

CREATE:ENERGY (CE) – Citizen Science

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STIFTUNG MERCATOR

Zukunft Umwelt Gesellschaft

1.

Poster V05: Citizen Science - Das Projekt CREATE:ENERGY bedient sich z.T. einem Citizen Science-Ansatz. Das geplante Projekt folgt dabei einer erweiterten Interpretation des **klassischen Citizen Science Ansatzes**. In der Diskussion um Citizen Science lassen sich insbesondere zwei Traditionen ausmachen. Die eine Tradition konzentriert sich stark auf den **Beitrag von Bürger:innen für die institutionalisierte Wissenschaft**. In diesem Sinne übernehmen dann Bürger:innen typischerweise Aufgaben beim Datensammeln und das in ganz unterschiedlichen Feldern, sei es dem Zählen von Spezies, dem astronomischen Beobachten oder der Auswertung von Archiven. Die andere Tradition fokussiert andersherum auf die **Bedeutung wissenschaftlichen Wissens für die Selbstermächtigung von Bürger:innen**. Dabei werden Bürger:innen zu Produzent:innen von Wissen, das sie insbesondere in politisch relevanten Auseinandersetzungen benötigen, etwa der Messung von Umweltschadstoffen auf eine unkonventionelle Weise, um die Verursachung durch ein Unternehmen nachzuweisen. **In diesem Projekt werden beide Traditionen gezielt verknüpft**, was wir als Kombination von **technologischer und demokratiepolitischer Citizen Science der Variante 2.0** beschreiben. Auf diese Weise gelingt es, entscheidungsrelevantes Wissen für eine bottom-up getriebene Energiewende zu bündeln und zur Wirkung zu bringen. Das Projekt hat das Ziel, über einen modernen demokratie-bezogenen Ansatz, bürgerschaftliches Wissen und Engagement in EE-Projekte umzusetzen, also die **Bürgerschaft zu aktivieren**.

2.

Citizen Science

Table 2.1 Selected definitions of citizen science	
1. Oxford English Dictionary (2014)	Scientific work undertaken by members of the general public often in collaboration with or under the direction of professional scientists and scientific institutions
2. Wikipedia (2005)	A project (or ongoing program of work) which aims to make scientific discoveries or verify scientific hypotheses
3. Wikipedia (2019)	Scientific research conducted, in whole or in part, by amateur (or nonprofessional) scientists
4. National Geographic Encyclopedia	Citizen science is the practice of public participation and collaboration in scientific research to increase scientific knowledge. Through citizen science, people share and contribute to data monitoring and collection programs
5. Australian Citizen Science Association	Citizen science involves public participation and collaboration in scientific research with the aim to increase scientific knowledge. It's a great way to harness community skills and passion to help the capacity of science to answer our questions about the world and how it works
6. European Citizen Science Association	Citizen Science – the participation of the general public in scientific processes, an open and inclusive approach, for example, by supporting and being part of the exploration, shaping, and development of the different aspects of the citizen science movement, in better understanding, and use for the benefit of decision-making
7. European Citizen Science Association	Citizen science projects actively involve citizens in scientific endeavor that generates new knowledge or understanding
8. Citizen Science Association (US)	Citizen science is the involvement of the public in scientific research, whether community-driven research or global investigations
9. Group on Earth Observations Citizen Science Working Group	Citizen science encompasses a range of methods, open to all, that encourage and support the contributions of the public to the advancement of scientific and engineering research and monitoring in ways that may include co-identifying research questions; co-designing/conducting investigations; co-collecting/building/analyzing low-cost sensors; co-collecting and analyzing data; co-developing data applications; and collaboratively solving complex problems
10. United Nations Environmental Programme (UNEP) (2019)	Citizen science entails the engagement of volunteers in science and research. Volunteers are commonly involved in data collection but can also be involved in initiating questions, designing projects, disseminating results, and interpreting data

Table 2.1 (continued)	
11. UNESCO (2013)	The participation of a range of non-scientific stakeholders in the scientific process. At its most inclusive and most innovative, citizen science involves citizens volunteers as partners in the entire scientific process, including determining research themes, questions, methodologies, and means of dissemination
12. US Crowdsourcing and Citizen Science Act (15 USC 3733) (2016)	The term citizen science means a form of open collaboration in which individuals or organizations participate in the scientific process in various ways, including (A) enabling the formulation of research questions; (B) creating and refining project design; (C) conducting scientific experiments; (D) collecting and analyzing data; (E) interpreting the results of data; (F) developing technologies and applications; (G) making discoveries; and (H) solving problems
13. Citizenscience.gov (US)	In citizen science, the public participates voluntarily in the scientific process, addressing real-world problems in ways that may include formulating research questions, conducting scientific experiments, collecting and analyzing data, interpreting results, making new discoveries, developing technologies and applications, and solving complex problems
14. US National Institutes of Health	Citizen science efforts are driven by community concerns. These community-led projects may involve a partnership with an academic or research institution, where both parties work together to collect and share data. The goal is to address a community concern through collaborative research and to translate the research findings into public health that benefits the community
15. US Environmental Protection Agency (EPA) (2016)	Citizen science is a form of open collaboration in which individuals or organizations participate voluntarily in the scientific process in various ways, including collecting and analyzing data. Citizen science provides a way for members of the public to participate and support EPA programs
16. The US National Aeronautics and Space Administration (NASA)	Citizen science is defined as a form of open collaboration in which individuals or organizations participate voluntarily in the scientific process in various ways. This policy defines citizen science projects as science projects that rely on volunteers
17. US National Oceanic and Atmospheric Administration (NOAA)	Citizen science is defined as a form of open collaboration where members of the public participate in the scientific process to address real-world problems in ways that include identifying research questions, collecting and analyzing data, interpreting results, making new discoveries, developing technologies and applications, and solving complex problems

Table 2.1 (continued)	
18. The US National Academies of Sciences (2018)	The involvement of the broader public in the research enterprise
19. EC Environment (2013)	Citizen science encompasses many different ways in which citizens are involved in science. This may include many participation schemes in which citizens use smartphone apps to submit wildlife monitoring data as well as smaller-scale activities
20. Scienceintz (2014)	Citizen science refers to the general public engagement in scientific research activities when citizens actively contribute to science either with their professional effort or surrounding knowledge or with their tools and resources
21. EU (2016)	Inclusion of non-institutional participants, in other words the general public, in the scientific process
22. EU (2017)	Citizen science – where citizens become providers and users of data. This will evidence and give new meaning to the policy of open access to publications and data; this evidence should enable citizens and citizen groups to participate in evidence-based policy and decision-making
23. EU (2019)	More and more Europeans hold higher education degrees. Enabled by digitalization and knowledge, citizens are today consumers capable of shaping the innovation process and bypassing restrictive practices of established science and governments. This goes well beyond citizen science and covers the entire research and innovation process
24. OSPF (2018)	Broadly defined, citizen science is "scientific work undertaken by members of the general public, often in collaboration with or under the direction of professional scientists and scientific institutions". Citizen science is an already very diverse practice, encompassing various forms, efforts, and aims of collaboration between academic and citizen researchers and a broad range of scientific disciplines. Civic participation in research can range from short-term data collection to intensive, long-term involvement in the research process, from technical contribution to genuine research, and from collaboration to co-creation of knowledge. Yet, there is still a need to define and establish citizen science as a genuine, open research approach
25. G7 Science Academies (2019)	Two categories of citizen science. The first one, which is predominant, is participatory research done by citizens who have not necessarily received training in scientific research. It was this activity that has been historically named "citizen science". A second and more recent category of citizen science involves scientifically trained individuals working in isolation, or in virtual communities, to develop

Table 2.1 (continued)	
26. OECD (2017)	projects outside established controlled environments (universities, government, or industry research systems)
27. Science Europe (2016)	At the heart of the scientific process, it can be more narrowly understood as people, who are not professional scientists, taking part in research, i.e. co-producing scientific knowledge. This involves collaborations between the public and researchers/scientists but also requires governments and funding agencies
28. LERU (2016)	Citizen science, the active involvement of non-professional scientists in research. The boundaries of what can rightly be termed citizen science are debatable, but there is broad consensus that projects should involve voluntary and active public engagement with research
29. RAND Corporation (2017)	Citizen science takes open science activities beyond the purview of professional scientific circles by exploring the involvement of citizens in scientific research and the implications of these activities on and within society
30. Green Paper Citizen Science Strategy 2020 for Germany (2016)	Citizen science describes the process of generating knowledge through various participatory formats. Participation can range from the short-term collection of data to the intensive use of leisure time to derive deeper insights into a research topic together with scientists and/or other volunteers, to ask questions, and to get involved in some or all phases of the research process
31. UK Parliamentary Office of Science and Technology (POST) (2014)	Environmental citizen science – the involvement of volunteers in environmental monitoring
32. UK Environmental Observation Framework (2012)	Citizen science, broadly defined as the involvement of volunteers in research
33. Noma (2019)	Citizen science is any process where scientists and the public process scientific data or observations. Citizen science usually implies volunteers work together to collect or unlock new resources for research, experimentation, and analysis by opening the process to everyone
34. Environmental Science & Technology Journal (2007)	According to Wikipedia, the term citizen science refers to a program in which a network of volunteers, many of whom have little or no specific scientific training, perform or manage research-related tasks, such as observation, measurement, or computation

For the sources of these definitions, please see the information on Griffith (Haklay et al. 2019)

3.

Citizen Science 2.0

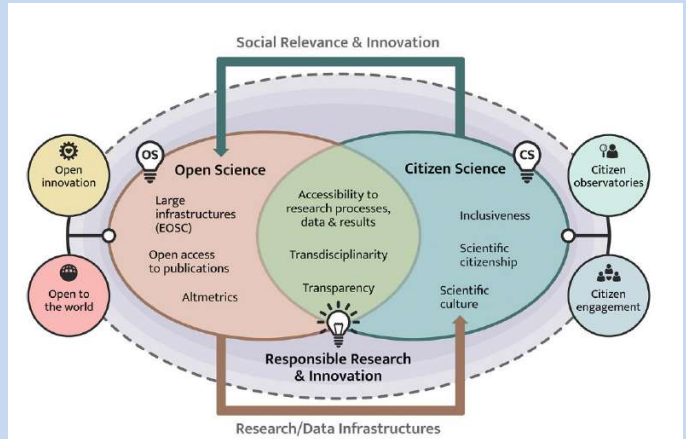


Fig. 18.2 The relationship between citizen science and open science. (Based on Vohland and Göbel (2017), modified)

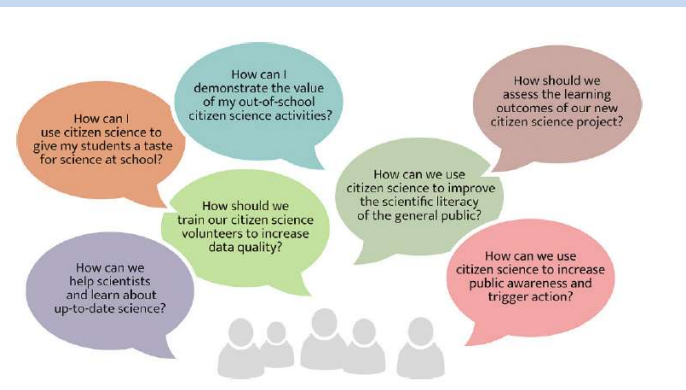


Fig. 15.1 Frequent questions regarding learning in citizen science

Literaturverzeichnis: Vohland, Katrin (2021): *The Science of Citizen Science*: European commission 2020 Cost.

4.

Übergang vom "normalen" Citizen Science hin zu einem angestrebten erweiterten Konzept ...

Zugänglichkeit zu den Forschungsprozessen
Transdisziplinarität verstehen und umsetzen
Transparenz ermöglichen
Inklusivität erfahren
Wissenschaftliche Bürgerschaft und Kultur erahnen ...
Das Leisten/Herstellen von Prozessen, die Wissen schaffen
Feldtheorie und hybride Wissensregime

Die **Befähigung** der BürgerInnen zur eigenständigen Entwicklung und Realisierung sowie den Betrieb von Bürgerenergieanlagen, ist Ziel dieses Prozesses!

CE_Klausur 09/2024

SPREEAKADEMIE

LAUSITZER PERSPEKTIVEN

Brandenburgische Technische Universität Cottbus-Senftenberg

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100 Prozent erneuerbare stiftung

everyone energy

Verbundprojekt CREATE:ENERGY (CE)

RIFS

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RWTH AACHEN UNIVERSITY

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