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What are the differences between Citizen Science, Participatory Science and Participatory Research?



self - Resources Center - Communities of Practice -
Publication date: Monday 30 September 2024

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The terms **Citizen Science**, **Participatory Science**, and **Participatory Research** are often used interchangeably, but they refer to quite different approaches to collaboration between scientists and non-scientists. Here are the main distinctions:

- **Citizen Science:** Citizens are mainly involved in data collection, or in subcontracting data processing and analysis (photos, etc.) when AI cannot yet do this work. They are not involved in the design of the project, the experiments or the interpretation of the results.
- **Participatory science:** Involvement of citizens or social actors at different levels of the project, from data collection to project design, including carrying out experiments.
- **Participatory research:** Deeper or even total collaboration, where citizens or stakeholders participate in all stages of the research process.

[Also check out the training on the design and facilitation of a Participatory Science project](#)
[<https://training-for-development.com/-Sciences-Participatives-Step-1-?lang=en>]

These approaches share a common desire to include non-scientists in the production of knowledge, but vary according to the degree of involvement and the final objective of the research.

Citizen sciences

Citizen science refers specifically to raising the awareness of non-scientific citizens through scientific research projects that are open to them. The term emphasises the role of citizens as key players in collecting data, monitoring ecosystems, observing scientific phenomena and analysing results when this is long and tedious. Citizens make a direct contribution to the production of knowledge, often outside traditional academic frameworks.

Key features:

- Participation is often geared towards data collection and observation (e.g. bird counts, star tracking, pollution measurements).
- Projects are often initiated by scientists, but citizens play a massive role in collecting or processing data.
- Examples include bird counting projects and pollinator insect monitoring projects.

Participatory sciences

Participatory science encompasses a broader spectrum of collaboration between researchers and the general public. The term places the emphasis on active participation through practice, with a prior build-up of skills, which can take place at different levels: from data collection to interpretation, to the actual design of the scientific project, including carrying out the experiments. Participatory science generally includes citizens as well as other social players (associations, local authorities, companies).

Key features:

- Participation can take place at various stages of the project: definition of the research questions, data collection, analysis of data beyond simple data analysis, dissemination of results.
- Projects are often interdisciplinary and may involve citizens, NGOs, public institutions, etc.
- Examples: Air quality projects where citizens help to measure local pollution while working with scientists to interpret the results.

Participatory research

Participatory research refers to a framework in which citizens, or other stakeholders, are actively and collaboratively involved in **all stages** of the research process, including the definition of the research question, design, methodology, collection of data or scientific experiments, analysis, and dissemination of results. This model is often used in **social justice** or **action research** contexts, where the results are co-created by the researchers and the communities concerned, and where the research has a social transformation objective - Community Based Participatory Research. However, it has also developed in the form of Impact Based Participatory Research since its origins as a Science Club in 1992, and then in 2005 on Scientific Stays (school trips and scientific discovery classes, solidarity science holidays, holiday camps, etc.) in research projects where non-scientists are involved as researchers in fundamental or applied research subjects that do not directly concern them.

Key features:

- Citizens are not just data collectors, but co-designers of the project, influencing the methodology and objectives.
- Citizens are involved at absolutely every stage of the research, regardless of age (children, teenagers, adults).
- The aim is often to solve practical, societal or local problems.
- Examples: Action research projects where local communities participate in defining solutions to improve their living environment (e.g. management of natural resources, food autonomy and greening of buildings in disadvantaged neighbourhoods, increasing biodiversity in an island lagoon) or Fundamental research projects (detection of exoplanets, dinosaur research, fundamental physics, chemistry and water treatment, etc.).

Potential future developments

Many potential developments are now beginning to appear on the horizon, due to the growing increase in research conducted in these three formats and the exponential number of publications resulting from these citizen formats and signed by these citizens themselves, authors of articles published in peer-reviewed journals.

While the operational work consists of improving the operating methods, the pedagogical progression, and the adequacy of the material resources enabling such participative research projects, new ambitions are now becoming realistic. These include, for example, developing the field of **Citizen Research** in the same way as **Public Research** and **Private Research**, in both **Fundamental Research** and **Applied Research**.

A Training on the Design and Facilitation of Participatory Science Projects



What are the differences between Citizen Science, Participatory Science and Participatory Research?

In collaboration between Objectif Sciences International and Step and Go, this training is specifically dedicated to the techniques for creating and designing a Participatory Science project for Sustainable Development, as well as the techniques for leading and facilitating a Participatory Science project using a Project-Based Learning approach:

<https://training-for-development.com/-Sciences-Participatives-Step-1-?lang=en>

[<https://training-for-development.com/-Sciences-Participatives-Step-1-?lang=fr>]

Choose the 3-day residential version or the 4-day non-residential option, in the Alps, Paris, Nice, New York... or request a date specifically dedicated for your team.