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People Like Me

Evaluation Report



Produced by

**Clem Herman,
Jane Kendall-Nicholas
and Wendy Sadler**

May 2018

Executive Summary



People Like Me is both a resource and a strategy to inspire and support girls into Science, Technology, Engineering and Maths (STEM) education and careers. At the core is the concept that raising awareness of the types of people who work in STEM and the range of possible jobs in STEM will encourage girls to continue with studying science subjects in school, and also aspire to careers in these sectors.

The People Like Me initiative has been tremendously successful in gaining the interest of schools and companies, and in delivering interesting and thought-provoking career focused workshops to girls. These workshops have resulted in a clear impact on the ambitions and interest in STEM among the girls who participated.

Resources for People Like Me were evaluated and found to be readily available and suitable for delivery to girls in the target age range in school and at parent-child events. The resource has been successfully adapted for other contexts.

Responses from girls were overwhelmingly positive, and most said they found the session useful and learnt a lot. The quiz and interactions with role models were particularly well received, confirming that the approach is successful in demonstrating to girls that science, technology, engineering and maths (STEM) can be for 'People Like Me'. After the event, 57% of girls completing questionnaires reported that they

were now more interested in studying science and maths at school, and the percentage who were not interested at all had decreased from 10% to 4%. Girls were asked to suggest words that describe jobs that use STEM subjects, and the most frequent descriptions were interesting, clever, varied, useful, fun, well-paid and exciting. Nearly two thirds said they had learnt more about different careers in STEM during the workshop. From their comments it was clear that the session had increased their awareness of the variety of jobs that involve STEM, and their understanding of the value in choosing to study STEM subjects.

The most frequently identified roles for the girls who participated were explorer, supporter, and trainer. The lowest responses were for policy maker, entrepreneur and manager. It is noteworthy that these roles tended to be in more support than leadership roles, and further research could be undertaken to ascertain whether girls and boys are making different choices in their adjectives leading to different outcomes in the subsequent suggested job roles.

Parents and carers who attended parent-child events also found the sessions useful and learnt about different careers that might suit their child. Of parents completing questionnaires, 76% were very interested in STEM subjects, and 60% worked, now or in the past, in jobs that involved science or technology. After the session, 96% of the parents or carers stated they would be really pleased to support their child if they wanted a STEM career. There were some concerns from parents about unintended messages that may be transmitted during sessions, and it is recommended that this is investigated further.

Teachers in schools reported that People Like Me sessions were enjoyed by girls and broadened their understanding. However, they are often stand-alone sessions and it would be beneficial if People Like Me was set within a series of STEM or careers interventions, as intended by the author of the original People Like Me resource. Working with other organisations may facilitate this.

The deliverers of People Like Me sessions, from industry and academia, were enthusiastic about the aims of People Like Me and had volunteered their time and energy to deliver the resource to girls. They reported that they had delivered sessions that were well-received and enjoyed by most girls. Further help in identifying schools and enabling sessions to take place is needed to increase the benefit of the initial training sessions, as shown by the number of people who had attended but did not go on to deliver any sessions. Making it simpler and cheaper for deliverers to be trained could also increase the number of sessions taking place, and therefore girls who are reached.

Industry sponsors have benefitted from the production of bespoke resource packs, and this has enabled them to provide People Like Me sessions related to their sector or company. This has been supported well, but some companies would like clarity about the benefits and responsibilities associated with sponsorship.

This report makes a number of recommendations to build further on the successful delivery of this innovative programme.

Recommendations for Further Development

We outline below some preliminary recommendations for development/improvement of the resources and delivery model based on the feedback we have received during this evaluation. These are intended to inform the further development of People Like Me into its next phase as a digital resource and to improve the sustainability of the initiative through uptake and sponsorship by companies. Further details are included in the **Recommendations** section of the report.

- Update materials to include more recent statistics, fewer adjectives in the list, and a wider range of job roles.
- Include guidance for the use of new digital materials, for individuals and workshop deliverers.
- Provide support for those who have undertaken training sessions in initiating and implementing contact with schools, to increase the multiplier effect.
- Offer structured advice and support for schools to embed People Like Me in programmes of STEM engagement.
- Clarify the role of companies – as sponsors and/or providers of training – and ongoing expectations of support.
- Clarify marketing messages about who People Like Me resources are to be used by – anyone or just trained people?
- Increase interaction within workshop events, including use of role models in person where possible.
- Develop a more robust system of keeping track of events and impact.
- Consider further research to track longitudinal impact on subject choice and outcomes.

1. Background

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1.1 What is People Like Me?

People Like Me is an intervention to support the increase of women and girls into STEM education and careers. As such it sits in a long tradition of efforts - in the UK and globally - to tackle gender inequality in the study of STEM subjects, and leading to employment/careers in the scientific, engineering and technology sectors.

People Like Me is both a resource and a strategy with a number of potential points of impact. At the core is the concept that raising awareness of the range of possible careers and jobs in STEM will encourage girls to continue with studying science subjects in school, and also aspire to careers in these sectors.

People Like Me is a ground-breaking resource that shows girls that people just like them are happy and successful working in science, technology or engineering.

Interventions and initiatives to challenge stereotypes and increase the attraction of STEM to girls are not new. However People Like Me is unique in its twin aspirations as a strategy for schools as well as for industry engagement. A key part of the People Like Me strategy is to engage employers directly in the process of career advice and sensitising girls to potential careers in these sectors. This has been achieved through the development of industry or sector specific versions of the resource materials and training packs. These are then intended to be used in workshops delivered by professionals in STEM occupations who can challenge gendered stereotypes about STEM careers.

People Like Me workshops for girls are therefore delivered not only in and with schools, but also in company premises.

By delivering People Like Me, organisations can engage directly with the next generation of STEM talent.

A further aspect of the strategy is to involve parents who are recognised as being crucial influencers on career decision making and subject choice. Thus a variation of the intervention has been designed for parents and children (especially mothers and daughters) to attend together.

People Like Me therefore has a number of key stakeholders - employers, schools, parents, STEM professionals as well as girls themselves, and this evaluation sets out to examine the perceptions, experiences, and impact on all of these stakeholder groups.

The People Like Me workshop activities and materials were developed in 2015 following the recommendations of a report compiled by Professor Averil MacDonald and sponsored by Network Rail (MacDonald, 2014). The *Not for People Like Me* report draws on previous research about women's participation in STEM and advocates a career education model based on personality traits. This then informs the content by using relevant quizzes and activities in the workshops.

We begin with an analysis of where the People Like Me intervention sits in relation to the existing research about underrepresentation of girls and women in STEM.

1.2 People Like Me in Theory

Researchers have tried for many years to understand why girls and women are so under-represented in some areas of STEM education, a problem that is particularly intense in the UK compared to some other OECD countries (Salvi del Pero & Bytchkova, 2013). It is clearly not about ability. An extensive review of the evidence in the psychological literature, concluded that there is no evidence that women's underrepresentation in top jobs in mathematics intensive fields is due to gender differences in ability or motivation (Ceci & Williams, 2010). Rather, the so-called 'Maths Gap' is due to social and cultural factors such as stereotype threat where women and girls perform less well because they are unconsciously conforming to stereotyped expectations (Deemer, Thoman, Chase & Smith, 2014).

Another large body of work coming from the developmental psychology perspective looks at educational choices made by girls and young women, for example examining how self-concept of mathematics ability can have differential gendered outcomes (Sáinz & Eccles, 2012) and how subject choice and motivation in STEM is influenced by expectation of success and the value placed on options available, the expectancy-value model (Eccles, 2007).

Teachers and Parents

Other investigations have focused on the educational environment for example looking at teacher or parental influence (Lazarides & Ittel, 2013) or on media representation of scientists and engineers (Whitelegg et al, 2008). A recent large scale study of over 9,000 UK primary school children aged 10/11 found that girls lack of science aspirations began at an early age even before they were able to make subject choice decisions. They argue that science aspirations do

not fit with these girls' views of acceptable femininity, or with their own sense of selves as learners. Science careers as seen as 'clever'/'brainy', 'not nurturing' and 'geeky' all of which are largely 'unthinkable' especially for working class girls (Archer *et al.*, 2013). Moreover studying science subjects does not necessarily lead to a desire to 'become a scientist' – young people can report enjoying science (e.g., they may find it fun, exciting, important, and interesting), but they may still choose not to study it at higher level. Osborne and Dillon (2008) have argued for science education to focus on "what kinds of careers science affords – both in science and from science – and why these careers are personally fulfilling, worthwhile, and rewarding" (p.8).

The role of parents in influencing subject and career choices is sometimes overt but often unrecognised both by parents and young people themselves. Parents are key influencers, their values and attitudes towards science and indeed their own career aspirations can shape those of their children (Taskinen *et al.*, 2015). Evidence suggests that parents who support their children's interest in science through active discussions, visits to museums and watching science broadcasts can help to influence their children's commitment to science (Archer *et al.*, 2012).

Moreover, parental influence can reinforce traditional stereotypes especially if parents are unconfident about science themselves. Girls' internalization of gender stereotypes negatively affect their achievement in those STEM subject-areas where they are supposed to have a low performance (Eccles, 2007; Leaper & Brown, 2014). Thus parents must be involved in efforts to change the attitudes of young people towards taking up careers in STEM.

An alternative approach to understanding under representation of girls in STEM is taken by economists who tend to focus instead on market forces such as supply and demand. This line of argumentation suggests that career decisions are made on the basis of 'comparative advantage, whereby individuals choose to work in areas where they are relatively more productive—weighing the costs and benefits of alternative careers and nonmarket activities' (Ceci *et al.*, 2014 p.83).

Many previous initiatives have focused on trying to raise aspirations and engagement of girls into STEM education and careers. The importance of role models to inspire and give real meaning is a common feature of these. In addition there is a long tradition of single sex interventions. As a strategy, girls/women-only education or training is claimed as an emancipatory strategy that frees women and girls from the competitive and critical gaze of men and boys. Indeed evidence suggests that uptake of science and technology subjects is higher in single sex schools or women only higher education colleges. A number of US universities have experimented with women-only living and learning environments to increase the retention of women STEM students following a similar rationale and several studies suggest that women on these programmes are more inclined to persist in STEM education and progress on to graduate school (Szelényi, Denson & Inkelas, 2013).

However there is a danger that such approaches can also reinforce gender stereotypes by labelling women or girls as 'deficient' in technological skill and emphasising their lack of confidence. In this sense they have often been considered contentious, criticised by some as perpetuating gender binaries and inequalities.

The conclusions from this body of research support the underpinning rationale for the



People Like Me approach in the following ways:

- **Knowledge about the kinds of careers** that science affords and why they are fulfilling, worthwhile and rewarding should be a part of science education.
- **Parents** must be involved as they are key influencers on girls career and subject choices.
- **Economic factors** – such as availability of jobs, career status and financial reward – are important considerations in career decision making.
- **Single sex sessions** can work as a positive strategy to enable girls to talk about and consider subject and career choices in non-traditional subject areas (although not necessarily always the optimum strategy and mixed sessions can also be effective).
- **Role Models** – are an important part of any initiative to encourage girls into STEM by showing them images and examples of diverse types of women in these kinds of jobs.



1.3 People Like Me in Practice

Training for Deliverers

The WISE Campaign organises People Like Me training events for individuals, companies or other organisations. The sessions aim to train people to understand the background and philosophy of the resources and then encourage them to deliver sessions in their local schools or other groups.

The basic training is a half-day course that consists of:

- Background research about gender and STEM
- Challenging common myths about women and STEM
- An introduction to Unconscious Bias
- Introduction to the People Like Me materials
- How to run the various versions of the activity in schools
- Where to get further resources

At the end of the session participants become 'recognised and fully licensed' to deliver People Like Me, receiving a printed resource pack. In addition, refresher training and support is provided via webinars. The WISE website has testimonials from those who have been trained to deliver People Like Me.

The workshops for girls that they are trained to deliver are targeted at Key Stage 3, ideally to girls aged 12 to 14, and timed to coincide with the point at which girls are making subject choices for GCSEs. The resource has been designed to be used for girls-only groups although in practice some sessions are delivered to mixed groups of boys and girls.

The basic premise, which is explained to potential trainers, is that girls will be happy and successful in a career if they find a path that matches their natural characteristics and skills,

and that this is based on research that shows that girls prefer on the whole to describe themselves using adjectives rather than verbs (MacDonald, 2014). Previous initiatives to encourage girls and women into STEM have tended to focus on what STEM jobs are and what people in those jobs do, not what those people are like. This People Like Me model of focusing on attributes and personality has some similarity with existing practices in careers advice (for example the Briggs-Myers test, and the Holland Codes).

Following the training, it is then up to the trained individuals to go out and deliver sessions. The advice is to contact their local STEM Learning Centre - or to go into schools through personal contacts. There is not currently a central database or online list of those who have received the training. This could be a useful addition for schools who want to look up a local trainer to come to their school or event.

WISE, SEMTA and ICE also produced an Apprenticeship Toolkit as part of which WISE developed an 11-18 year old variant for People Like Me focussing on apprenticeships. Specific training to address the wider age range and opportunities through apprenticeships was developed.

Delivery

The materials outline three key versions of the People Like Me workshop lasting 30 minutes, 50-60 minutes and half a day. At the core of the activity is the completion of the quiz and the interpretation of what the various 'types' mean. At the very minimum this is usually then linked to some case studies who have those personality types and differing roles related to STEM. Depending on the time spent, more or less time is then spent outlining some of the factors of working in STEM (such as starting pay, and job prospects for the future) and discussing the role models featured in the case studies.

In the extended version there is a model suggested which involves girls then moving around in a 'speed dating' type format to meet a variety of STEM role models first hand and talk to them about their job. Although this version of the workshop is possible using industry teams or STEM ambassadors at a larger event, it is often not possible to organise due to the number of people required.

2. Methods

This evaluation was commissioned by the WISE Campaign, and aims to examine the People Like Me methods, materials, implementation and impact. In particular we were asked to offer recommendations for the continued roll out of the initiative, aimed at other stakeholders and investors, and for adaptations to input into the development of a digital version of the workshop materials and quizzes.

The evaluation methods were designed using an adapted version of Kaufman’s 5 Step Evaluation approach (Kaufman & Keller, 1994) which incorporates inputs, outputs, outcomes and impact (see **Figure 1**). To incorporate this range of objectives a mixed methods approach was

used, including documentary analysis, analysis of participation, questionnaires, participant observation and semi-structured interviews. A mapping of stakeholders was carried out to identify where the focus of the evaluation should lie (see **Figure 2**).

Documentary Analysis

Resources for People Like Me are freely available on the WISE website, including background information for those leading workshops. A pack is also available to those who complete training sessions to lead workshops. These materials were examined and summarised.

Evaluation Stage	Measures / Objectives	Methods / Data Source
Input and process	1. Quality and content of resources and delivery processes	Desk research – review of materials and documentation Examination of participation data to date
Input and process	2. Satisfaction of stakeholders and beneficiaries with events and training packs	Survey questionnaires Interviews
Acquisition	3. At individual level (girls) - benefits or outcomes met	Survey questionnaires Observations
Application	4. Individual (teachers and parents) – use and transfer of newly acquired knowledge and skills	Interviews
Outputs/ outcomes	5. Personal and organisational (school and or individual) benefits	Interviews
Broader outcomes	6. Consequences across sector – STEM/WISE Campaign. Profile of the Campaign, policy impact, commercialization opportunities etc.	All above

Figure 1. Evaluation methodology

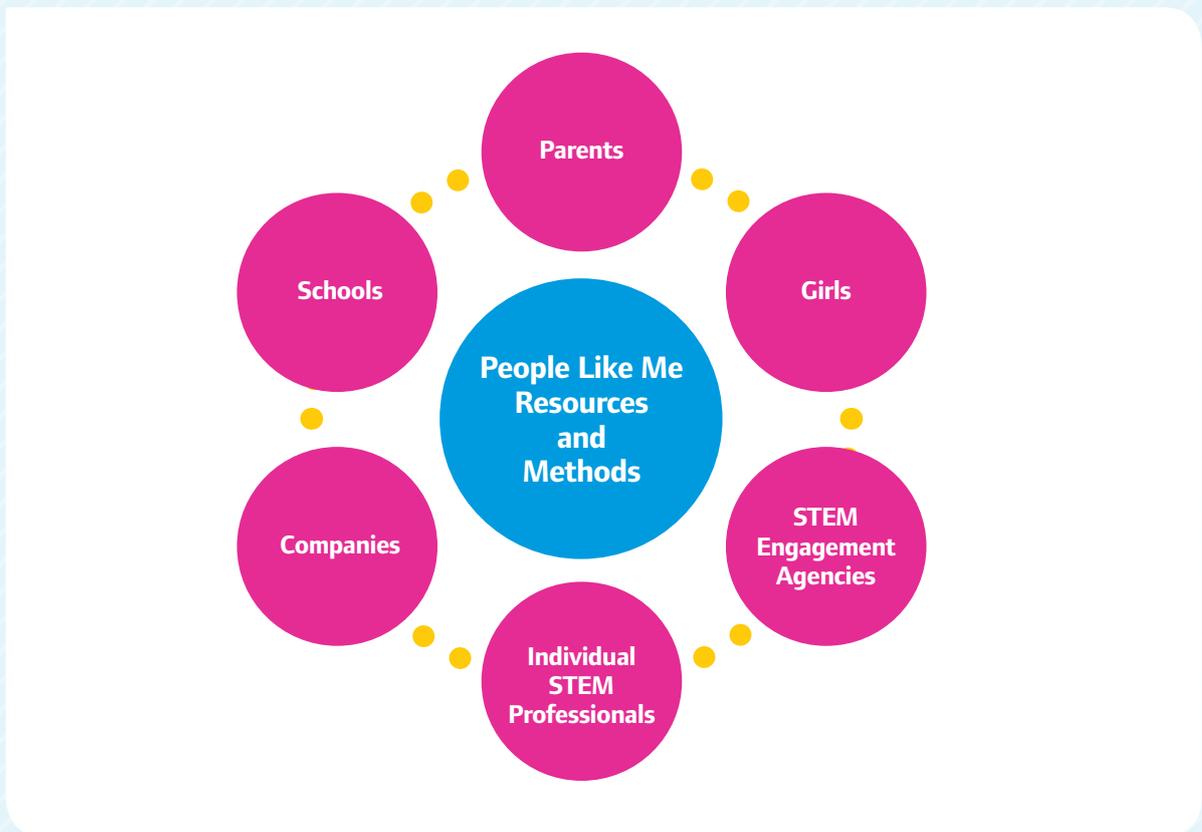


Figure 2. Stakeholder diagram illustrating sites for evaluation

There is no central record of People Like Me sessions, so we were not able to determine how many sessions have taken place. However, through individual contacts and data obtained through the People Like Me website, we were able to obtain details about a range of events in 2016 and 2017, and other ways in which People Like Me resources have been used.

Questionnaires

A questionnaire was developed that could be completed by participants immediately after attending a People Like Me workshop. Two instruments were created, one for girls and the other for parents. Participants were asked to complete questionnaires at six parent-child events and one school class event. The questionnaires are shown in **Appendices 6.1** and **6.2**.

Observations/Focus Group

Participant observation was carried out at a school workshop and focus groups carried out with two groups of girls.

Interviews

Semi-structured telephone interviews were carried out with individuals who had delivered People Like Me sessions, companies who were engaged in sector specific initiatives, as well as teachers and STEM engagement professionals. Parents from three events were also interviewed. Participants were selected for interview using a purposive (non-random) sampling strategy (*Robinson, 2014*), based on the comments they made on the questionnaire, positive or negative, to provide a full range of views.

3. Results

The evaluation method set out to focus on these specific areas:

1. Quality and content of resources and delivery processes
2. Satisfaction of stakeholders and beneficiaries with events and training packs
3. At individual level (girls) - benefit or outcomes met
4. Individual (teachers and parents) – use and transfer of newly acquired knowledge and skills
5. Personal and organisational (school and or individual) benefits
6. Consequences across sector – STEM/WISE Campaign. Profile of the Campaign, policy impact, commercialization opportunities etc.

In the following sections we outline how we have addressed these in analysing our data.

3.1 People Like Me Resources / Website

We analysed the information about People Like Me available during the first half of 2017 on the website of WISE, the campaign for gender balance in science, technology and engineering: www.wisecampaign.org.uk/people-like-me

The People Like Me website is summarised in **Figure 3**. The WISE homepage is the starting point and contains the aims and the People Like Me launch video from British Science Week 2015. From here there are links to information for parents, girls, teachers and industry sponsors, the generic and industry-sponsored Resource Packs to run sessions, examples of role models, training information, and testimonials.

The audience for the resources is described as outreach staff, teachers and STEM ambassadors,

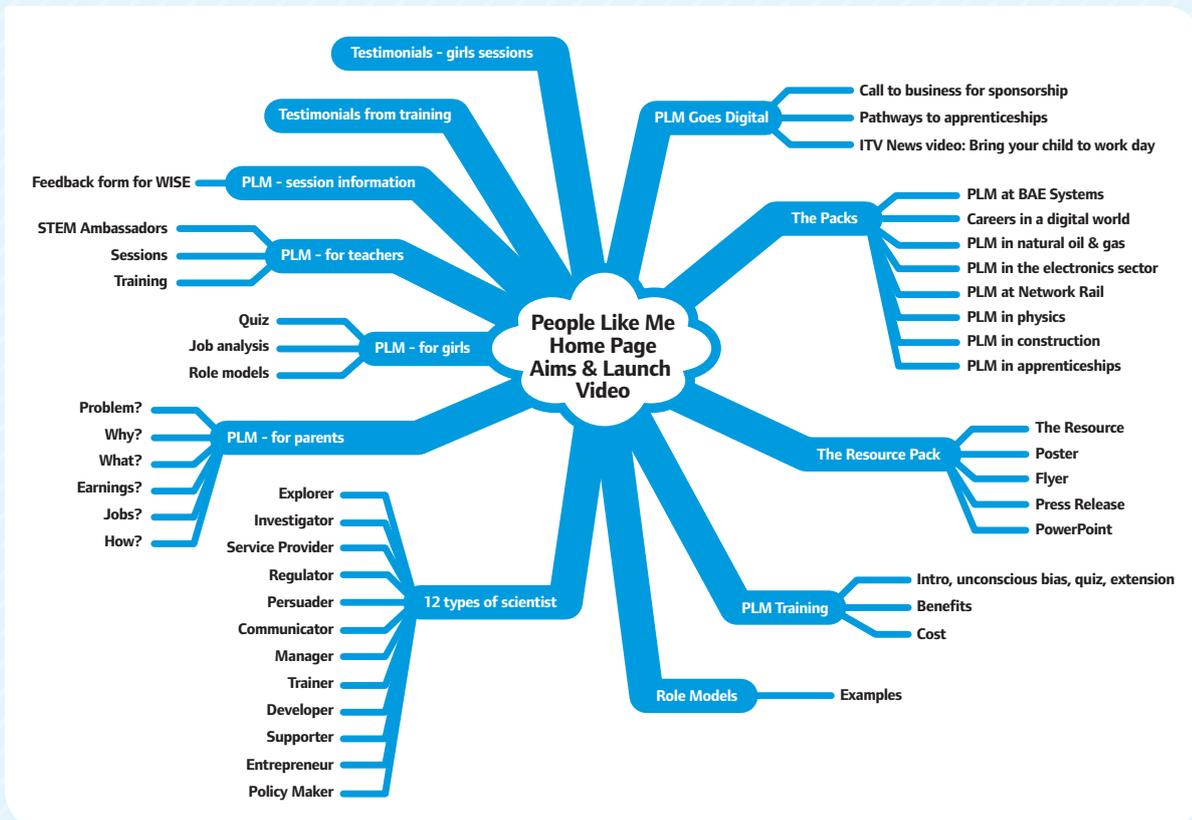


Figure 3. Mindmap summarising the People Like Me website

and the home page states that the aim is to support recruitment of girls into STEM subjects post-16, particularly physics and engineering. The approach is summarised as *'showing girls that people with similar personality traits and aptitudes are happy and successful working in STEM'*. A comprehensive Resource Pack is freely available on the website for anyone who wishes to lead People Like Me sessions.

The Resource Pack consists of an explanation behind the approach, top tips for teachers, guidance on running a session, including a lesson plan, the adjectives quiz and analysis. This is supported by a glossary to explain the adjectives, summaries of the job roles that the quiz identifies for participants, and case studies of young women working in STEM. It is stated that the quiz is recommended for an all-girl setting. Various types of sessions are described, suitable for different lengths of time and in different contexts, such as school lessons or mother-daughter sessions after school. Posters and flyers can be downloaded, and a PowerPoint presentation, although this contains data on salaries from 2012/13.

Extensive further resources are available through the website. There are more examples of role models, linked to the job roles used in People Like Me, and testimonials from participants. There are also summary introductions for girls, teachers and STEM ambassadors, and parents and carers.

Sponsors have the opportunity to develop a bespoke People Like Me resource for their organisation, industry sector or region, and the packs that have been developed so far are available on the website. These include, for example, packs related to a specific company, such as BAE Systems or Network Rail, and packs for a particular industry sector, such as physics or electronics. These are adapted from the original

Resource Pack by substituting sector specific job descriptions and role models. Further packs are under development.

The Apprenticeship Pack (released in 2017) is targeted at girls and women aged 14-19. It contains data about the uptake of STEM apprenticeship by girls, and the job roles have been re-packaged as 'apprenticeship types', with relevant case studies.

The People Like Me website enables those who have delivered sessions to complete a feedback form giving details such as the location, date and number of girls reached, but this is voluntary and WISE does not keep complete records of People Like Me sessions that have taken place.

The website includes a section called 'People Like Me Goes Digital', which was launched on 31 January 2017. The vision to reach 200,000 girls is described and companies are called on to sponsor the project.

3.2 People Like Me Events

Due to the resource restrictions of the WISE Campaign team, there is no central record of the location or number of People Like Me events, instead there is a system of voluntary reporting from deliverers. During this period we gathered information about 24 People Like Me events that took place in 2016 and 2017 which were illustrative of the typical settings in which events are run, and the range of locations and training providers.

Sessions have been run in schools by teachers, or by visitors from outside the school. External workshop leaders are usually from a local university or company, and some are part of national networks such as STEM Ambassadors (*STEM Learning Ltd, 2017*). Sessions may take place in lesson time, or they may be special events for parents and children out of school

hours. People Like Me events have also been run at company venues or universities for visiting school groups, sometimes on days such as National Women in Engineering Day or Bring your Daughter to Work Day.

There is no overall co-ordinated strategy for setting up and rolling out the events, rather it is up to the people who have been trained to initiate and set up events, whether this is with local schools, in their companies or other locations. While this has resulted in a wide spread of participants and locations, this has relied on the existing networks and contacts as well as confidence of those able to set up such sessions, something that not all found easy.

In interviews, deliverers made specific suggestions about ways in which WISE could help them contact schools and find role models. Two suggestions were for letter and email templates that could be sent to schools to introduce the programme and offer sessions, and advice about timing of sessions, for instance to coincide with the time when girls are choosing options:

If there was a package for people that are going to go out there and deliver it. You know, so silly things like here's how many tables you need, this is how many copies of things that you need, here is the letter for the school, and here's what it is we are trying to achieve.

If there were some of those templates it's a lot easier to write on an address and bung it in the post or in an email than it is to sit there and think what do I say to this school?

Comment from a deliverer

3.3 Girls' Perspectives

A total of 229 questionnaires were completed by girls at six parent-child events (A-E and G) and one school class event (F). The ages of the girls ranged from 8 to 16 but 79% were in the target age range of 11 to 14 years, in school years 7 to 9. Only responses from girls in school years 7 to 9 have been analysed here (180 responses).

Girls were asked how they felt prior to the session about studying science and maths at school¹ and the responses are shown in **Figure 4**.

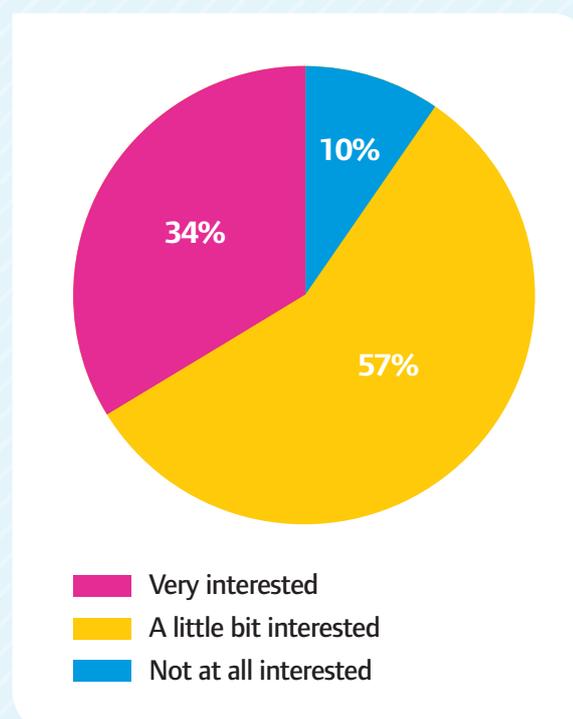


Figure 4. Responses to the question 'How do you feel about studying science and maths at school?'

1. For comparison, the 2017 Wellcome Foundation study found that around two-thirds of young people (68%) said they found science lessons at school very or fairly interesting. <https://wellcome.ac.uk/sites/default/files/science-education-tracker-summary-feb17.pdf>

Only a few were not at all interested in studying science and maths in school, with the majority a little bit interested and 34 % stating they were very interested.²

Each participant was asked to list the top three People Like Me job roles that the Quiz identified for them. **Figure 5** shows how many times each job role was cited. The most frequently identified roles for the girls who participated

were explorer, supporter, and trainer. The lowest responses were for policy maker, entrepreneur and manager. It is noteworthy that these roles tended to be in more support than leadership roles, and further research could be undertaken to ascertain whether girls and boys are making different choices in their adjectives leading to different outcomes in the subsequent suggested job roles.

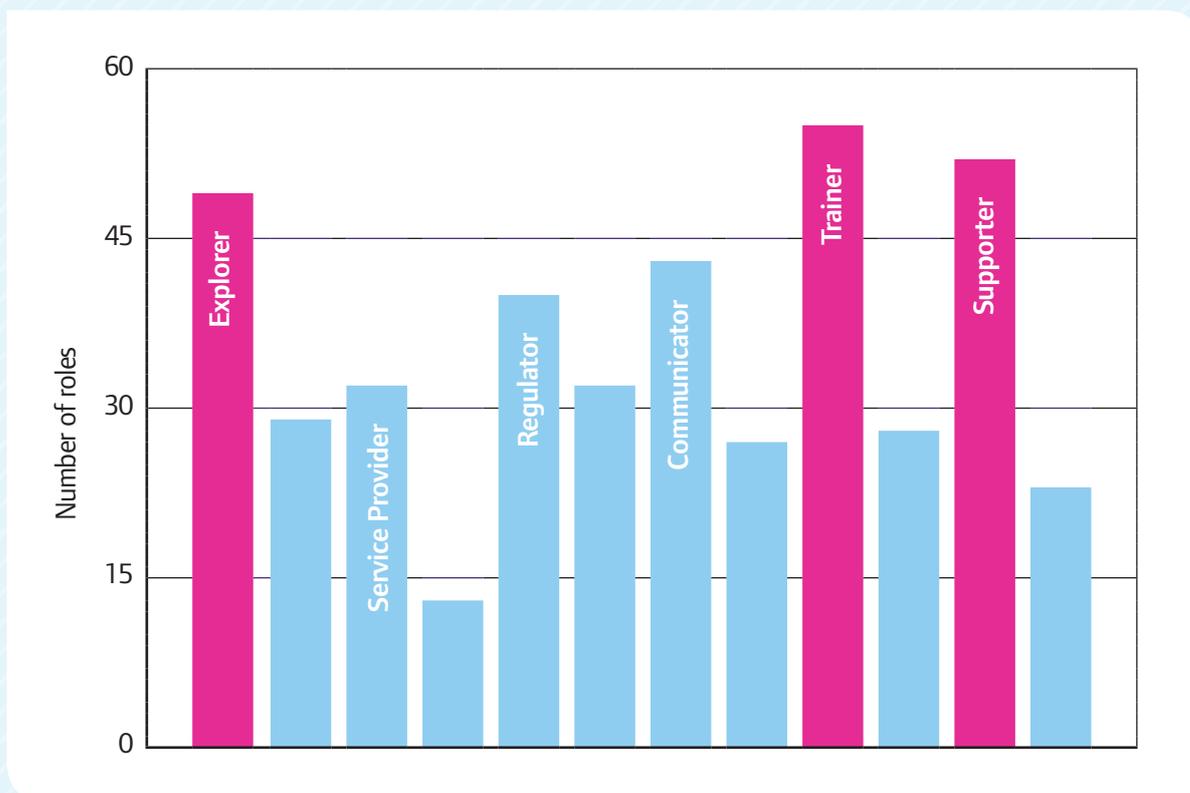


Figure 5. Top three job types identified in the quiz activity

2. In a 2015 study by Engineering UK found that age 11-14 yrs 71% (male 74%, female 69%) enjoyed science and when asked 'Is a career in science, technology and engineering desirable?', responses were 49% science, 57% technology and 43% engineering. <https://www.engineeringuk.com/media/1325/sep-2015-engineers-and-engineering-brand-monitor-2015-1.pdf>

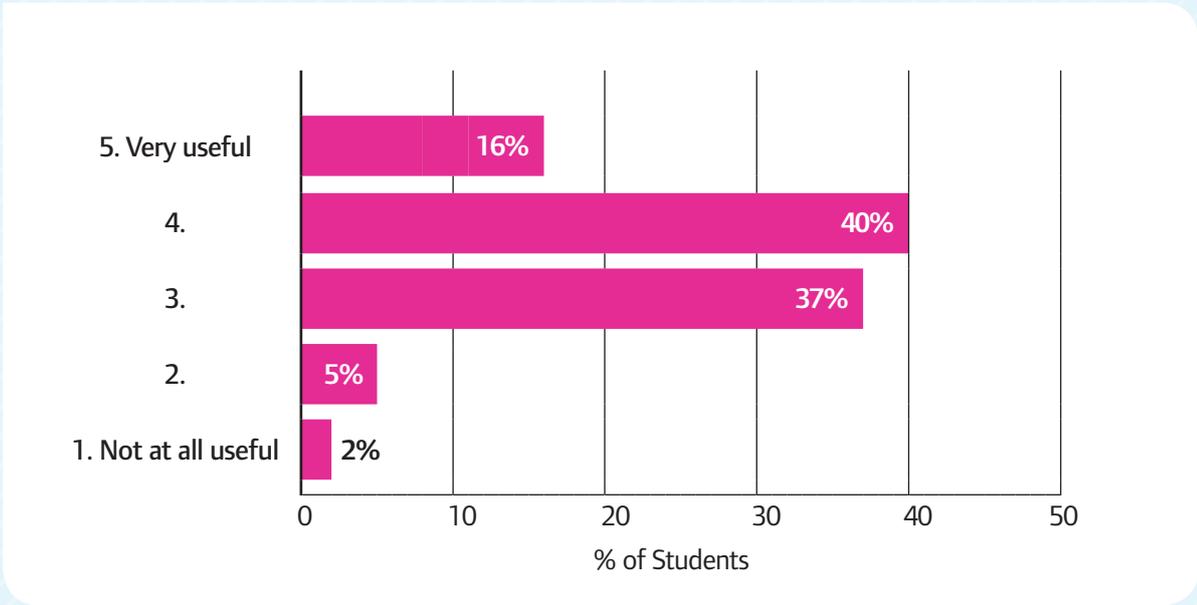


Figure 6. Student responses to the question ‘How useful was the session to you?’

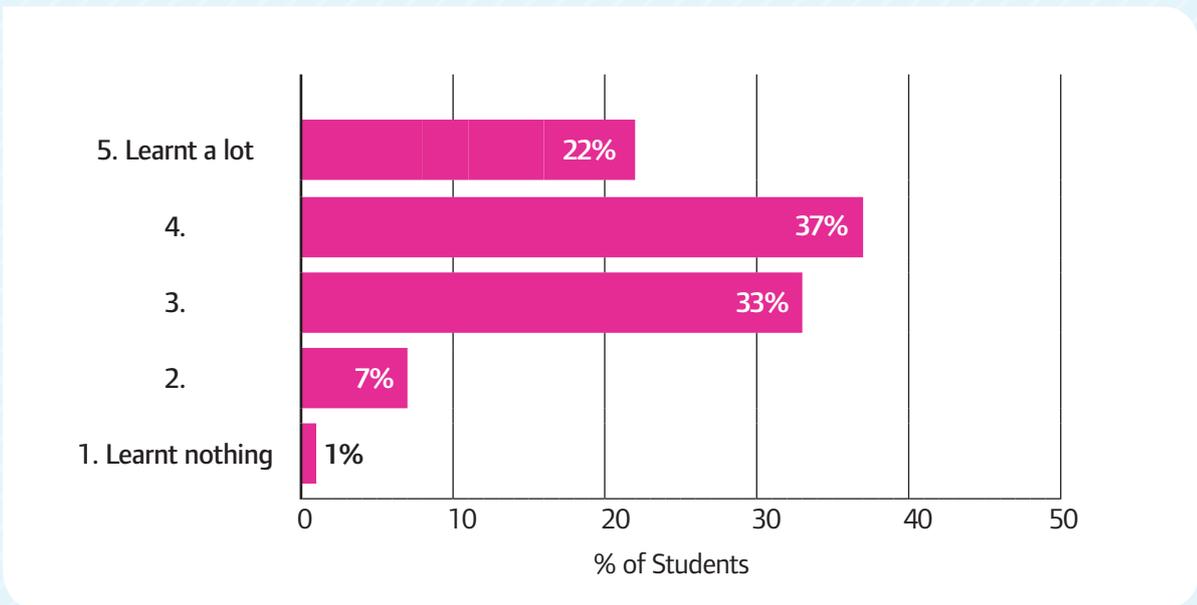


Figure 7. Student responses to the question ‘How much did you learn about the different careers you might like to have?’

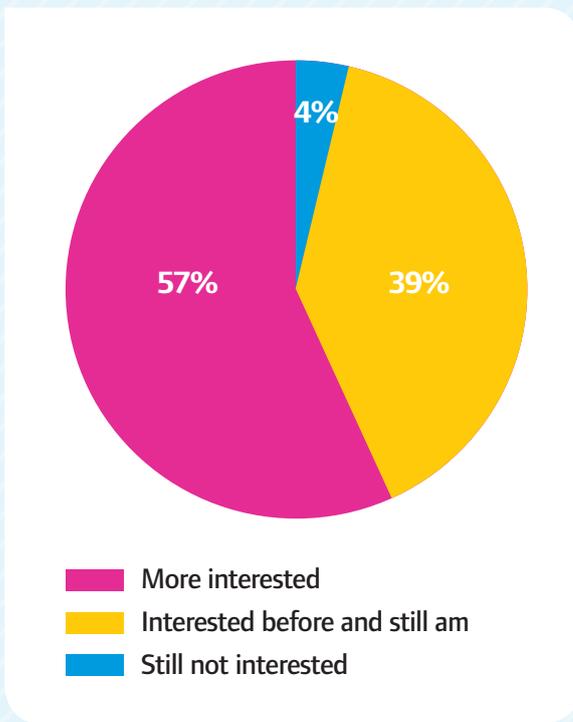


Figure 8. Responses by girls to the question 'How do you feel now (after the People Like Me session) about studying science and maths at school?'

Girls were asked how they felt after the People Like Me session about studying science and maths at school and the responses are shown in **Figure 8**. There was evidence that girls came away feeling more interested in studying STEM subjects and with a positive view of STEM careers. On the questionnaires, 57% of girls said they were more interested in studying science and maths at school after the People Like Me session, the percentage who were not interested at all had decreased from 10% to 4% and 39% had been interested before the session and still were.

Girls were asked to suggest three words that they would now use to describe jobs that use science, technology, engineering and maths. Words were grouped according to their meaning, and the frequency of different ideas is shown in **Figure 9**. The most common description was 'interesting' (mentioned 98 times), followed by 'clever' (26), 'varied' (25), 'useful' (23), 'fun' (23), 'well-paid' (21) and 'exciting' (20). Numerous other words were mentioned, the most frequent of which are shown in the figure.



Figure 9. Girls' words to describe jobs that use STEM subjects.

Comments from girls confirmed that many had understood key points from the session. The session was able to increase their knowledge of the variety of roles available in STEM careers, to show them that they should look for a career that matched their personality, and that these two aspects could coincide – that is, that STEM careers could be for ‘people like them’.

Examples of student comments on the questionnaires are:

That science is involved in careers that I never thought would have it.

How your personality should help determine what jobs you would get and enjoy.

That there are so many jobs for women including STEM.

3.4 Parent Perspectives

Questionnaires were received from 144 parents who attended six parent-child People Like Me events. Parents were asked about their own views on science, technology, engineering and maths (see **Figure 10**) and whether they worked in a job that involved science or technology, or had in the past (see **Figure 11**).

76% of parents were very interested in STEM subjects and 60% worked, now or in the past, in jobs that involved science or technology. There are two points to make here. Firstly that our sample is therefore not typical of all parents and is biased towards those with ‘science capital’ (Archer *et al.*, 2013). Secondly it points to the

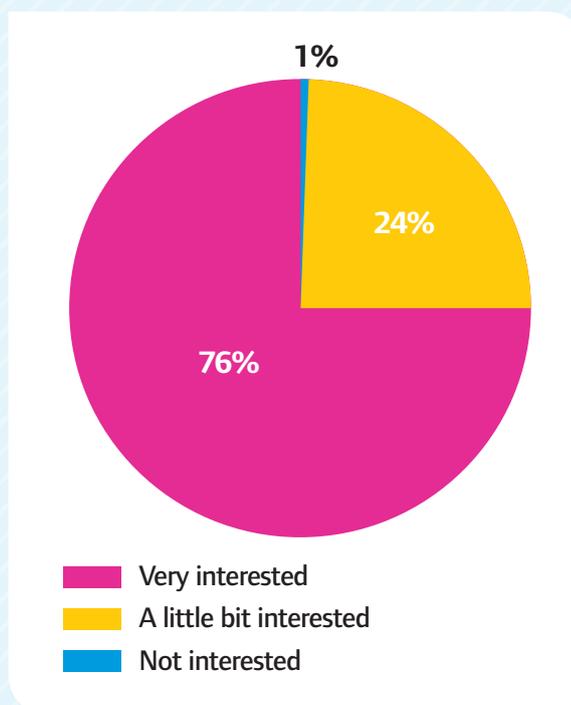


Figure 10. Parent responses to the question ‘What are your own views on science, technology, engineering and maths?’

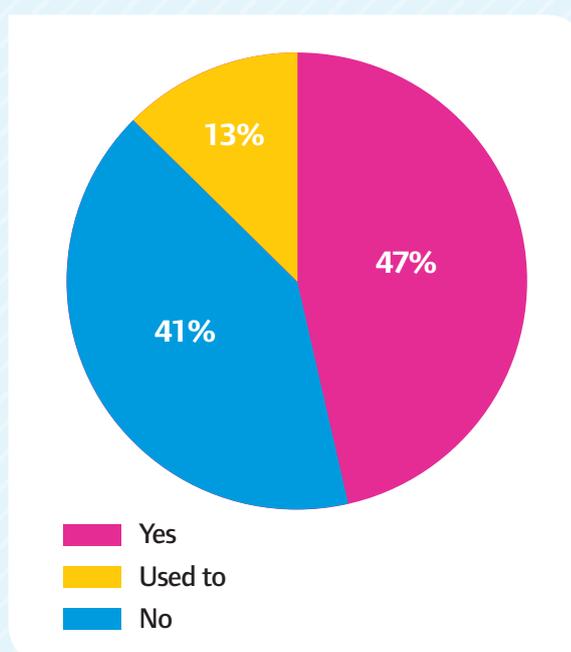


Figure 11. Parent responses to the question ‘Do you work in a job that involves science or technology?’

need for WISE to proactively engage with parents who are not confident about STEM if People Like Me is to make an impact in families of communities where there is less science capital.

Parents were asked two questions about the People Like Me session itself, as shown in **Figures 12 and 13**:

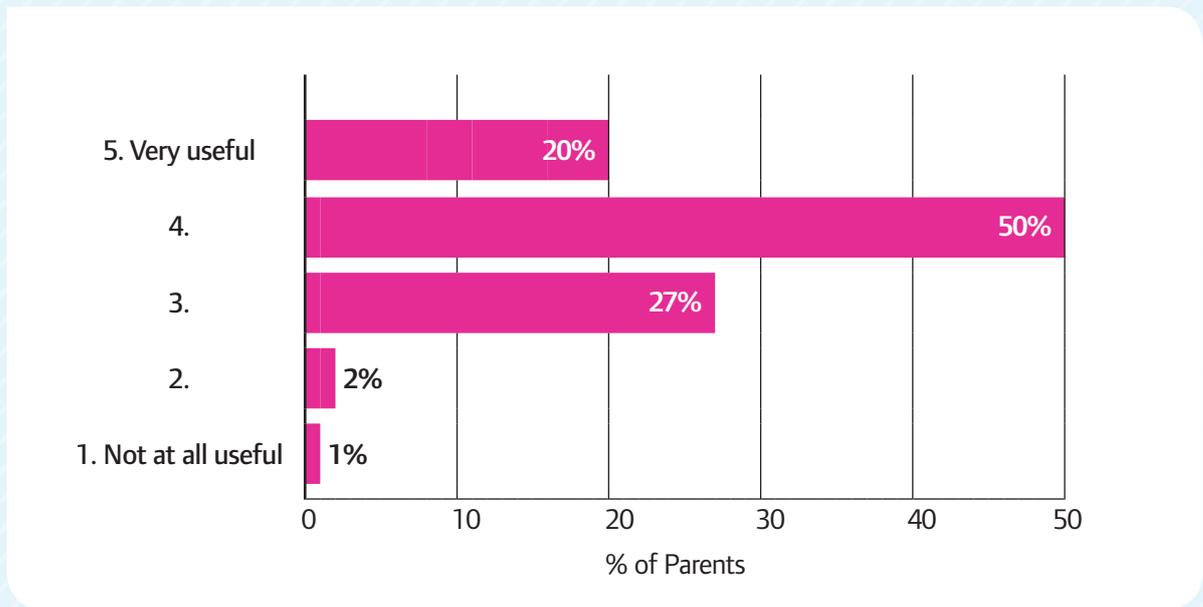


Figure 12. Parent responses to the question 'How useful was the session to you?'

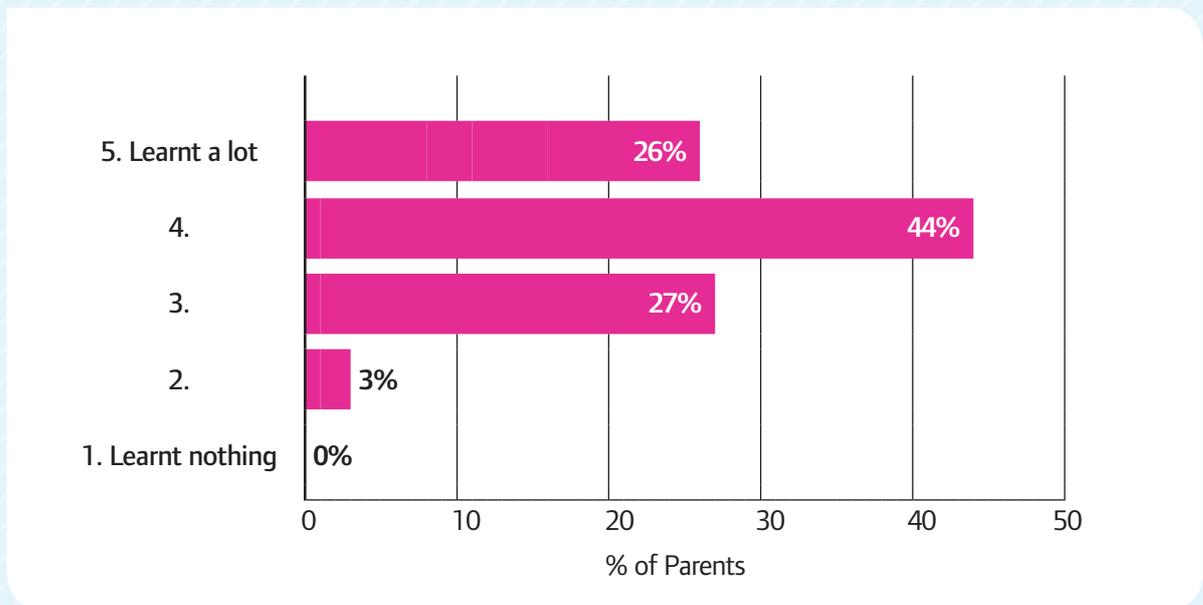


Figure 13. Parent responses to the question 'How much did you learn about the different careers that might suit your child?'

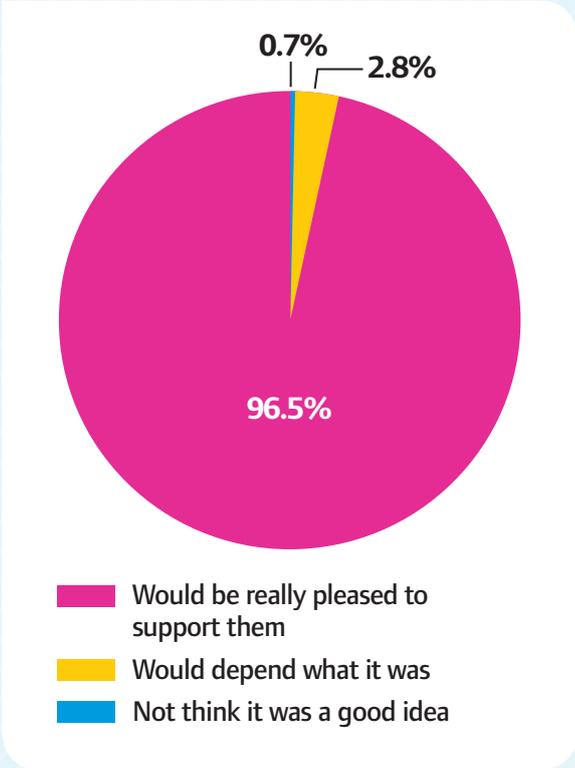


Figure 14. Parent responses to the question 'How would you feel if your child wanted a career in a STEM subject?'

Parents were also asked how they would feel if their child wanted a career in a STEM subject and the responses are shown in **Figure 14**.

An overwhelming 96% of the parents who attended People Like Me events would be really pleased to support their children if they wanted STEM careers. With this sort of encouragement, these girls are much more likely to succeed in their ambitions.

Parents/carers who attended People Like Me sessions with their daughters also commented on the same themes. Two aspects of the session were particularly popular with parents – the quiz and the role models.

The value of studying a science subject is much greater than I realised.
Parent/carer

Thought the talk was very inspiring. Especially liked hearing about your jobs.
Parent/carer

3.5 Focus Groups with Workshop Participants

Two groups of Year 9 girls (aged 13 -14) took part in focus group discussions after they had taken part in a school based People Like Me session. Overall, the discussions confirmed that the personality analysis and quiz was enjoyable and in general provided appropriate and insightful career guidance. In keeping with the questionnaire data results, several of the participants expressed an increased motivation to pursue STEM learning.

There were three main findings from these discussions:

I wasn't actually planning on taking a science but after today I think I might because I want to do something in film production and it was mentioned as good to have a science.

Focus Group 2

- a. Similarly to the findings in the questionnaire data, there was an increased awareness of the range of careers that were available to those studying a STEM subject. For example when asked whether anything about the workshop had surprised them, the following responses were typical:

I found it quite surprising how having a qualification in science wasn't just going to mean that you were going to become a scientist. You could go into various different careers such as law.

Focus Group 1

It surprised me how many different careers there are that you can go into from the STEM subjects. You can go into hundreds of different jobs just based on the STEM subjects.

Focus Group 2

However there was evidence that for those who did not feel confident about their science ability the emphasis on the importance of science for future employment could make them feel at further disadvantage.

There are loads of jobs that you think about... and then you don't really think about them having science in them. Then when you realise they have science in them, I am like... I am not very good at science, and it kind of put me off a bit. I don't really want to do them any more.

Focus Group 2

- b. Confirmation of the workshop delivery model. This included the importance of the presenter as role model and facilitator – for example:

I really liked the person doing it, she gave loads of different examples and she was very knowledgeable about all the different kinds of salaries and things. She was really good I think.

Focus Group 2

There was also feedback to suggest that the quiz activities are best supported in a group session where peer support is available rather than doing them alone:

With some of them it is quite hard to describe yourself so you have to get someone else's input.

Focus Group 1

- c. There was some concern about the quantity and relevance of the adjectives listed:

It was hard enough to find four. I was struggling after that.

Focus Group 2

I can't describe myself with only good adjectives, that doesn't go that far.

Focus Group 1

4. Evaluation Findings

4.1 Role Models

When asked if anything had surprised them during the session, some girls were surprised by the variety of careers open to them, but others commented on the lack of women in STEM careers. There is a careful balance to be had in how these messages are delivered as they may undermine the central message that STEM is indeed for 'People Like Me.'

I was surprised how little women do engineering.

Hardly any women work in the STEM jobs.

97% of men, 3% women in one job shown to us.

An important way to change perceptions of gender appropriate career choices is through role models.

a. Presence of role models in the sessions

Some sessions we heard about had included role models from industry at the event itself, who had participated in the workshop alongside the main trainer.

The girls and parents had to pick 3 of the 5 or 6 role models we had there, and they had to pick entirely on the types rather than any more details. It was not based on gender, it was not based on roles, it was entirely based on that - essentially personality type. What sort of scientist are you? And that worked well, that worked really, really well.

Deliverer

Where there were no additional role models in the session, the workshop facilitators are encouraged to talk about themselves, and this was often described as inspiring by girls and parents. They disclosed their own personality type from the quiz, and explained how that matches their job role.

In the longest type of session, usually a parent-child event, it is suggested that five or six role models are present. Meeting the role models was often one of the most memorable aspects of the session for girls, parents and trainers. In interviews, parents said:

The [women] professionals were really, really engaging and easy for the children to talk to and I guess admire really.

It was nice that they had the industry experiences - that was very positive!

Some of the deliverers felt that their sessions would be more effective if they involved role models with a range of personality types and job roles, so they would like information from WISE about finding role models:

The other thing that might be useful is if there could be a bank of role models.

Deliverer

Some networks already had access to role models, such as the STEM Ambassadors, and felt that WISE could help them connect to schools and companies.

If there was more dedicated funding, if there was a central person in place, I think that would make a big difference, or even if that became funding that was given to the STEM Ambassador hub so we had that additional time to spend on it... It's all there - we have all the information, we've got all the enthusiasm, and all the schools who would bite your hands off, but actually implementing it is the issue.

STEM Ambassador coordinator

b. Resources describing role models

Sometimes, pages from the Resource Pack were photocopied and given out, and ideally girls would be given examples of role models that had the same personality types as themselves. Some trainers who had not studied STEM subjects, but were working in STEM industries or university departments, wondered whether their own role had the same impact as that of an engineer or scientist, but comments from girls and parents were just as positive, indicating that it is personal connection and the link between personality and job that made the impact. Sometimes there was only one trainer, who spoke personally and used slides of other role models, and this was also received positively.

They were so interested and so keen to hear more and the STEM Ambassador that we had, she was really enthusiastic about it, told us all about the different things she had done and her career and how fulfilled she was in her career, and really encouraged them to think about it and that was, yes, really, really powerful - the most powerful of the whole thing!

Deliverer

c. Interaction with role models

Girls were asked on the questionnaires how sessions could be improved and some suggested they would like more time to talk to each other and to the role models:

It would be better if we could have longer with the role models.

It would be better if we had more time to discuss the jobs.

4.2 Language

There were mixed views about the list of adjectives which girls (and parents) use to describe themselves. Trainers reported that the quiz sometimes took longer than expected because girls needed help understanding and deciding on the adjectives that described them:

There were too many, which takes an awful long time to do and a lot of them are quite similar, and one thing I found quite surprising - I think it was different from when we did it at the practice - is they were taking it quite seriously, I suppose in terms of wanting to make sure they actually got the right answer.

Deliverer

Some girls found the adjectives difficult, and suggested having fewer words. Some parents also commented on the level of language used in the quiz, both adjectives and job titles.

Job titles need explaining: girls of this age may not understand what is involved.

Parent/carer

Trainers recounted that a few girls found choosing adjectives too difficult, saying that none of the adjectives described them. With experience, trainers evolved strategies to deal with this, such as suggesting that girls ask their friends to help, or asking them what they would like to be. This is an area where trainers could be better prepared.

The training programme includes a significant amount of time discussing unconscious bias, and this was mentioned by those who had attended the programme as having an impact on all their communication with young women. This is an aspect of People Like Me training that can have an effect beyond running sessions and could be a positive outcome for those who undertake training but subsequently do not go on to run any actual sessions.

Individuals who download People Like Me materials from a website will not have the benefit of the unconscious bias training. However, the Top Tips section of the Resource Pack includes examples of vocabulary and language which can put girls off STEM subjects, in the form of a list of 'dos' and 'don'ts'. Thus People Like Me addresses language issues in a valuable way, beyond the core assumption that girls articulate their self-identity with adjectives.

4.3 Range of delivery models and contexts

Sessions were run by a range of facilitators with different motives for getting involved. Although all would agree with the overall goal of encouraging more girls to consider STEM subjects, there were subtle differences in what they wanted to achieve through the programme.

As the People Like Me website makes clear, industry sponsorship is essential to the development of People Like Me. In return for the various levels of sponsorship, companies receive training sessions and the opportunity to develop a bespoke training pack containing their own job roles and case studies. This can be used to engage with local schools or other groups, raising the profile of the company and potentially improving recruitment in the long term. In interview, company representatives described how they hoped People Like Me sessions would give girls a broader view of their own organisation and the variety of job roles in their company. Some events were run for employees, either in the evening or on occasions such as 'Take your Daughter to Work' Day.

For some companies, involvement with People Like Me was part of a larger commitment and programme of interventions to encourage young people into STEM careers.

We have committed to talk about and promote STEM to more children and especially girls.

Company manager

However, some interviewees reported a lack of clarity about expectations following their training session and in some cases after the initial training there had been little activity.

Company training sessions were often initiated and driven forward by the enthusiasm of individual senior managers. Continued support or repeated training is therefore dependent on these key individuals, and changes in their roles can make support for People Like Me vulnerable. Senior managers told us they did not know how many of those who received training actually went on to deliver sessions in schools. The lack of ongoing support was identified as a weakness in the review of training (*Farenga, 2016*) and a refresher webinar was recorded in 2017. We have not been able to ascertain how widely this refresher training has been offered.

Training sessions have also been facilitated by organisations such as STEM Ambassador hubs, WISE regional hubs or STEM Learning. The STEM Ambassador scheme enables volunteers working in STEM to go into schools and other groups to encourage young people to consider STEM careers. Ambassadors are supported by a STEM regional hub and trained to deliver a range of sessions, of which People Like Me training can be one option. This requires employer approval, and some employers offer paid days on which to carry out volunteer activities.

The teachers we interviewed had been approached by trainers, and had been pleased to allow them to deliver sessions, in lesson time or at parents' evenings. As one teacher commented:

We are having massive difficulty recruiting girls into physics 'A' level and I'm desperate to try and resolve it, and also I notice that our retention in physics 'A' level isn't for the girls as good as I would like.

Teacher

Teachers referred to the decrease in careers advice in schools, which meant providing opportunities for young people to think about their futures are even more valuable than in the past. Schools also were able to post adverts and reports about their sessions on their websites and magazines, to demonstrate their commitment to girls and STEM to parents and the wider community. It has not been possible to determine whether teachers are downloading and using the Resource Pack independently, and it has not been marketed in a way that targets individual teachers.

University outreach departments have used People Like Me to raise the profile of their institutions and STEM subjects generally. Sessions have been run in schools and also sometimes at universities themselves, combining groups from several schools.

Individual trainers and teachers employed in STEM, particularly women, were often passionate about encouraging girls to consider studying and working in STEM areas, and they found delivering People Like Me to be an exciting and satisfying way of encouraging others to follow them.

4.4 Stakeholder Engagement

One of the features that became clear as we talked to different stakeholders about People Like Me is that it is often adapted by those who are delivering it. At the top-level WISE helps companies and industry sectors develop bespoke versions of the Resource Pack. There are eight versions listed on the website (BAE Systems, Digital World, Natural Gas and Oil, Electronics Sector, Network Rail, Physics, Apprenticeships and Construction) and two more being developed (Energy and Environment). This generates income for WISE and enables companies to meet their aims of raising their profile while encouraging girls into STEM.

Individual trainers and teachers spoke about adapting the slides for their own situation:

The teacher had spent maybe a good hour adapting the slides so they would suit the children that she had.

Session organiser

We gave them some real examples of people who are out there who've invented things across a variety of industries. So that's the material we put together. We based it largely on some of the WISE stuff which we augmented a little bit.

Trainer

This adds to the time involved in running sessions and demonstrates the commitment of trainers.

One existing network had incorporated the People Like Me resources into their own project on tackling gender stereotypes in schools, and had been using them with mixed groups of girls and boys. The use with both genders was partly a response to schools not wishing to divide children according to gender:

We've actually found that a lot of the officers aren't able to deliver the workshops in some schools as the schools don't want the genders segregated - we are getting a lot of backlash from the schools as they don't want the genders segregated.

Deliverer

It was observed that the quiz worked well with both boys and girls:

Boys and girls, it's an equal split - there were boys who didn't get on with it and there were girls who didn't get on with it.

Deliverer

We didn't find that girls were finding it easier than the boys were to be honest.

Deliverer

4.5 Delivery Model

Trainers who had led sessions were enthusiastic about the aims of People Like Me and the way in which this was achieved. In interview, one trainer described how well the ice breaker, to write with your dominant hand and then the other hand, demonstrated the idea that everyone has preferred ways of working that are comfortable and productive for them:

That kind of makes them go "Oh, this is why we are doing this".

Deliverer

All the trainers interviewed liked the quiz to determine personality types and the matching of those types to role models.

All the girls are really positive. They really enjoy it. They like speaking about it. They like that they've been given the attention.

Trainer

Virtually all the girls in the room went from not knowing much about it, to at the very least thinking this is something I might do.

Trainer

However, the training materials are mostly freely available online and there is some confusion whether anyone can simply download and use them or whether official training should be sought.

It is frequently the case that after an initial training session, those delivering People Like Me

are left on their own to identify schools or other groups where they can deliver sessions. Both company managers and individuals requested more help from WISE in this area:

I think it's a slight waste of their hard work and training and resources to provide the training and then leave everyone to their own devices because it's very difficult to find the time and go out of your way.

Trainer

It was suggested that the role model handouts could be improved:

...definitely better, smaller and punchier because they looked at them, I don't know, even I felt it was a lot to read!

Trainer

One trainer would have liked WISE to provide a paper resource to give girls to take home after the session, recognising that photocopying is not necessarily possible for schools or companies:

Actually for them to have something to take home. We did send it round by email and link but it does make a big difference to have it in your hand. And it's not always possible to print. I mean, we had about 60 girls, and all of the parents as well, and there wasn't enough for everybody to have everything, and so the printing cost is enormous.

Trainer

There were some who had experienced difficulties in managing the behaviour of girls and had relied on school staff to support them, and some felt they would have benefitted from knowing more about what to expect. For example, the response of some girls to the quiz was unexpected and they would have liked guidance on this:

Another thing to get from WISE is to get some guidance, as we have had to figure this stuff out. There is always somebody sitting there staring at a blank piece of paper - and it's happened more than once - and it's heart-breaking, as they sit there saying "I'm not one of these things" and you are like, "Are you not caring? Are you not friendly?" What are good answers to girls that are clearly in distress about this?

Trainer

5. Recommendations

Overall, the People Like Me initiative has been tremendously successful in gaining the interest of schools and companies, and in delivering interesting and thought-provoking career focused workshops to girls.

We outline below some preliminary recommendations based on the feedback we have received during this evaluation. These are intended to inform the further development of People Like Me into its next phase as a digital resource and to improve the sustainability of the initiative through uptake and sponsorship by companies.

Greater clarity about the purpose and scope of the People Like Me initiative would help going forward. On the one hand it has been produced as a resource for anyone to use and it is clear that it has been used effectively in many locations. However the financial model and relationship with sponsors/ funders leads to some confusion about roles and responsibilities and we recommend this should be clarified for next phase of development. While the development of versions of the training packs for different industry sectors is attractive to companies, this has also received some criticism as it has been seen to be too narrow. However we know that WISE is committed to ensure that all sessions are free for girls so there are no barriers to participation. Companies must therefore be seen as partners in the project as a whole.

5.1 Support for Trainers

While the refresher web sessions are very welcome, there is a need for some structured and ongoing support following the training sessions to increase the impact of People Like Me. The training was in general well received, but many participants did not have the confidence or the contacts or skills to approach schools to set up training sessions themselves.

More attention should be given to how the resource can be effectively rolled out using the trained trainers. One idea would be to develop some skills training in delivering sessions in schools, possibly within a virtual reality classroom setting.

Although the People Like Me website has a complete set of resources, and company packs are being added all the time, the original Resource Pack was written in 2015 and the data in the Powerpoint Resource about jobs and salaries is from 2013/2014. These should be updated so that trainers are providing recent information to participants.

5.2 Consistency of Messaging

While the core concept of People Like Me is well understood by most stakeholder and participants, we heard a number of critical comments about the way in which it was delivered, that inadvertently delivered mixed messages, for example.

- a. **STEM is best.** In trying to 'sell' STEM subjects, trainers can give the impression that they are criticising other career choices. The People Like Me materials are clear that the session is designed to open up options, but some parents felt that unfavourable comparisons were being made:

"Feeling that not doing science is failing – lower paid job prospect – bit early to specify this."

Parent/carer

- b. **Pigeonholing/locking young people into self-identities.** Care needs to be taken that girls do not go away with the idea that their identity, personality or attributes are permanent and unchangeable.

"The summary at the end of the activity felt

like it might pigeonhole girls a little (i.e. put your hand up if you're a ...)."

Parent/carer

- c. **Happiness.** People Like Me is described on the front of the Resource Pack as a resource to 'explore how girls are happy and successful at work', but what makes people happy and successful is subjective and context bound and therefore may vary considerably. Thus care should be taken in how the term happiness is used in the context of delivering the People Like Me sessions.

- d. **Focus on salaries.** Previous research indicates that economic factors can play some part in career decision making, and girls choices can influence the gender pay gap by excluding them from higher paid STEM occupations. However, some parents perceived this as success being equated with acquiring money, and felt this was inappropriate:

"This is a male world and the male perspective on success. And there was a lot of talk about success and money, and success and money seemed to be linked."

Parent/carer

Moreover the comparison of jobs and salaries should be handled sensitively to reflect the range of socio-economic backgrounds of the participants, and not alienate those from less advantaged backgrounds.

- e. **The marketing of People Like Me is confusing.** The materials can be freely downloaded from the website and other locations with the implication that anyone can use the materials to run a session. However, it is stated on the People Like Me website that *'It is important that training is sought before delivering the resource to girls*

as it is essential that the correct language is used throughout delivery of the resource'.

- f. **Girls only vs mixed delivery.** Most of the evidence we found was from sessions held at girls-only schools. It is obviously much easier for girls' schools to organise People Like Me sessions, but it could be argued that girls in mixed schools would benefit more. We found some schools that were reluctant to run girls only sessions.

"We've actually found that a lot of the officers aren't able to deliver the workshops in some schools as the schools don't want the genders segregated."

Trainer coordinator

We would recommend the use of People Like Me going forward to give consideration to producing a pack that can be used with mixed gender classes. The ASPIRE research that stimulated the creation of the original materials found evidence about a range of excluded groups, including low achieving boys as well as BME students.

The materials are currently being marketed and used in particular types of schools and settings, and we would recommend further research into how different demographic characteristics such as class, race, school type and geographic location impact on the success of the People Like Me sessions.

5.3 Engaging with Girls – Increasing Interaction

On the questionnaire, girls were asked how the People Like Me activity could be made better. The most frequent request (46 out of 110) was for it to be more interactive.

These comments were made both after parent-child events and the classroom session. Individual trainers do spend different amounts of time on the slides about STEM areas of employment and salary comparisons of different jobs, but there was a general view from girls that they would rather be learning actively than watching a PowerPoint presentation. WISE could consider presenting the same information in a more interactive way.

Some girls were clearly thinking about how to take this further, and requested either that there should be more information about specific jobs or consideration of a wider range of (non-STEM) jobs. This reinforces the recommendation in the Resource Pack that People Like Me should be used as one in a series of interventions.

5.4 Helping Schools set People Like Me in a Series of Events

The current model of training individuals and relying on them to contact schools and volunteer to run sessions, results in People Like Me sessions often being one-off events. Although the Resource Pack states that it should be part of ‘a consistent programme of enhancement opportunities’, WISE does not get involved in facilitating this. One teacher stated:

“My criticism of it would be, is the girls love it and it does open up their thinking to other things, and they really enjoy it, and then that’s it – it’s not followed up in any way.”

Teacher

However another respondent felt that the power of the People Like Me session was lost because the schools where it was delivered regularly ran STEM engagement activities and this was seen by pupils as just one other version of the same thing.

“It’s not a comment on the resources, it’s just more on where we are at with general outreach stuff to be honest! The indifference there wasn’t caused by anything to do with the work, it’s specifically ‘Oh god it’s another STEM session’ – you could see it in their eyes!”

Trainer

Various organisations that provide other STEM interventions in schools, have incorporated People Like Me into their programmes, and there is scope for WISE to co-ordinate further with organisations already working in schools, such as associations of subjects teachers or careers organisations. This could help schools follow up the session and make it more effective.

5.5 Keeping Track of Events and Impact

There is not currently a central database or online list of those who have received the training. Trainers are encouraged to feedback their activities on the website but it is unclear whether this is capturing all events. If there were to be a central database this could also be a useful addition for schools who want to look up a local trainer to come to their school or event.

5.6 Companies and Sponsors

The cost in time and money for training is beyond the resources of many schools, and also companies. One company manager said:

“I thought the training, the actual training of the pack required 3 hours of face-to-face training. That, I think, could be modernized. I don’t really think it requires 3 hours of face-to-face training.”

Company manager

One option would be for WISE to make the refresher webinar available on the website as an alternative training resource. At present, the expectation that those delivering People Like Me will attend a face to face training session is a barrier to its more widespread adoption, particularly by teachers, and mixed messages are being sent out. If WISE aims to encourage more teachers and others to use the resource from the website, a significant marketing effort could be made through teacher associations and other educational organisations.

Sponsors have benefitted from the production of bespoke packs and training sessions for their staff, but have also experienced the lack of ongoing support highlighted above. Some sponsors felt that they were expected to do more development of the packs than they had anticipated, so expectations of the benefits and responsibilities of sponsorship should be made much clearer. This is relevant to future developments such as the digital version.

It was really wonderful to use the resources and stretch it beyond what it was originally intended for so I think the resources are a lot more powerful than they had originally been advertised as - I think more so than something to do with getting girls into STEM - I think it's actually more a wonderful way to actually talk about the breadth of subjects and breadth of opportunities within STEM.

Training coordinator

6. Appendices

6.1 Student Questionnaire

People Like Me – Student Questionnaire

We want to find out what you think to help us improve this activity.

Your age:

Your school year group:

Tell us the top three types you got in the quiz today, and tell us (out of 10) how happy you are with that description of you (10 = very happy, 1 = not at all happy).

1. out of 10 2. out of 10 3. out of 10

Please circle the number or answer that is closest to what you think:

1. Thinking back to before you did this activity, how did you feel about studying science and maths at school?

I wasn't at all interested

I was a little bit interested

I was very interested

2. On a scale of 1 to 5, how useful was the session to you? (where 1 is not at all, and 5 is very useful)

1

2

3

4

5

3. On a scale of 1 to 5, how much did you learn about the different careers that you might like to have? (where 1 is nothing at all, and 5 is a lot)

1

2

3

4

5

If you learnt something, or something surprised you, tell us what it was:

4. What three words would you use now to describe jobs that use science, technology, engineering and maths (STEM)?

5. How do you feel now about studying science and maths at school?

Still not that interested

I was interested before and I still am

I am more interested than I was before

6. The activity would be better if...

7. Is there anything else you'd like to tell us about the activity? (turn over if needed)

Thank you

6.2 Parent Questionnaire

People Like Me – Parent Questionnaire

We want to find out what you think to help us improve this activity.

Please circle the answer that is closest to what you think:

1. What are your own views on science, technology, engineering and maths (STEM)?

I am not interested

I am a little bit interested

I am very interested

2. Do you work in a job that involves science or technology?

Yes

No

Not now, but I used to

**3. On a scale of 1-5 how useful would you say the session was for you?
(where 1 is not at all, and 5 is very useful)**

1

2

3

4

5

4. On a scale of 1-5, how much did you learn about the different careers that might suit your daughter/son? (where 1 is nothing, and 5 is a lot)

1

2

3

4

5

If you learnt something specific, or something surprised you, tell us what it was:

5. How would you feel if your daughter/son wanted a career in a STEM subject?

I would not think it was a good idea It would depend on what it was I'd be really pleased to support them

6. Was there information you wanted to get, but didn't receive at this session?

7. Is there any other feedback you can give about the activity? (continue over)

8. We would like to follow up on your views as part of some research into this scheme. If you'd be happy to be contacted further about this, please leave your email or a contact number below:

Thank you

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WISE

campaign for gender balance
in science, technology
& engineering

WISE
Leeds College of Building
Hunslet Campus
Cudbear Street
Leeds
LS10 1EF

T: 0113 222 6072
E: info@wisecampaign.org.uk
www.wisecampaign.org.uk

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