

Impact of taking part in ‘Meet the Scientists’ on presenters

Meet the scientists is an initiative that attempts to bridge the gap between students carrying out their secondary education at institutions in the UK and (often early stage) researchers at higher education institutions (HEIs). Although there is a definitive positive impact on the students involved, the effect, if any, on the researchers is poorly understood. This brief report aims to evaluate the researchers initial motivations and perceptions with respect to public engagement, evaluate the impact of taking part in the scheme and finally assess the effectiveness and need for a pre-session training program.

Demographic

All researchers interviewed are currently studying/employed at the University of Southampton in either a PhD, post-doctoral or lecturer role. Of the eight individuals interviewed there was an even split between the genders and a bias towards early-stage researchers in age, with only one interviewee above the age of 35.

Methodology

Data were collected qualitatively *via* one on one recorded interviews shortly after the sessions, these predominantly were in person, however, two of the interviews were carried out over the phone no more than one week after the event. Questions asked were as followed (where ‘the session’ refers to the recent ‘Meet the Scientists’ session the interviewee’s took part in):

1. What was the most enjoyable bit about the session?
2. Did anything surprise you about the session?
3. What would you improve to make the session better?
4. What do you think the main benefit to the students was?
5. What do you think is the main benefit to you?
6. Do you think taking part in initiatives like ‘Meet the Scientists’ will impact your research in any way?
7. What would you say to anyone interested in taking part in ‘Meet the Scientists’?
8. Situation dependant question:
 - a. If interviewee had taken part in the training session: Did the training session have any impact on your interactions with the students
 - b. If the interviewee had not taken part in the training session: Do you think you would benefit from training for ‘Meet the Scientists’?
9. Why did you get involved with ‘Meet the Scientists’?
10. Do you have previous experience in public engagement – if so please elaborate?
11. Why do you think public engagement is important (if at all)?

Questions 1 – 7 attempt to ascertain the interviewee’s perception of the session they were involved in.

Question 8 directly assesses the interviewee’s perception of the training provision or whether they felt training was needed.

Questions 9 – 11 attempt to establish a baseline of the interviewee’s opinions and previous exposure to public engagement.

Results

The results are separated into three sections; baseline, session outcomes and perceptions of training. Each section contains a summary of responses to relevant questions and a brief conclusion.

Baseline:

Why did you get involved with ‘Meet the Scientists’?

By directly investigating the motivations of the interviewee, this question attempts to ascertain the key reasons for an individual’s involvement in the ‘Meet the Scientists’. Responses fell within three main motivators: enjoyment, social responsibility and career advancement (CV/public speaking experience). The majority of interviewees responded that they enjoyed communicating with younger generations and that bridging the gap between the ‘ivory towers’ of university and students was of vital importance to inspire future generations of scientists.

‘Really for the pleasure of doing it, for the benefit of the children themselves, for their career aspirations, for enhancing the level of awareness of science for society in general’

Of secondary importance was the perceived benefit to the interviewee’s personal development with three of the eight citing experience in public speaking and the positive impact on their CVs as driving forces.

Do you have previous experience in public engagement?

This question, when considered alongside the perceived need for/impact of training is useful to ascertain whether just having been involved in public engagement is adequate experience for ‘Meet the Scientists’ or whether the interviewees perceive a need for session specific training. Five of the eight interviewees had previously been involved in public engagement activities, with a variety of age ranges. The three remaining individuals had no previous experience of public engagement; despite this only one attended the training session.

Why do you think public engagement is important?

This question aims to further investigate the interviewees motivation for being involved in public engagement and could potentially influence the message being passed on to students. The majority of participants cite that the public funding of science in the UK as the main driving force behind the need for public engagement, with a goal of letting the public know how their money is spent. The second most common influencer is the perceived need to give scientific context for non-scientists, connect the work being studied in schools and presented on television to real life applications that directly impact the public.

'I think our whole society is founded on technology, the decisions that are being made at a public level often have a scientific component, [for] people to really participate properly in society people need to have a good grasp of science and technology.'

There was also a general consensus that a more scientifically aware society would be better equipped to make informed decisions about anything from healthy eating to animal research.

Conclusions from baseline

As a whole researchers seem to be motivated to engage with 'Meet the scientists' through a sense of social responsibility and pure enjoyment with less altruistic motives such as personal development and linking research to funding still of relevance but of secondary importance. In short the researchers interviewed all enjoy communicating their research and hope that some of their enthusiasm will inspire and educate the students they interact with.

Session outcomes

What was the most enjoyable bit about the Meet the Scientists session?

This question attempts to begin gauging the interviewees perceptions on how the event went and what they felt was the positive benefits for them personally. As a whole the interviewees cited the very act of interacting with the students and answering their questions as the most enjoyable part, with some of the interviewees mentioning that the student's reactions to their answers and their research was often very interesting. The questions were also very varied, ranging from specific applications of the presenters research to what their job actually entails or a 'day in the life'.

'I think just talking to the children and getting their reactions and some of the different questions they asked'

One aspect highlighted by less experienced interviewees (little or no previous public engagement experience) was the fact that although it was initially scary, it became a lot more enjoyable once it became apparent that the students were engaged and obviously taking in the concepts being discussed.

Did anything surprise you about the Meet the Scientists session?

As with the previous question, this seeks to gauge the interviewees perceptions of the event, as well as having the secondary benefit of subtly investigating any preconceptions they may have had regarding the students and their interactions. Three of the interviewees remarked that there was nothing that particularly surprised them about the session, however these three represent the most experienced in outreach delivery of the interviewees and so likely had clear ideas of what to expect. The five remaining interviewees all found the level of questioning and interest encountered from the students very surprising with several remarking how impressed they were with individuals knowledge and the specificity of some of the questions.

'... probably how nice the kids were, I thought they would be talking or something but they were generally quite interested and quite focused...'

Ultimately this relates to the interviewees generally having the preconception that the students would not be engaged by the content and likely misbehave, however all of the interviewees were pleasantly surprised.

What would you improve (if anything) to make 'Meet the scientists' better?

With this question the interviewees are given the chance to express their perceptions of any areas for improvement in either their own performance (self-evaluating) or of the overall session. This can be combined with a later question (*What would you say to anyone interested in taking part in the meet the scientists scheme?*) to provide an experience based list of recommendations for any future researcher to take part.

With regards to self-evaluation, half of the interviewees suggested that with practice the experience was better for both the students and themselves, citing the later sessions as 'a lot more fluid' when compared to their first group. Props were also suggested to be an essential improvement for interviewees who had not brought them in the first instance. There were little actionable suggestions for improvements to the format or running of the sessions, with two interviewees calling for longer, working environment based outreach (out of the remit of the 'meet the scientists' concept) and one interviewee suggesting that longer overall sessions (i.e. 2 hours split into 15 minute sessions rather than 45 minutes) would make more sense for those scientists not in close proximity to the venue.

The conclusions for this question are summarised with '*What would you say to anyone interested in taking part in the meet the scientists scheme?*' later in this report.

What do you think was the main benefit to the students?

This question encourages interviewees to evaluate their interactions with the students and based on that experience highlight, in their opinion, the most important benefit to the students from taking part in 'Meet the Scientists'. Overall half of the researchers suggested that the dispelling of the stereotypical lab and white coat based view of scientists was the greatest benefit to the students, perhaps subtly hoping that the removal of such a disconnected from reality stereotype would allow students to identify with science and scientists better. Two other major benefits were suggested by three of the eight interviewees and that was putting the science the students were already learning into a real world context, and presenting the flexibility in future careers available through studying the sciences.

'I think it probably gives context to their science lessons, turns it into a real world activity that has meaning and is useful and can actually get you a job...'

As a whole the key overall benefit that the interviewees identified was a change of perception of what a scientist actually is, which aligns closely with the objectives of the 'Meet the Scientists'.

What do you think is the main benefit to you?

Encouraging the interviewees to self-reflect on their experiences is vital to draw out key concepts to utilise in the promotion of future events. Every researcher interviewed cited that the main benefit was an improvement in their communication skills, especially to a lay audience. This was identified to have the further benefit of causing some of the interviewees to consider their own research from

a new perspective. Secondary themes were the pure enjoyment of the sessions and a perceived increase in self-confidence when faced with new situations.

Do you think taking part in initiatives like 'Meet the Scientists' will impact your research in any way?

As with the previous question, this question can provide valuable anecdote-based evidence to help promote the sessions to future contributors by attributing value. The majority of interviewees responded that they could see no discernible benefit to their research; neither how they conduct it or their research aims. Two of the researchers suggested that in the current funding climate, it will be beneficial to have proven public engagement experience.

'Probably not if I'm honest, I've got a very kinda focused research plan it's not obviously [...] influenced by external factors...'

These findings coupled with the question 'What do you think is the main benefit to you?' suggest that the major benefits for researchers to take part in 'Meet the Scientists' are personal development and enjoyment focused with the experience being less pertinent with regards to their research.

What would you say to anyone interested in taking part in the Meet the Scientists scheme?

This question is multifaceted since it forces a form of self-evaluation before providing recommendations for any future contributors, combined with the answers to 'What would you improve..' can provide a series of recommendations for future events. The interviewees were all very positive about the session, with every one recommending that interested parties take part. Reasons ranged from the fact the sessions are a lot of fun to gaining a new perspective to your research.

'I would say I really encourage it because I think not only does it benefit the students and probably benefits them more than it perhaps benefits you, but it [will] definitely benefit you in a way that you probably won't realise at the time....'

Combined with 'What would you improve..' the key recommendation is the bringing of physical props to showcase the research or science behind the research, since attempts to present (in a general academic style) were perceived to dis-engage the students, whereas when the students could physically interact with the items being presented it instigated their curiosity and promoted discussion. Further suggestions were practicing explaining your research to a lay audience and having something exciting as a back-up.

Conclusions from session outcomes

From the researchers perspective 'Meet the Scientists' is an extremely worthwhile and enjoyable experience, which as well as being viewed as a social responsibility to communicate your science to the next generation, provides valuable experience in communication and presentation skills as well as building of the researchers confidence. Due to the disparate nature of public engagement and academic research it is difficult to attribute any changes or influence initiated by the increase in researcher soft skills or their experience of communicating their science to lay audiences, indeed the researchers interviewed can see no real effect on how they conduct their research. Despite this, 'Meet the Scientists' remains a hugely enjoyable experience which is recommended by all parties involved, both those who are experienced in public engagement and those who have experienced it for the first time through 'Meet the Scientists'.

As a whole the interviewees only had minor suggestions to the overall running of the sessions, with some calls for longer sessions or visits to the various facilities to give context to some of the discussion points, however, these are minor points when compared to the main recommendations for future presenters of bringing props and practicing communicating to lay audiences, both vital to the success and enjoyment of all parties.

Impact of training

Did the training sessions have any impact on your interactions with the students?

This question unashamedly attempts to ascertain the perceived benefits of attending the training sessions prior to taking part in 'Meet the Scientists'. Four of the eight interviewees attended the sessions with the remaining four not attending, the results of which are summarised in the tables below: (numbers allocated are for segregating comments and have no further significance, answers are paraphrased)

Table 1 Summarised views of interviewees who attended training sessions

	1	2	3	4
Key benefit of attending session	Meeting like-minded communicators and getting feedback on presentation skills	Learning about the curriculum so outreach can be targeted	Learning how to manage student behaviour	Allaying fears on students questions

Table 2: Summarised views of interviewees who did not attend training sessions

	5	6	7	8
Reason for not attending training session	Previous outreach experience	N/A	Previous outreach experience	N/A
Would you hope to learn if you attended a training session?	A short training session would never be a disadvantage	Knowledge of the curriculum	Training session not needed	Learning how to facilitate discussion better

The individuals who took part in the training sessions all responded that they had a positive effect on their interactions with students, citing the chance to talk to other outreach practitioners, confidence boosting and student centred aspects as the key benefits of the training. The responses from interviewees who didn't attend the training session were mixed. Two of the four (who mentioned they had previous experience in outreach as reasons for not attending the training session) did not see any point to their own attendance however could see the need for those less experienced. Of the final two interviewees, one had little previous experience in outreach and suggested that a training session would be very useful for them personally to help them gain confidence in a discussion context and be able to facilitate better. The final interviewee had previous experience in outreach but felt that in hindsight further knowledge of the student's curriculum would be beneficial.