders and staff,
- participant observation in planning meetings,
- 6 days on site at two locations, and
- over 120 documents

Gardens

Location: Gardens across North America

Project age: 3 years

Focus: Pollination

Organized by: Single academic PI

Goals: Scientific knowledge production



Workflow: Gardens described online; plants grown in gardens; observations recorded on paper; data reported online

ICT evolution: Started out almost entirely online, but still accepts paper forms

Other ICT uses: Supporting community development and communication

Parks

Location: US National Parks in the Northeast

Project age: 2 years

Focus: Plant and animal life cycles

Organized by: Partner network

Goals: Resource management & conservation



Workflow: Sites in parks selected, recorded, and marked; sites described online; observations recorded on paper; data reported online

ICT evolution: Transitioned to fully online reporting after one year pilot using paper forms

Other ICT uses: Data sharing and communication

Mountains

Location: Northeastern US mountain ranges

Project age: 11 years

Focus: Plant reproductive cycles

Organized by: 501(c)(3) nonprofit

Goals: Education & outreach



Workflow: Sites chosen or visited; observations recorded on paper; data reported online; paper forms submitted by mail

ICT evolution: Gradual transition from paper forms to fully online reporting over a period of several years

Other ICT uses: Identity management