EngineeringUK

Evaluations with young people

Evaluation shared practice guide

Introduction

This guide presents an overview of existing information and guidance related to conducting evaluations with young people. It covers some ethical and practical considerations, and sets out general good practice when planning, designing and conducting evaluations of STEM outreach with young people. This document is not intended as a comprehensive or prescriptive resource on the topic.

Please note, there are important legal considerations for conducting evaluations with young people, which will be determined partly by the design and scope of your research. It is important you consult with your organisation's Data Protection Officer and/or seek the necessary legal advice to ensure your approach is GDPR compliant.

Young people

There are many ways to conduct evaluations of STEM outreach activities. It is important to adapt your approach to ensure its suitability for your target participants – in this case, young people.

A **young person** is defined as an individual under the age of 18. Each young person will have a different lived experience, level of cognitive ability, focus and attention span, as well as ability to comprehend and contribute to research. There will also be differences between young people in terms of their socio-demographic characteristics – for example, their gender, ethnicity, sexual orientation and socio-economic background. You may wish to consider such differences as you design and deliver your evaluation.

Ethical principles

Ensuring that your evaluation conforms to high ethical standards is an important feature of good research practice, especially when the focus is on young people. Ethical principles should be considered from the outset, and need to be embedded into every stage of the research process. These principles include, but are not limited to:

- **Do no harm**. Assess any potential risks for a young person participating in your evaluation and take relevant mitigating actions.
- **Respect participants, their rights and dignity**, regardless of their background or demographic characteristics – for example, their gender, race, ethnicity, ability, sexual orientation, gender identity, religion, education level, and socioeconomic status.
- **Consider power dynamics.** Young people may feel pressured to participate depending on who is recruiting participants and how. You should explain clearly that there will be no negative consequences for young people who decide not to take part.
- Ensure young people fully understand that **they can withdraw their participation** at any point in the evaluation, if they choose to do so. Check at different stages that they are still happy to continue.
- Consider ways to **ensure anonymity, confidentiality and safeguarding** of the young people participating in your evaluation. There are legal considerations to take into account when conducting research with young people; you should check with your organisation's Data Protection Officer or seek legal advice to ensure you are taking appropriate steps to safeguard the participants in your evaluation.

- **Recognise how incentives may affect the voluntary participation** of young people. Giving financial incentives directly to young people may not be appropriate.
- **Conduct inclusive research.** Adapt your research instruments to the different needs and abilities of young people taking part in your evaluation.

Setting evaluation objectives and research questions

As a first step, you should define the **objectives** of your STEM outreach evaluation: what do you want to understand? What is the purpose of your evaluation? Evaluation objectives could include:

- Understanding if and how young people benefit from taking part in your STEM outreach activity;
- Determining whether your STEM outreach activity is inclusive and beneficial for all groups of young people; or
- Generating learnings to improve your STEM outreach activity.

Developing **research questions** enables you to clarify precisely what you are aiming to understand about young people's experiences of your STEM outreach activity. These questions also guide the methodology of your research and the data required. As such, you should develop your research questions in the initial stages of planning and designing your evaluation. These questions can be quite varied in scope. For example, your research questions could be:

- Do young people like taking part in our robotics competition?
- Does taking part in our STEM club increase young people's interest in studying STEM subjects?

When developing your research questions, you may want to involve different stakeholders. These could be both internal (e.g. someone from your policy team) or external (e.g. project partner or even young people themselves) to your organisation. Their involvement at this stage can help identify the questions to meet your evaluation objectives.

Selecting an appropriate evaluation method

The objectives and research questions will help you to select the most appropriate research method for your evaluation. There are a variety of **methods** that you can choose from, and these fall broadly into two categories:

- **Quantitative** research is helpful for answering questions on 'how many' or 'how much'. For example, through this approach you could measure how many young people liked taking part in your STEM outreach activity or programme. Quantitative methods are most appropriate when you have a good idea of the possible range of responses a young person could give to the questions you ask them.
- **Qualitative** research can give you the opportunity to gain a deeper understanding of the 'why' and the 'how'. For example, through this approach you could examine why young people liked or did not like taking part in your STEM outreach activity or programme. Because qualitative approaches are more open-ended, they are most appropriate when you want to give young people the freedom to generate their own responses.

Depending on your approach, you will be using different ways to collect your data: surveys are the most common instrument used for quantitative research, whereas interviews or

focus group discussions are most often employed for qualitative research. Choosing which approach you use also depends on what is feasible and practical given the nature of your particular STEM outreach activity or programme. For example, interviews are usually conducted with a smaller number of participants. As such, this method is likely to be more appropriate for evaluating smaller-scale activities.

Consider **testing your research instruments** (e.g. surveys, interview guides) before collecting data. This process will help you make sure that the language you use is easy to understand and young people interpret the instructions, questions and answer options as intended. You should aim to test your survey or interview schedule with young people from similar backgrounds or communities that will be taking part in your STEM activity.

Another important element of your research is the **sample**: who will participate in your evaluation? To answer that question, it is important to think through how the evaluation results will be used and the resources you have available. Depending on your objective, you might need to consider whether your sample should be representative of the wider population of young people, or whether you will need to make comparisons between different groups of young people.

- A larger sample may allow you to conduct analyses between different groups of young people. However, it may not be feasible due to time or financial limitations.
- A smaller sample may be more feasible and allow you to collect in-depth data, but you might not be able to capture important differences between groups of young people.

Assess your resources

Decisions about whether you conduct the evaluation yourself or seek external assistance will be determined by your available resources. It might be helpful for you to consider whether:

- You have sufficient budget and time;
- You have the necessary skills, knowledge and expertise;
- You have experience in conducting research with young people.

If these are limited, you may want to consider collaborating with external agencies or experts who can provide support or even conduct the evaluation on your behalf.

Develop an evaluation plan

Like any project, having a clear plan for your evaluation is important to ensure that things run smoothly and to minimise the risk of encountering problems. Your evaluation plan should be designed to fulfil your objectives; it should set out how you will answer your research questions using appropriate data collection and methods of analysis.

Your plan should take account of the resources at your disposal, identify all the specific activities required for the evaluation, ensure that roles and responsibilities for the team are assigned and communicated, and set clear milestones, targets and timelines. It should also detail how you will use the findings of your evaluation to improve your STEM outreach activity going forward. You may want to:

- **Think through the most appropriate way to collect and analyse your data.** For example, if your objective is to understand whether taking part in your robotics competition has improved young people's understanding of coding, you could adopt a pre/post design and survey young people on their coding skills before and

immediately after taking part. On the other hand, if your objective is simply to find out whether young people enjoy your STEM outreach activity, you could opt to only collect their feedback after they take part. Another example is if your objective is to understand differences between boys' and girls' experience of your activity, you could ask for their gender identity in your feedback questionnaire, allowing you to analyse the differences between these sub-groups.

- **Be aware of recall bias**. As time goes on, young people may not remember events as accurately or completely, and other subsequent experiences can also influence their memories. To minimise this potential source of bias, aim to conduct your survey or interviews with participants as closely as possible to when the STEM outreach activity took place.
- **Plan the logistics for your data collection and analysis**. This includes organising when and how the fieldwork will take place as well as who will collect the data. For example, research staff could conduct fieldwork at your STEM outreach activity in person, or they could collect responses online or over the phone (see next section for practical considerations). You should also assess how the data will be prepared for analysis. For example, consider who will be responsible for data entry, when this would take place (as it can be a timely process), and how you will 'clean' the data (e.g. amending, replacing or removing irrelevant or duplicate records).
- **Think about how you will use and disseminate the findings** of your evaluation. There are various audiences you may need to consider, for example, when reporting on your research. These can include colleagues internal to your organisation, funders, partners, other STEM outreach providers, key experts or government officials. It is also good practice to share with young people the findings of the evaluation they took part in.
- **Consider how you will take forward learnings** both from conducting your evaluation (e.g. to improve your research and overcome any limitations of your approach) as well as delivering your STEM outreach activity (e.g. to improve on reach, accessibility or quality of content and delivery).

Practical considerations for data collection

When collecting data, you should consider how you will access participants for your evaluation as well as when and how young people will be able to take part. Practical considerations include:

- Who are the gate-keepers you need to involve (e.g. schools, teachers, parents, etc.)? How will you get them on board with your evaluation (e.g. providing further information and sharing findings to gain buy-in, offering incentives, etc.)?
- When would young people be able to take part (e.g. consider school holidays or religious days)? Is it convenient for young people to take part during school hours or after school?
- What resources would a young person need to participate (e.g. access to a laptop, internet connection, phone)? What measures can you put in place for young people who do not have access to these resources?
- How can you make sure you do not to bias the results if you are more likely to gain responses from particular groups of young people (e.g. participants from higher socioeconomic backgrounds with greater access to digital resources)?
- If conducting interviews or focus group discussions, are the venues or online platforms you are using easily accessible for all young people? Are these spaces safe for young people?

There are also further considerations you may want to take into account to ensure that the data collected is as accurate as possible. For example, we know that young people are particularly vulnerable to social desirability bias – i.e. the tendency of respondents to give answers that they perceive to be more socially acceptable, rather than answers that are reflective of their true thoughts or feelings. It is possible to anticipate the conditions in which young people's responses might be influenced or circumstances under which they might feel pressured to responding in a certain way, and it is possible to try to remove those influences. For example:

- Be clear that there are no right or wrong answers to the evaluation questions and communicate to them that the purpose of the research is to understand their opinions and experience.
- Pose questions in a neutral way and avoid expressing your own opinion.
- Avoid watching over young people as they respond to your survey and, when appropriate, ensure that they are fully aware their responses will be anonymous.

Young people as beneficiaries

Remember, young people are not only 'research subjects' (i.e. data generators), they are also likely to be the main beneficiaries of your STEM outreach evaluation. It is therefore important to explain to them the value of their participation and how it will benefit them directly and/or future participants of your STEM outreach activity.

With this in mind, it is good practice to provide the necessary information for a young person to make an informed decision about whether or not to take part in your evaluation. At a minimum, the information shared with participants prior to them taking part should address the following questions:

- What is the purpose of the evaluation?
- Who is conducting the evaluation?
- Who can participate in the evaluation?
- What does participation involve?
- How long will it take to take part?
- How will the responses provided be used?
- Who can they contact for more information?

It is also important to let young people know that they do not have to take part in your evaluation if they do not want to, and it should be clear that there will be no negative consequences if they choose not to.

Use of language

Using age appropriate language in your evaluation is important to ensure young people understand what you are asking of them. Consider the suggestions below throughout your evaluation – not only for the language you use in your research instruments, but also when recruiting participants and communicating with young people in general about your evaluation.

- Use clear language and, if necessary, use visuals (e.g. images and colour)
- Translate supporting documents in other languages, where appropriate
- Avoid using acronyms and jargon

Before using the acronym STEM, check if the young people you are engaging with know what it means. If not, make sure to write it out in full or explain what it stands for (i.e. science,

technology, engineering, and mathematics). Depending on the aim and scope of your evaluation, you could consider specifying what school subjects are related to STEM. For example, in the description we use in our Engineering Brand Monitor (EBM) survey we listed the following subjects: core and additional science; physics; chemistry; biology; design and technology; maths; engineering.

Instead of using the term 'STEM outreach activity', consider referring to examples of, or being specific about, types of activities relating to science, maths, engineering or technology. For example, these could include careers fairs, competitions, events, workshops, school trips or STEM clubs. Alternatively, if young people are familiar with what your STEM outreach activity or programme is called, you could refer to it by name.

As you conduct your evaluation, you could actively encourage young people to ask questions and to let you know if there is something they do not understand.

Thanking young people for their participation

Young people who take part in your STEM outreach evaluation are taking time out of their day to share their information, views and experience with you. Consider ways you can thank them for their involvement and contributions. There are different ways you can do this, including:

- Offering inclusive, appropriate incentives such as prize draws, vouchers, or refreshments;
- Creating and offering opportunities for young people to learn new skills;
- Sharing the evaluation findings directly with young people;
- Explaining to young people what happens after the evaluation and how their contribution has been helpful for future STEM outreach activities.