

1 WTCCB Public Engagement Evaluation Framework

1.1 Introduction

This document has been prepared by public engagement manager Sarah Keer-Keer, in consultation with science communicator Maria Fanourgiaki, Senior investigator Patrick Heun, Jenesys evaluation consultants and Chloe Sheppard of Wellcome Trust.

1.2 Overall goal, aims and outcomes

We are using the Theory of Change framework to map our vision, aims and outcomes.

Overall Goals – overall aim or focus

Aims - precursors that need to be in place to achieve the overall goal

Outcomes – changes or effect that occur as a results of outputs. Short-term, e.g. people learn something new, or long-term, e.g. decide to study in future.

Outputs – changes and services that will be delivered. E.g. events, training courses, activities.

From 2011 to 2015, inputs and outputs in public engagement have been well documented and reported. For the future, we have focused on the overall goal, aims and outcomes in our WTCCB Theory of Change model diagram (see Fig. 1). This diagram was informed by the Centre's Public Engagement Strategy.

Fig 1. WTCCB Theory of Change Evaluation Framework



1.3 Our audiences

WTCCB defines its primary target public audiences in order of priority as:

- Families
- Adults (18+) and teenagers
- Audiences not yet engaged with science, hard to reach audiences and disadvantaged groups
- Local community and groups

This document focuses on these primary audiences. However it is worth noting that WTCCB has defined the following secondary audiences:

- Internet users
- Policy makers
- People already interested in science
- Academics / interdisciplinary

The WTCCB will also engage with the education sector, particularly locally, offering them appropriate opportunities. Education audiences we will engage with include:

- High Schools & Primary Schools, prioritising Primary 5/6/7 (approx. age 8-12) and S4/5/6 (approx. age 15-18)

- Schools local to our building, especially those not usually visited by University staff and those in LEAPS 1 designation to redress equity (The LEAPS scheme aims to promote social inclusion and equality of opportunity, LEAPS 1 schools have been designated ‘inhibited by economic, social or cultural factors’)
- Educators (e.g. teachers).

1.4 Formative and summative evaluation

When our public engagement projects are being developed, formative evaluation is most appropriate, and the use of more open questions to the participants. Once developed, and projects are up and running, summative evaluation, with more closed questions and ratings that allow us to analyse the data, are most appropriate. Both these approaches can be met by adapting a standard template and keeping these principals in mind.

1.5 Aims of evaluation

The key aims of the evaluation are to:

- Provide information and analysis which aids the delivery of WTCCB’s public engagement programme
- Develop a body of evidence which will enable WTCCB to:
 - Assess its impact against stated public engagement aims
 - Identify any unanticipated impacts
 - Create strong links and a reputation for excellence within the wider public engagement community

2 Evaluation plan

The following matrix outlines a number of indicators, guiding questions and methods to find out how and to what extent intended outcomes have been met. The indicators and guiding questions can provide a useful framework for analysing feedback and writing evaluation reports.

Outcome	Indicators	Guiding Questions	Methodology
1&2 Target audiences, including disadvantaged audiences and local groups attend and enjoy events and activities	<p>Motivations: Individuals describe specific reasons for attending events and activities</p> <p>Experiences: Individuals rate events and activities positively</p> <p>Individuals are surprised by events and activities and/or describe their experiences of events and activities as creative</p> <p>Behaviour: Individuals want to participate in similar events or activities in the future</p>	<ul style="list-style-type: none"> • What is the profile of the audiences taking part? Including location, science background, and demographics. • How did they find out about events? • What are their motivations for attending? • How do they rate events and activities? • What reactions do audiences have to events and activities? • Will audiences attend similar events or activities in the future? 	<p>Hard-copy questionnaires handed out at drop-in events</p> <p>Comment book or Graffiti wall</p> <p>Online survey link publicised at drop-in events or emailed to audiences at booked events</p>
3. Audiences understand the work of WTCCB and its researchers	<p>Understanding: Individuals learn something new about WTCCB</p> <p>Individuals gain deeper understanding of the research of WTCCB</p>	<ul style="list-style-type: none"> • Are there clear, concise, messages that promote WTCCB research? • How and how much do events and activities raise awareness of WTCCB research? • How and how much do events and activities support interaction between audiences and scientists? • How and how much do events and activities challenge existing attitudes? • What are the barriers to changing attitudes? 	<p>Hard-copy questionnaires handed out at drop-in events</p> <p>Online survey link publicised at drop-in events or emailed to audiences at booked events</p>
4. Audiences express views about cell biology and WTCCB research	<p>Behaviour: Individuals feel able to contribute to discussions and ask questions during events</p> <p>Individuals express thoughts about cell biology and WTCCB research. Individuals intend to discuss these topics with others or intend to find out more.</p> <p>Attitudes: Individuals feel their thoughts about cell biology and WTCCB research are listened to.</p>	<ul style="list-style-type: none"> • Do events and activities provide opportunities for audiences to express their views? • How confident do audiences feel about expressing their views about topics? • Will audiences continue to explore or think about topics and issues raised? • Do audiences intend to attend related events? 	<p>Hard-copy questionnaires</p> <p>Graffiti wall of comments and opinions</p> <p>Online survey link publicised at drop-in events or emailed to audiences</p>

<p>5. WTCCB research and researchers creates positive impressions in young people</p>	<p>Understanding: Young people learn about researchers and their work</p> <p>Attitudes: Young people feel positively about researchers and their work</p>	<ul style="list-style-type: none"> • How do young people feel about researchers and the WTCCB? • What do young people think of researchers during events and activities? • How if at all do events affect young people's views about researchers and their work? 	<p>Hard-copy questionnaires at school events</p> <p>Hard copy questionnaires completed by young people at public events</p>
<p>6. Young people are motivated and inspired to consider STEM further study / careers</p>	<p>Attitudes and values: Young people feel that STEM careers or further study could be for them</p> <p>Young people are inspired by WTCCB activities and researchers</p> <p>Behaviour: Young people are more motivated to consider STEM careers or further study</p>	<ul style="list-style-type: none"> • How do young people feel about STEM careers or further study? • How if at all do interactions with researchers affect young people's views about STEM careers or further study? • How if at all do events affect young people's views about STEM careers or study? 	<p>Hard-copy questionnaires at school events</p> <p>Hard copy questionnaires completed by young people at public events</p>
<p>7. Increased public engagement skills and understanding among WTCCB researchers</p>	<p>Skills: Individuals gain different skills (e.g. communication skills)</p> <p>Knowledge development: Increase in the number of individual taking part</p> <p>Understanding: Staff feel they have the appropriate knowledge to get involved</p> <p>Staff gain deeper understanding of public engagement and its relation to their research</p>	<ul style="list-style-type: none"> • What are the profiles of researchers who participate in events and activities? Including role, subject, career level • What have their individual experiences been? • How successful are the events and activities? • How useful are the events and activities? • What impact do the activities and events have on their work and professional development? 	<p>E-survey emailed to participating researchers after events and activities</p>
<p>8. WTCCB researchers participate in a supported programme of public engagement activities</p>	<p>Motivations: Individuals want to take part in public engagement and recognise its benefits</p> <p>Experiences: Individuals rate public engagement experiences positively and describe reasons for those viewpoints</p> <p>Behaviour: Individuals want to participate in public engagement in the future</p>	<ul style="list-style-type: none"> • How do researchers find out about public engagement opportunities? • Why do they take part in public engagement? • What barriers prevent them from taking part? • What support if any do they receive ? • How do they rate their public engagement experiences and how could these experiences be improved? 	<p>Hard copy questionnaire for participating researchers after events and activities</p> <p>E-survey to all researchers about attitudes to public engagement</p> <p>One to one interview with researchers.</p>

3 Evaluation Tools

3.1 Audience questions

We will adopt a standard set of questionnaires to assess opinions and impacts about activities. There are several versions, for the general public, for school pupils aged under 12, for school pupils aged 12 and over and one for teachers. Additional specific questions can be added to the general questionnaire in order to assess particular aspects of events or activities.

The drop-in nature of many of the Centre's public engagement activities means that most audience questionnaires are most likely to be distributed in hard copy format.

We intend to use a combination of closed and open questions to obtain the fullest possible picture of findings. During formative evaluation, when projects are being piloted, open questions may be of use. During summative evaluation of projects, closed questions allow more data analysis and would be more useful.

Structure

- Questions will move from general to specific aspects of the activity being evaluated.
- Clear structure, and group together questions dealing with similar aspects of what you are evaluating.
- Ask personal information, such as age, at the end.
- Include demographic questions to provide context.

Using the WTCCB logo should be included wherever possible on evaluation material.

We will also evaluate the experience of our volunteers.

The template sheets for use in evaluation are attached in the appendix of this document.

4 Analysis of Feedback

We will attempt to enter evaluation data within 2 months of events occurring.

Data entry and coding

We aim to:

- Enter data into a spreadsheet on Microsoft Excel.
- Enter the data so that each row of the spreadsheet corresponds to one respondent.
- Number each paper questionnaire, with a unique code and to allow you to double-check responses later if necessary.
- Enter open responses into the spreadsheet in the relevant row.
- Keep hold of hard copies of completed questionnaires for 12 months.

Qualitative data

When analysing such data, we will look to identify common themes in the responses. A simple way of doing this is known as category analysis, which involves grouping similar responses into categories.

Category analysis works well for open questionnaire items. This type of method is not appropriate for qualitative evaluations with few respondents. If this is the case for your evaluation, it is best to report the results as a narrative, using example quotes to illustrate findings.

5 Success indicators

Event success should be measured against our aims as stated in our public engagement strategy. Success at a formative stage would be a majority of positive answers to open questions. However, success at this early stage is not as important as using all feedback to improve the project, and that should be the emphasis.

When projects are up and running and the evaluation is summative and should be tied in very closely with our aims.

Quick success indicator: visitors rating the activity or event as on average 3.5 or more on a scale of 0-5. Clear success would see an average of 4 or more on this scale.

5.1 Specific indicators of success in relation to our aims

Improve relationships with public, including disadvantaged groups and local audiences. On evaluation the majority of respondents should report, feeling they 'enjoyed' the event, felt 'listened to', they 'understood' what that activity was about, give positive reviews of the scientists that they met that day and would like to do a similar activity again.

Breakdown misconceptions about what our researchers do. On evaluation, the majority of respondents should report that they 'learnt something' and also tell us what that was, and also that they felt they 'understood' what the activity was about.

Provide the public with the capacity to make informed decisions about our research. On evaluation, the majority of respondents would report that they want to find out more, would like to talk to friends and family about what the activity/subject, and that they 'understood' what the activity was about.

Enable people of all ages to people of all ages and all walks of life to enjoy, understand, challenge and shape biomedical science, health research and STEM subjects generally. People will report, 'enjoying' the event, feeling 'listened to', that they 'understood' what the activity was about. People from a mixed demographic will attend the activity.

Inspire the next generation of scientists, by working with school children. Pupils report wanting to find out more, would like to do something similar again and give positive reviews of the scientists that they met that day.

Develop our researchers communication, critical thinking and transferable skills, using tailored training, support and opportunities to engage. Volunteers are happy to attend training (they think it is suitable), find it easy to locate a public engagement opportunity that appeals to them each year and report positively about their experience of involvement.

6 Conclusions

We have recommended a standardised approach to audience evaluation, using a core set of questions for all the activities.

Evaluating activities when they are at the pilot stage (formative evaluation) is useful in supporting and informing their development.

Reporting and sharing findings is encouraged. Reports should be short and should speak to colleagues as well as external stakeholders. Ideally, data are inputted routinely as soon as possible after events take place and that they are analysed. It is important that we plan for the resources required to input, analyse and report data.

7 Appendix

7.1 Suggested core questions and questionnaire format (pupils under 12)

What do you think about today's activity?

How old are you?

How would you rate today's activity (where 0 is the worst and 5 is the best)

0 1 2 3 4 5

	Yes	No	Don't know
Did you enjoy what you did with us today?			
Could you understand most of the things you did?			
Do you want to find out more about what you did?			
Did you learn something new today?			


Did today change how you feel about science? (please circle one)

More interested

No change

Less interested

Thinking about today's activity...

What did you learn today?		
What disappointed you?		
What did you think about the scientists that you met today?		
What amazed you?		

Thank you 😊

7.2 Suggested core questions and format (pupils over 12)

Pupil Evaluation (formative example)

School:

Year:

How challenging did you find the workshop? (Circle one)

Where: 0 = too easy; 3 = Just right; 6 = Too hard

0 1 2 3 4 5 6

How much did you enjoy working with the magnets?

Where: 0 = Not at all; 5 = Really enjoyable

0 1 2 3 4 5

Do you feel using xxxxxxxxxx assisted your understanding of the material? (Yes/No)

What is your overall level of understanding of the material covered today?

Where: 0 = I understood none of it; 5 = I understood all of it.

0 1 2 3 4 5


Do you feel you know more about xxxxxxxx now, than you did before the workshop?
(Yes/No)

Please rate this workshop overall using the scale below, 5 being the best.

0 1 2 3 4 5

What could we do to improve this workshop?

Thank you ☺

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7.3 Teacher/helper evaluation

School:

Age of pupils:

Number of pupils:

Please rate the following:

(Using the scale, 5 being the best, 0 the worst)

Were the students engaged?

0 1 2 3 4 5

Were the pupils challenged at the right level for them?

0 1 2 3 4 5

Do you believe using the tablets worked well? Did they benefit the learning of your students?

0 1 2 3 4 5

Do you think the activity worked well?

0 1 2 3 4 5

Was the workshop the right length of time for your pupils?

0 1 2 3 4 5

Please rate this workshop

0 1 2 3 4 5

What are your thoughts on...

What aspects do you think worked well for your pupils?

What might you add or take away from the workshop to improve it?

Would you recommend this workshop/show to another school?

Thank you ☺

7.4 General public questionnaire for all ages


Please tell us your thoughts about “Life through a Lens”

How do you rate today’s activity? (where 0 is the worst, and 5 the best score)

0 1 2 3 4 5

Please tell us why you gave the activity this rating?

Thinking about today’s activity...

What did you learn? 	
What disappointed you? 	
What did you think about the scientists that you met today?	
What amazed you? 	

Ages	We travelled from...	How long did you stay?	How did you find out about us?

Tick one box for each statement

	Strongly Agree	Agree	Neutral	Disagree	Strongly disagree	Don't know
I could make sense of most things I did	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
The scientists listened to my views	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
I'll talk to friends/family about cell biology	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
I'd like to do a similar activity in the future	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

Thank you 😊

7.5 Questions for researchers and volunteers

Please take a few moments to give us your thoughts – your comments will help us plan future public engagement activities.

Name of activity: _____ Date of activity: _____

Your job role & lab at WTCCB? _____

Please rate your overall impression of this activity? (tick)

Very good *Good* *Average* *Poor* *Very poor*

Please tell us why you gave the activity this rating?

What, if anything, about today's activity

...was most successful?	
...could have been better?	

How much do you agree or disagree with the following statements about your experience today? (tick one box for each statement)

	<i>Strongly agree</i>	<i>Agree</i>	<i>Neither agree or disagree</i>	<i>Disagree</i>	<i>Strongly disagree</i>	<i>Don't know</i>
I was well briefed before today	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
I would recommend taking part in public engagement to a colleague/peer	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
I would take part in a future public engagement activity	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Participating has made me think differently about how I explain my work to non-specialists	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Participating has made me think differently about my work	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

Please let us know any other impacts on you or your role at WTCCB. (e.g. your research or teaching)

Thank you 😊