Who Participates in Digital Action? Six Vignettes for Designers of Digital Action Events

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Abstract

The Covid-19 pandemic forced millions of people worldwide to switch from in-office working to remote working, using video conferencing tools such as Zoom, and resulted in an increase in the use of the Internet and digital tools. The HEIDI Project studied this phenomenon and held a series of roundtables, panels and other events such as webinars to better understand what digital skills people from different stakeholder groups felt they lacked. The HEIDI Project aims to upskill HEI staff in "Digital Action" (citizen science, makeathons and hackathons) and to work more closely with communities to boost bottom-up collaborative events of this type. Through these events, in particular the roundtables, a series of six "vignettes" or personas have been created: imaginary character descriptions of HEI staff, community group members and voluntary group members who have participated, or would be interested in participating, in Digital Action (DA). These vignettes are to be used as a design tool for anyone interested in creating a DA event, to provide ideas for utilising skills, understanding people's goals, and providing what support is most often required by different stakeholder groups.

Introduction

Covid-19 affected billions of people worldwide. Much research has been published to present and discuss evidence on the economic, social and health impacts of this pandemic. Scholars from academia and policy-making bodies have also paid attention to publishing research insights on the digitalisation impacts of the pandemic. Here evidence demonstrates that the rate of increased Internet usage during the first year of the pandemic was 10.2% , which is the largest increase in a decade (ITU, 2021), and 6% between 2021 and 2022. Experts claim that, especially in developed countries, the impact of the digital surge during the pandemic has been unprecedented (UN, 2021). Not only did the "digital" play such a catalytic role in terms of our ability to continue our lives as normally as possible during the pandemic, but also companies and organisations in all sectors had to improve their technological infrastructure and the provided services and products, which, as a consequence, speeded up digital transformation by several years (McKinsey, 2020).

Due to governmental restrictions on movement, most people had to digitally connect to work, learn, socialise and access information and other basic services. As engagement with digital participation and digital activism increased in comparison to the the pre-pandemic context, many people used online spaces to connect with like-minded people, and identify and find solutions to societal challenges that arose during the pandemic. As Michelle Greenwald (CEO of Catalyzing Innovation) puts it, "engineers often state that constraints foster creativity, and the adage "necessity is the mother of invention" was never more true than after COVID-19 hit" (Forbes, 2021). Various hackathons and makeathons, although popular before the pandemic, were launched to tackle COVID-19 related challenges (e.g., #EuvsVirus; #BuildForCOVID-19; #HackQuarantine' #HackCorona). Citizen science activities also

increased during the pandemic; e.g., Zooniverse projects received 200,000 (instead of 25,000) daily classifications ([Vox, 2021](#)).

Many forms of digital participation activities - which most of the time require or even rely on offline/in-person processes and mechanisms - had to completely reform. This transformation came with its many significant challenges; e.g., from re-applying for institutional ethical clearance to finding ways to motivate people and bring them together online. The struggles and the new opportunities that the situation has created (e.g., needs and requirements of various stakeholders) were less the topic of a discussion in the broader digital participation context; although as we later discovered in project HEIDI, many of the lessons learned helped to actually improve Digital Action processes massively for the unforeseeable future.

We also saw that, despite this impact, top-down Digital Action was on the rise during the pandemic, but we observed fewer examples of bottom-up Digital Action (i.e. digital participation where participants identified the problem themselves and subsequently designed and implemented Digital Action to identify solutions). It is emphasised across many academic and policy discourses, that narratives of change, which incorporate the voices and the needs of those who drive these processes and who will be directly impacted from them, are essential and very much needed in terms of achieving societal transformation. In HEIDI we believed that reflecting on what we've learned about Digital Action during the pandemic and improving awareness, may be the only way to enable key actors, such as Higher Education Institutions (HEIs), to be more resilient, agile and better embrace bottom-up Digital Action in the future to achieve social change.

Background to Digital Action and the HEIDI Project

The HEIDI Project, "Digital Actions at HEIs as a catalyst for social change in the COVID-19 crisis", aims to use the lessons learned from the pandemic and the switch to digital communication, to upskill HEI staff and students in Digital Action (DA), and to enable HEIs to effectively embrace bottom-up DA with community and voluntary groups.

There are three components to DA:
- citizen science, in which citizens participate in science as data collectors or analysts, funders, or observers
- the maker movement, in which an increasing number of people are involved in the collaborative creation of artefacts and new products
- hackathons, in this case civic hackers, in which organised groups of people use information technology to tackle some civic problem or to build up a database

All these forms of DA encompass public participation in activities that may be run in collaboration with HEIs.

The HEIDI Project is especially interested in DA events, for example makeathons or hackathons. These may be run by an HEI but with members of the public invited, for example, or they may be run by and for HEI students. A goal may be to gather data, or to provide resources to a charity, or to create some new product (such as PPE during the COVID-19 crisis).

The HEIDI Project studied three groups of stakeholders in DA:

- HEI staff
- Community groups
- Voluntary organisations

We mapped the characteristics of these stakeholder groups, such as their opinions about DA, problems they had encountered, their goals and their needs and requirements for participation and organisation. Common problems reported included a lack of digital literacy and access to technology and resources, a lack of communication and collaboration within HEIs, a lack of institutional support, and digital inequalities and language barriers.

Three of HEIDI's organisations (University College London, University of Paris and University of Malta) then each held a roundtable with several members of each of these groups, making a total of 9 roundtables. Roundtable participants were also given pre- and post-event questionnaires, which asked them about their background, prior experience in DA, digital competence, specific lack of experience or opportunities to do DA, and for their consent for their answers to be used in our research. The roundtables themselves included questions again on prior experience and digital skills, also institutional support, specific needs and requirements of different groups, and how HEIs could support organisers and participants in DA.

Key findings from the roundtables and their development into "Vignettes" or "Personas"

Roundtable participants had a wide range of DA experience, which was part of the HEIDI project's studies and which was asked about in detail. Most roundtable guests had participated only in short DA sessions and not for the entire process (e.g. from planning and organising to dissemination of results or products). Those who had no experience attributed this to a lack of time and skills.

Common motivations for participation included:

- Address a local issue
- Influence a policy
- Support a cause

- Widen participation
- Upskill their peers
- Improve public understanding of what can be achieved by bottom-up work with technology
- (More rarely) Learn about a subject

Common challenges of participating or organising included:
- A lack of skill, time or access (e.g. not having access to equipment)
- A lack of support from their HEI or other hoped-for provider (for example, being given no information)
- Communication - e.g. unclear instructions, language, barriers and a lack of digital communication skills, or vital aspects of communication (such as body language) being lost through online communication

Roundtable groups were asked what specific actions HEIs could take, and they suggested:
- HEIs actively support DA and fund it as a research model
- Use of work placements (e.g. HEI students in community groups, or community group members at HEIs) to improve skills
- The presence of educated facilitators at community groups
- Shared public access to resources, learning skills and effective design
- Continuous (not one-off) funding and communication
- Improving visibility of DA and DA collaboration within HEIs
- DA targeted funding, including making DA an official paid staff role, within HEIs

The HEIDI Project's University College London team created six "vignettes" or personas, which are descriptions of imaginary people who nonetheless reflect the wide range of experiences and opinions gathered from the roundtables. In line with the three stakeholder groups targeted, six personas in total have been drawn up to comprise:
- 2 "community members"
- 2 "voluntary group members"
- 2 "HEI staff"

Some roundtable participants had particular stories to tell, such as too much time being allocated to publicising an event rather than planning its content, or some relevant digital ethics issue that is important to them, which we feel may be useful or inspiring for organisers of DA to consider. Therefore, a selection of these stories have been retold as opinions of a persona.

Research Integrity and Anonymity

These "personas" are imaginary and not based on real people. Experiences and opinions written about are taken mostly from the 9 HEIDI roundtables held in the UK, France and Malta described above, with also a few details from early roundtables and from other HEIDI events such as an ethics panel held by UCL. These opinions and experiences were gathered from statements made during these

events, questionnaires, and notes written on our Padlets. However, in order to preserve the anonymity of our roundtable participants, no list of opinions and experiences ascribed to one vignette are linked to any one particular person, roundtable, or stakeholder group. Each is taken from a range of different voices heard, and each takes material from multiple HEIDI events. All participants of the HEIDI roundtables were made aware that their notes and remarks would be part of HEIDI research, and consented to video recordings.

Each persona also contains some fictional details. Biographical details in particular, such as name, family, hobbies, career, ethnicity, individual interests, etc. are all entirely fictional. A few small details are borrowed from individuals personally known to the authors or publicly available stories (one story used in a vignette was told to a UCL staff member by a representative of a relevant charity on Twitter), but again none entirely replicate any one real person, group or organisation. Participation in particular citizen science projects is, again, fictional, though as with the experiences listed by our roundtable and webinar participants, the vignettes display a range of experiences, such as with some personas being very involved in many citizen science projects and some not at all.

Where possible, variety has been included, such as a junior and a senior HEI staff member, as well as a range of ages, jobs, skills etc. The locations of the imaginary individuals are the UK, France and Malta, in alignment with the HEIDI project.

The pictures of people's faces are taken from public stock image sites such as Pexels. The structure of the vignettes (profile picture, sliders to show "personality", "motivation", etc), was taken from a publicly available source.

The Vignettes as a Design Tool

The next section document contains six "vignettes" - imaginary personas - of individuals who might be interested in participating in Digital Action (DA) - namely, public participation in some activity (citizen science, makeathons or hackathons) which is aimed to catalyse a change in society. It details their levels of experience in these activities, their opinions about them and how they can benefit society, their goals and frustrations, and some small biographical details to bring out the character of the individual. It also aims to emphasise the very wide range of DA experience (from none to a great deal) and different backgrounds of likely DA organisers and event attendees.

These vignettes are to be used as a design tool for anyone creating or running a Digital Action event such as a hackathon. They are intended to help the event leader plan for what information and training will need to be given, how to tailor the event to participants' likely goals, and to indicate where some extra time or thought might need to be put in where there is a knowledge gap or a problem such as a lack of communication. It will allow Digital Action events to be adapted to probable skills and hopes of

participants - while allowing for a broad range of possibilities. For example, an event could cater to someone who is interested in assisting older people in particular, or in creating a specific new product, by focusing on these areas; or, if someone feels that they lack a particular skill, the event could involve some training to develop this skill.

The vignettes are:
1. "Lucy", community member
2. "Hannah", community member
3. "Vianne", HEI staff member
4. "Zeinab", HEI staff member
5. "Shailen", voluntary group member
6. "Roxane", voluntary group member

References

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UN News: "Despite COVID-19 connectivity boost, world's poorest left far behind ." (2021) Available at: https://news.un.org/en/story/2021/12/1106862

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Michelle Greenwood/Forbes, "How Covid-19 Changed MIT's Global Hackathon Program And Others For The Better, Forever." (2021) Available at: https://www.forbes.com/sites/michellegreenwald/2021/09/01/how-covid-19-changed-mits-global-hackathon-program-and-others-for-the-better-forever/?sh=5f1518735f69

Sigal Samuel/Vox, " Citizen science is booming during the pandemic." (2021) Available at: https://www.vox.com/future-perfect/22177247/citizen-science-amateur-backyard-birding-astronomy-covid-pandemic

Lucy (Community member)

"I think everyone should be responsible for taking care of the environment so we can create a better future"
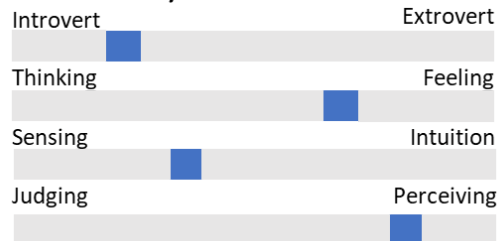
Age: 45
Work: Science Teacher
Family: Married with 3 children
Location: Reading, England
Character: Enthusiastic, calm, patient, family orientated, environmentally aware

Personality

Introvert	Extrovert
Thinking	Feeling
Sensing	Intuition
Judging	Perceiving

Goals

- Actively get involved in local concerns
- Reduce pollution
- Increase awareness of environmental problems
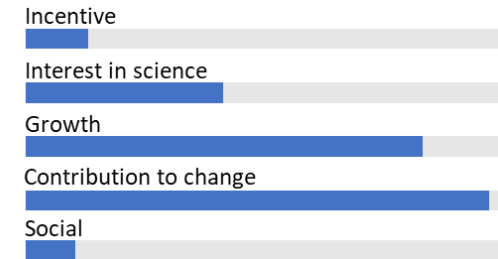- Protect endangered flora and fauna

Frustrations

- Instruction manuals
- Poorly designed technologies
- People who litter
- Politicians who ignore children and youths in environmental decision-making

Bio

Lucy is a primary school teacher with responsibility for the science curriculum. She has volunteered in many citizen science projects throughout her life and is eager to share her knowledge with others. She particularly enjoys teaching others about environmental matters and scientific research. Although a substantial amount of her time is dedicated to her family, she likes to explore her local neighbourhood in order to support environmental initiatives. Lucy does not user her mobile phone extensively and does not have a strong social media presence. She has some experience with using maps in citizen science projects but is hoping to learn more about geographic information systems.
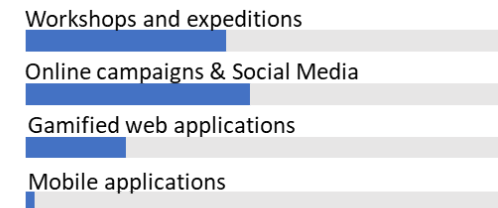
Motivation

Incentive	
Interest in science	
Growth	
Contribution to change	
Social	

Citizen Science Websites and Projects

Preferred Channels

Workshops and expeditions	
Online campaigns & Social Media	
Gamified web applications	
Mobile applications	

Hannah (Community member)

"I would really like to support conservation efforts in my spare time, even small actions can make a big difference"
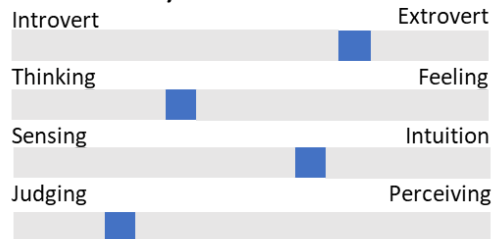
Age: 26
Work: Zoologist
Family: Single
Location: London, England
Character: Smart, environmentally aware, tech savvy

Personality

Introvert ———————————— Extrovert

Thinking ———————————— Feeling

Sensing ———————————— Intuition

Judging ———————————— Perceiving

Goals

- Support environmental initiatives
- Identify threatened species
- Advance scientific research
- Develop new solutions for environmental problems

Frustrations

- Limited time for involvement in environmental matters
- Technological glitches and complicated interfaces
- People not recycling or composting
- High costs and expensive products

Bio

Hannah is a zoologist because she has always loved animals ever since she was a little child. Her work is quite demanding so she normally does not have much time to support environmental initiatives. Although Hannah is not currently involved in any citizen science projects, she is eager to learn how she could make a positive impact on the environment. She believes that conservation projects do not necessarily have to be large-scale in order to be effective, they can also implemented in daily life. Hannah is highly experienced with using a variety of technological interfaces and has a strong social media presence. She frequently uses Google Maps for finding nearby locations but does not have advanced knowledge or expertise in geographic information systems.
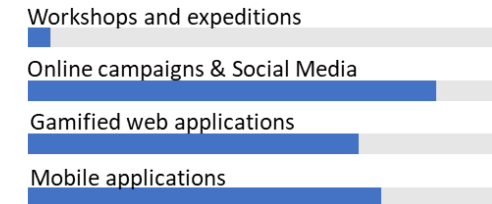
Motivation

Incentive

Interest in science

Growth

Contribution to change

Social
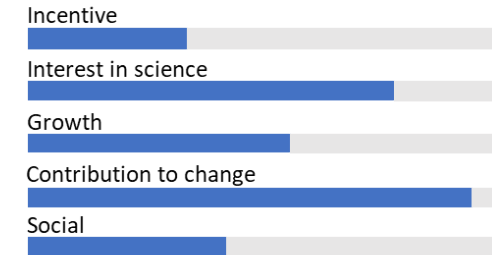
Citizen Science Websites and Projects

Currently does not use citizen science websites and projects

Preferred Channels

Workshops and expeditions

Online campaigns & Social Media

Gamified web applications

Mobile applications

Vianne (HEI staff)

Photo credit:
Ekaterina
Bolovstova /
Pexels

*"What we as researchers learn, we
should share with everybody. And there
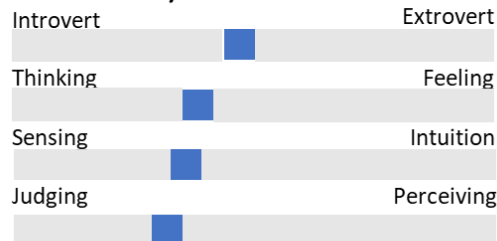are more and more ways to do that."*

Age: 23
Work: Early career researcher (science)
Family: Single. Lives with parents during university holidays
Location: Paris
Character: Outgoing, energetic, tech savvy,

Personality

Introvert		Extrovert

Thinking		Feeling

Sensing		Intuition

Judging		Perceiving

Goals
- Increase outreach and public engagement with science
- Get academia involved in local problems
- Increase digital literacy, especially among disadvantaged groups
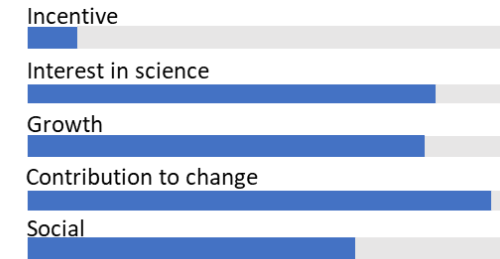- Get citizen science into schools

Frustrations
- Lack of funding for outreach and DA
- Lack of support from HEI to do DA, e.g. allocate time and resources
- Accessibility issues with digital technologies
- "Climate despair" and people not taking climate action

Bio
Vianne is an ECR in France, studying public participation and stakeholder engagement in environmental issues. She has been involved in citizen science and hackathons for four years. She is very keen to get disadvantaged groups directly involved in citizen science, and has organised hackathons in her spare time with a mixture of HEI students and members of the public, but has found that these are usually attended by confident, white, wealthy people who have plenty of time, and she wants to lower the barriers. Vianne is very fluent with smartphone apps and various digital technologies but finds it challenging to teach them to people who are not used to them and distrust them. She is giving up a great deal of her free time to her outreach activities, and feels that she has less time for friends and family and that her HEI could be doing more to support her.
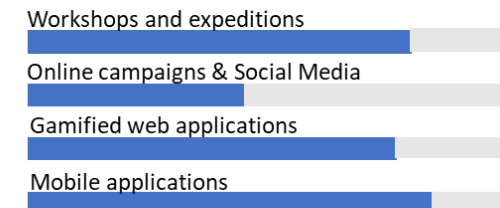
Motivation

Incentive

Interest in science

Growth

Contribution to change

Social

Citizen Science Websites and Projects

Preferred Channels

Workshops and expeditions

Online campaigns & Social Media

Gamified web applications

Mobile applications

Zeinab (HEI Staff)

"There are new tools – and often very influential proponents of them – appearing seemingly every day. Yet we as a society, and similarly as an HEI, have no common education system to take charge of them."
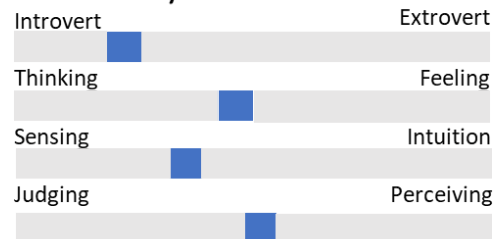
Age: 45
Work: Senior social scientists researcher
Family: Married, 2 teenage children
Location: Malta
Character: Introvert, smart, tech savvy, altruistic, ambitious

Personality

Introvert ▬▬▬▬ Extrovert

Thinking ▬▬▬▬ Feeling

Sensing ▬▬▬▬ Intuition

Judging ▬▬▬▬ Perceiving

Goals

- Increase outreach and public engagement with science
- HEI to treat DA and citizen science as research model and fund accordingly
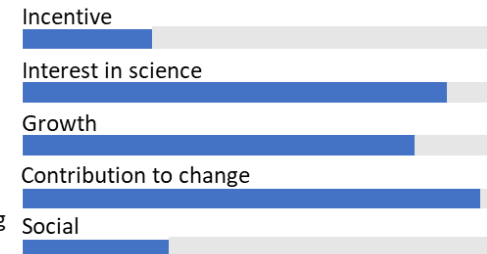- Increase digital literacy especially of disadvantaged groups
- Empower women

Frustrations

- Rapidly changing and often inaccessible technologies
- Lack of communication and common purpose in HEIs regarding outreach and DA
- Lack of understanding about different stakeholder needs, e.g. not doing events during school run
- Inflexibility of grants make it hard to be responsive to community preferences

Bio

Zeinab is a senior researcher in social science. Her research interests include computer science, changes in digital technology and its uses, different stakeholders' relationships with digital technology, and the use of digital technologies to disseminate information and political viewpoints. Recently, with colleagues, she has begun a citizen science project about online safety. She struggles to find time to communicate with the citizen scientists and to be responsive to their needs and interests as well as fulfil her research duties. She would like to teach more digital skills to enable more people to participate in citizen science and DA. She is a fan of Mar Hicks, who researched how women pioneered computing until the 1970s/80s when they were systematically excluded.
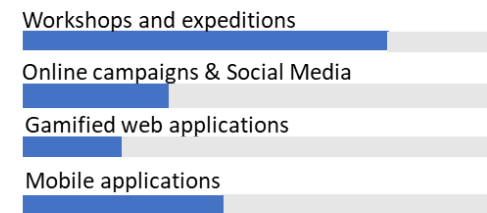
Motivation

Incentive ▬▬
Interest in science ▬▬▬▬▬
Growth ▬▬▬▬
Contribution to change ▬▬▬▬▬▬
Social ▬▬

Citizen Science Websites and Projects

Preferred Channels

Workshops and expeditions ▬▬▬▬▬
Online campaigns & Social Media ▬▬▬
Gamified web applications ▬▬
Mobile applications ▬▬▬

Shailen (Voluntary group member)

Photo credit: Pixaby

"So much has to be done online these days. Imagine if it could all be made simpler for everybody!"
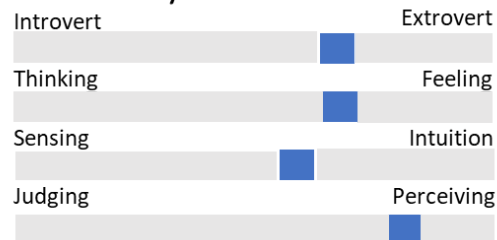
Age: 64
Work: Retired, former radiologist in NHS
Family: Married, 3 grown children
Location: Birmingham
Character: Outgoing, family oriented, patient

Personality

Introvert — Extrovert

Thinking — Feeling

Sensing — Intuition

Judging — Perceiving

Goals

- Teach older people digital skills
- Enable older people to get assistance they need
- Combat loneliness and isolation among older people
- Make powerful institutions (e.g. Job Centres, NHS) more accountable and flexible in how they use digital technology
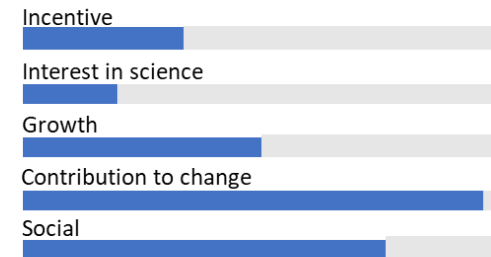
Frustrations

- Inaccessibility of technologies to older people, e.g. QR codes and difficult online forms
- Lack of understanding by policy makers and job centre staff about older people's difficulties
- Language barriers
- Impoverished, difficult living conditions of older people he works with
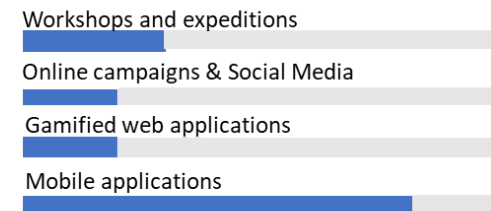
Bio

Shailen is a retired NHS worker who now does occasional part-time agency work and spends extensive time at a small NGO supporting older people in his community. He has noticed a sharp increase in pensioners or older people being unable to claim benefits or fight unfair benefit sanctions because they lack the digital skills, and feels he cannot help them all. Shailen uses his phone a lot and loves technology but is aware that it is a barrier for many others. He is very concerned that his aging parents and their peers may face discrimination or disadvantages not just by ethnicity but by being unable to fill out online forms etc. He would like more educated people e.g. students and policy makers to be more aware of other groups' needs. He has heard of DA but not tried it, and wonders if it could help study older citizens' needs and how institutions could work with them better.

Motivation

Incentive

Interest in science

Growth

Contribution to change

Social

Citizen Science Websites and Projects

Preferred Channels

Workshops and expeditions

Online campaigns & Social Media

Gamified web applications

Mobile applications

Roxane (Voluntary group member)

"We've got the technology to connect everyone and work together – I think we can all be responsible for each other during a crisis, everyone's got something to teach."
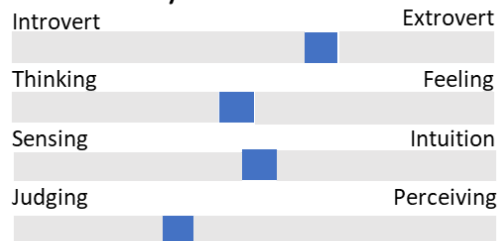
Age: 51
Work: Small clothes shop owner
Family: Married, 1 adult daughter
Location: Southampton
Character: Sociable, family-oriented, generous, business enthusiast

Personality

Introvert ▬▬▬▬▬▬▬ Extrovert

Thinking ▬▬▬▬▬▬▬ Feeling

Sensing ▬▬▬▬▬▬▬ Intuition

Judging ▬▬▬▬▬▬▬ Perceiving

Goals
- Enable everyone to learn to sew PPE
- Distribute PPE where needed, e.g. to nurses or specific hospital wards
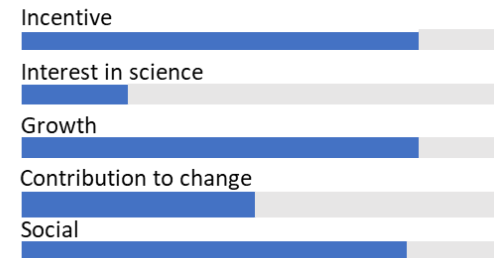- Learn to make good videos to teach people how to sew

Frustrations
- Makerspaces being used for profit by some and common good by others
- Lack of coherent plans to make or distribute PPE
- Difficulty using digital technology
- Lack of "basic life skills" (e.g. cooking, sewing, accounting, etc) being taught to young people

Bio
Roxane has always been interested in clothes and sewing after her mother taught her to make dresses as a child. When COVID-19 hit her daughter was a newly qualified nurse and did not have adequate PPE. Roxane began to make masks and had several interested friends. They held online sessions where she tried to show people how to make masks on camera, and she quickly learned she needed better digital tools and that many people struggled with Zoom as well as sewing. She attended an HEI-organised makeathon but was frustrated because, as a host confided to her, they had spent all their energy on recruitment to fulfil grant requirements, so they had little time left for preparing educational materials, skills development or responsiveness to unanticipated community needs, so not much PPE got made and there was no long-term follow-up.

Motivation

Incentive ▬▬▬▬▬▬

Interest in science ▬▬▬

Growth ▬▬▬▬▬▬

Contribution to change ▬▬▬▬

Social ▬▬▬▬▬▬

Citizen Science Websites and Projects

scistarter.com
People-powered science.

Preferred Channels

Workshops and expeditions ▬▬▬▬▬

Online campaigns & Social Media ▬

Gamified web applications ▬▬

Mobile applications ▬▬▬