National Co-ordinating Centre for Public Engagement

How to…
…engage the public as researchers

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Introduction

Engaging members of the public as researchers is a highly participatory way of engaging people with your research. It isn't the same as demonstrations and activities (such as at science fairs) because you care about the results that people provide, or surveys where people provide you with information (e.g. when they are subjects to your research). It is when members of the public undertake research, acting as research assistants. They follow protocols, test hypotheses, report results and may even interpret results. This is also known as (hypothesis-driven) citizen science or crowdsourcing research.

Getting started

- What do you want to find out? Is it feasible to involve the public?
- What is your research question? You must be clear what question you will be answering, because this will shape the entire project.
- It is unfeasible to engage members of the public as researchers if they need specialised facilities (using hydrogen peroxide or owning a binocular microscope will exclude almost all people) or you need very precise measurements. Be realistic about what is achievable.
- Getting members of the public to be research assistants works best when the project is time-limited or composed of short tasks (e.g. on the internet).
- Most people will be put off if you demand even a moderate level of commitment. Leave people wanting more and they are more likely to take part again in the future and (most importantly) they will be motivated to send you their results.
- Just like any research project you need to think through the ethics of your research. How will you involve the public? Who will have access to the data? How will they be credited in your work?
- Finally, will it work? Scientifically, a 'zero' is often valuable to your research. However, for a volunteer a 'zero' can feel like a failure and de-motivating. You need to maximise the likelihood of something interesting happening.

Why are you considering using the public as researchers?

There are several reasons why you may want to use the public as researchers. For example:

- It might be difficult or impossible to automate the task (e.g. pattern recognition, deciphering hand writing, making observations in the field)
- Engaging members of the public gives you greater resources, e.g. time or geographic spread. I have found that people are excited by undertaking 'real' research – which then serves to boost the success of the public engagement aspect of the project

Tips for successful science

Have a clear question: By having a clear question you will know what needs to be achieved (you could even use power analysis to predict the required sample sizes for your study). It may not always be necessary to communicate the detail of the hypothesis to people in advance (for example saying you expect an increase in a variable over time may create bias in reported results) but people need to be sold why it is valuable.

Ground truth the data: The key question to ask yourself is: would this data pass peer review? Do all you can to ensure the answer is 'yes'. It is important to have appropriate questions, very simple methodology and 'ground truth' the data. Ground truthing the data can take place:

- In advance of the study: e.g. participants undertake a 'quiz' to quantify the public's accuracy and reporting biases
- During the study: e.g. run a sample yourself (to test whether your results differ from those from members of the public) or, if possible, assess a subset of the results as they come in (requesting a subset of people send you pictures, samples etc.)
- After the study: question some participants to (tactfully) check for potential biases

Know how you will use the results: This is real research, so treat the results as such and publish them in peer-reviewed journals or use them as pilot data for larger projects and grant proposals. This provides the ultimate win-win for academics: public engagement and research! At the very least provide a summary for publishing on your website and in appropriate magazines etc.

Getting people involved

I have found that it is essential for a project engaging members of the public in research to have:

A 'hook': the initial line that makes people and the media interested

A question: "we want you to find out if...". This gives members of the public (and you) clarity about the project.

A narrative: the bigger story of which people are a part. How will this tiny piece of research fit into the bigger picture that will change the world? This can be discovered on a project website, during a radio interview, or in an article you have written.

Who is your audience?

Even if you are aiming for hundreds of thousands to be involved, the chances of this happening are slim (unless you can get it plugged on national television). Research involving specifically targeted groups of people is likely to be more successful and more rewarding for you. You can also build on success and expand as time goes on. Specific audiences include:

- **Enthusiasts:** write an article for a specialist club inviting people to take part in the research. A couple of dozen enthusiasts may provide you with valuable data beyond what you alone could collect and engage them with research.

- **School children:** visit schools and run lessons. This can be time consuming, but you could enthuse volunteers to visit schools on your behalf. If you make sure that the task is age-appropriate and data are ground truthed, schools can provide high return rates even for longer-term projects and good quality data.
- **Local public or families:** enlist people in local shopping centres, children's centres, local events etc. (permission to do this should be arranged in advance). Be creative about targeting people who will provide valuable data.

How do you advertise your project?

Depending on your audience the route of advertising can be obvious, but do think creatively about how to engage with people. I would recommend having a website for your project where people can easily go to find out more.
Advertising through the media or the internet could be effective, but it is risky (the media might not take up your story, or networking might not be effective). I have found local media (especially local radio) to be receptive of projects involving members of the public as researchers.
You can find out how to market your public engagement here.

Writing the methods

With a clear question, the methods will be obvious to you, but making them 'fool-proof' is very difficult. There is clearly a balance to be struck between making the methods too succinct and too comprehensive. However, don't assume something is obvious. On a website, you could provide methods summary and then link to the detailed methods. Diagrams can be valuable. Thoroughly test drafts of your methods with people who do not know about your project. Write methods in 'plain English'.
Make sure that everyone in your target audience can accurately record what you want them to, and include options such as 'other' or 'don't know' so that people are not forced to record something inaccurately. Include an example recording sheet in the methods so people know in advance what they should be recording.

Gathering results

Websites provide the perfect way of gathering records with little effort from you. Websites are also hugely valuable in that they can provide feedback to the participants (making them feel valued), and this can easily be done in real time. However, for projects engaging a small number of people, it might be easiest for people to email you results.
You could design your own website for collecting data or you could use one of the web survey providers, which allow you to write your own questions and graphically summarise the results. Either way, keep it simple.

Giving feedback

Providing feedback in some way is important to show participants that their results are valued. This is easy through websites where you can write newsletters and newsflashes and where you can provide summaries of results that are updated in real time. In due course you should provide a summary of your findings for those people who took part. Bulk emailing people who are taking part in the project and have opted in to emails can help them feel valued. You could also engage people with interpretation; asking them if they think the results support your hypothesis. All of this provides longevity to your engagement with people.

What it can be used for

Engaging members of the public as researchers is suitable for anything that taps into the public's imagination. It is valuable when research can be undertaken with little prior experience or equipment but where it is limited by personnel – so members of the public can provide essential resources for the research. There are good examples of using members of the public as researchers in astronomy and ecology (both of which have committed amateur followings), and in psychology (although here members of the public are subjects rather than researchers themselves).

Things to bear in mind

- Actively work with the media (local radio and newspapers are often receptive). Use your institution's press office and work with them, but do not solely rely on them – a phone call to a local radio station is often effective. The rate of uptake is low (in my experience only 1 in 1000 people that heard the story visited my project's website) and the effective life of a story is just a couple of days
- Timing of visits to schools is critical. Be aware of exams, Christmas holidays etc. I have found that uptake by personal with schools is high (>50%), but uptake is very low via all other forms of advertising to schools. Schools will require at least a few weeks' notice of visits
- Making people register before entering data reduces the likelihood of junk data being maliciously entered (and allows you to filter it out) and lets people opt in to email communication about the project. However, be aware of issues surrounding data protection. Alternatively give people randomly-generated registration codes that they use to enter results (e.g. class-specific codes when you are visiting schools)
- If you send circular emails to those who have opted in to receive them, keep them brief, enthusiastic but business-like and infrequent. Be clear about the frequency of the emails ("this is the second of five emails we will send about...", "this is your annual update about..."). Thoroughly check draft emails for spelling mistakes or potential mis-communication

- For larger projects have a clear brand. Including affiliations to an institution makes your project more 'official' but may alienate some in your target audience
- If you are recording your results via a website, have a 'comments' box, and ask a simple open-ended question, e.g. "what did you learn?". This provides opportunity to assess feedback and well as monitor use (website stats)
- If your project is large then set up a project email address and check it regularly

Cost and time requirements

Example costs:

£800-£3000 for creation and management of a website with database for recording results (more for complex websites), or £200 for one year's subscription to an online survey tool.
You might provide equipment for distribution (e.g. to school classes) depending on your research and your audience.

Example timings:

This all depends on the scale of your project. Resources should be started to be designed several months in advance of the start date of the research.

Resources

Members of the public have been involved in research projects for many years and in many different ways. This involvement can occur during any or all of the stages, from setting the research agenda, undertaking research, interpreting research, disseminating the results of research, to getting findings put into practice. Research that involves the public is often more reliable, more relevant to the public once it is complete and, therefore, more likely to be used. The following guides address the principles and practicalities of user involvement, offering valuable checklists for getting started.

Case studies

CONKER TREE SCIENCE.

My project is one example of a medium-sized project.

BUMBLEBEE NEST SURVEY

LAB UK

EVOLUTION MEGALAB

BIOBLITZ

GALAXY ZOO

A selection of other projects.

Guides and articles

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NCCPE'S GUIDE TO ONLINE CONSULTATION

Includes information about available survey tools etc.

INVOLVING THE PUBLIC IN NHS, PUBLIC HEALTH, AND SOCIAL CARE RESEARCH: BRIEFING NOTES FOR RESEARCHERS

This booklet aims to give researchers working within the NHS, social care and public health fields some guidelines on how best to involve the public in their work. It will benefit researchers who are new to or just starting to involve the public. There are some excellent examples of good practice to address the most frequently asked questions, and some **checklists** about the practicalities of involvement, particularly in relation to committees and resources.

GETTING STARTED WITH INVOLVING THE PUBLIC IN PUBLIC HEALTH RESEARCH: AN INFORMATION SHEET FOR RESEARCHERS

Published by INVOLVE, this 2-page introductory paper summarises the issues of involving the public in public health research. It addresses the questions Who to involve? and Where to find them? A more detailed paper 'Involving the public in NHS, public health and social care research: Briefing notes for researchers' Hanley et al (2003) INVOLVE, sets out the principles and practicalities of involving the public in research. The booklet is designed for researchers with no previous experience of involving members of the public, and people who use services, as active partners in research. It is a well-referenced introductory document on involvement.

GOOD PRACTICE GUIDE: USER INVOLVEMENT

This 4-page guide is based on a series of good practice examples identified from the evaluation of the Big Lottery Fund's Research Grants programme. It offers examples about what has worked for other research projects and is designed to help third sector organisations and their research partners with engaging users in the planning and delivery of research.

SCIENCE SHOP TOOLBOX

The Science Shop is an example of a community-based research organisation formed from a partnership, usually, between universities and their local communities. It is demand-driven and bottom-up, participatory research that is initiated in response to societal issues and concerns. **Living Knowledge**, the International Science Shop Network, has developed this online training resource to support the development of innovative practice in this area. The Toolbox includes FAQs, Training programmes, E-modules ("Getting started" and "How to organise a community-based research project"), a handbook-style Scenario Workshop Toolkit and a database of organisations involved in this field.