

Contributor Report /2014



What they say about what you do...

“Over the past two years TeenTech has had an overwhelming impact on how our subject is viewed by both staff and pupils in the school.

Their perception of our department (Design and Technology) has changed from somewhere pupils build projects from wood and metal and do engineering drawing, to a department who encourage pupils to be innovative by looking at technology and how things work, to help meet the needs of a particular market group.

They are beginning to view us as an Engineering subject once again and it has had a direct effect on the uptake of our subject in the senior school ... Our pupils have seen they have what it takes to become an engineer and where our subject fits in helping them achieve this. They have reached this conclusion through all of their experiences throughout the (TeenTech) process and I think that one of the most important things is that they have enjoyed every moment of it.”

Karen Kelley, Teacher, Scotland

*“I loved the chance to talk and meet real scientists and engineers who had amazing jobs! It was really cool to meet representatives of the companies and learn more about what they do. I also really enjoyed the challenges and activities because they related to the companies and were really fun! **Student, Kent***

“Events like TeenTech City provide an experience that is hard to reproduce in the classroom and really gives pupils a taste of what having a STEM career could be like. It is great to be part of something that really pushes the importance of technology subjects out to young people in such a fun and engaging way

Ms Hong Tang Design and Technology teacher, Bishop Challoner Catholic Collegiate College, London

We have over 130 young women involved in extra-curricular STEM activities! TeenTech has a MAJOR part to play in this. I spoke to the students about why they love TeenTech. They love the fact that they can discuss ideas and work collaboratively, letting their imaginations run wild without the restrictions that occur in lessons. They deconstruct everyday electrical equipment, creating better ways to make them function. They understand that being part of TeenTech is helping to improve their self-confidence. They are able to explain their ideas to a variety of people and they are listened to! They know they

are an influential group within school! The girls in Year 8 have watched the success of the older students involved in TeenTech, and whilst the taking part is very important, we are a VERY COMPETITIVE SCHOOL, and the younger students want to be part of this success.

***Liz Painter, Assistant Curriculum Leader - Science
Sandbach High School & 6th Form College***

We had an amazing day at TeenTech Surrey. I learnt an absolute shedload, and it really has actually affected the outlook on some of my work. I've raved about it to the Head of Science at Hinchley Wood School. Ambassador, Surrey

Thank You.

Thank you for supporting the work of TeenTech and the TeenTech Awards in 2014. TeenTech and its success belongs to you.

We want you to feel very proud of everything we have achieved together this year. TeenTech is very special as it's a genuinely collaborative movement. We create strong partnerships, so the initiative can run in regions where it is most needed. Events have their own steering groups to deepen regional connections and we provide ongoing opportunities for teenagers, teachers, apprentices and young graduates.

We work closely with and listen to employers of all sizes to better understand their needs and help them build engaging activities to capture the imagination not only of teenagers but all visitors to our events. Together we are building a supportive, vibrant and inspiring structure so students and teachers can take new-found interests further, culminating in the brilliant student-led projects showcased at The Royal Society and Buckingham Palace. You are nurturing the innovators of tomorrow.



Above: TeenTech events 2014 our live map is [here](#)



Above: TeenTech Award registrations 2014/15 our live map is [here](#)

Where we are working ...

In 2014 large scale TeenTech events ran in South Yorkshire, East Midlands, South Wales, North Wales, Hampshire, Humber, Staffordshire, Kent, Bristol and the West, Surrey, London and Manchester. We did this with the support of our committed partners, sponsors and supporting organisations. Over 240 different companies are now working with us to create those lively, engaging activities and investing their time, talent and industry knowledge into making TeenTech a stand out experience for every teenager and every teacher who participates. We are deeply grateful.



Joining us for 2015 will be Galway and Portsmouth and we also are in discussions with organisations in Birmingham, Glasgow and Newcastle as we have had repeated requests from schools to offer TeenTech in those regions.

Feedback from teachers consistently indicates the effect on students is powerful. They describe the long term impact on students who



participate in strong well thought through activities delivered by well briefed people from industry. They appreciate the opportunity for students to take forward their enthusiasm into the TeenTech Awards and say this not only impacts the students who attend but 'spreads like a bushfire through the whole school'.

The quality and variety of the experiences and interactions is constantly referenced in emails and our Survey Monkey responses.



The TeenTech Awards are one way we have been able to scale the experience. We now have over 200 schools across the UK running the Awards, with numbers doubling for 2014/5. When we began in 2012/3 schools entered one or two teams. In 2013/4 we saw a number of schools

begin to run the Awards across entire year groups and this year many schools are entering 12 teams after running internal competitions. In a very gratifying way, schools that participate continue to do so and as evidenced in feedback, they credit TeenTech with transforming the perception of technology and engineering both as school subjects and as potential careers. We have grown the awards carefully so we always have enough mentoring companies and universities to support schools.

As many of you will know, we also run events for teachers. Our most recent TeenTech Teachers event ran at BBC New Broadcasting House in November and highlighted the opportunities in digital media, particularly those for apprentices. Many teachers who attended had been completely unaware of this route into broadcast and shared our

presentation when they returned to school. If you would like to host a TeenTech Teachers event, please get in touch.

Our CEO, Maggie Philbin was asked to lead the UK Digital Skills Taskforce which produced an interim report '*Digital Skills for Tomorrow's World*' in July. This was done with the invaluable support of many TeenTech companies who provided fresh insight, data and ideas. The report has been well received and we have seen many of our recommendations being advanced not only across political policies but also by companies and outreach organisations. TeenTech have been asked to input and gather further data for the House of Lord's select committee on digital skills. The final report will be published in Spring 2015.

TeenTech were also commissioned to plan, curate and deliver the first day of Digital 2014 for the Welsh government. To support this we ran workshops in schools which led to young people producing their own 'Digital Charter' signposting their needs and we then asked companies who attended the June conference to sign written pledges to offer quality work experience and better communication of the roles in their digital industries to help students take advantage of opportunities. This work for Digital 2014 has been nominated for awards.

We very much hope you will join us for many of our 2015 events. We will have some exciting news to announce in Spring 2015!

Below you will find the hard stats on 2014 but we've also brought together qualitative feedback from the online surveys run post event so you have insight into the impact you are making.

2014 The Stats:

12 large-scale TeenTech events

4000 mixed ability students and **490** teachers from **380** schools attended our events. (10 students invited from each school. Some schools asked to bring two groups when a school dropped out)

50% male/50% female students

Attending students then created assemblies, news reports and webpages amplifying the reach to at least 40,000 more students

In 2013/14, **1000** students from **120** schools made Stage 1 entries with **80** schools progressing full scale projects to Stage 2 for the TeenTech Awards. The average number of team entries per school was 3 (with up to 3 students per team). In 2014/5 we will also collect accurate data on the number of students per school who participate before schools select the projects which go forward to Stage 2.

In 2014/5 **189** schools have already registered for the Awards. The average number of entries per school is 4/5 with many schools entering all 12 categories.

We believe the impact of mixed gender events outside school is powerful, as both genders see how well girls perform in the 'on the day' challenges. This seems to have an impact on the number of girls who subsequently participate in the TeenTech Awards.



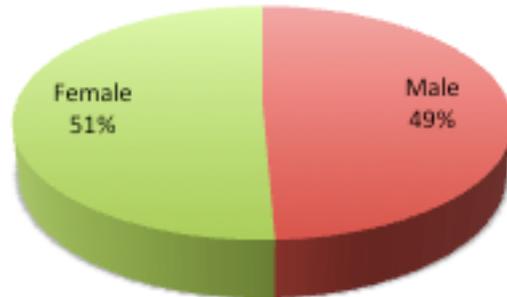
We know that teachers re-assess the ability of certain students when they see them emerge as leaders, communicators and team players. Their imagination and tenacity shines through.

The number of girls participating in the final of the TeenTech awards was noted by judges from the Wellcome Foundation who asked how this had been achieved.

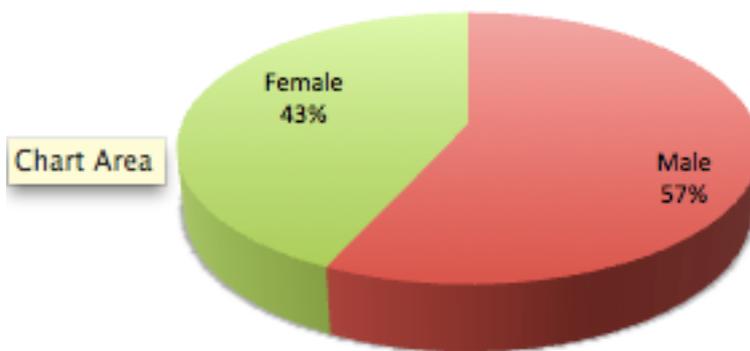


The answer was there had been no 'engineering' of the entries but that the structure of both our events and the competition, and the encouragement offered by our company exhibitors and mentors through the whole process appeals to and motivates girls.

Gender of students submitting Stage 2 projects

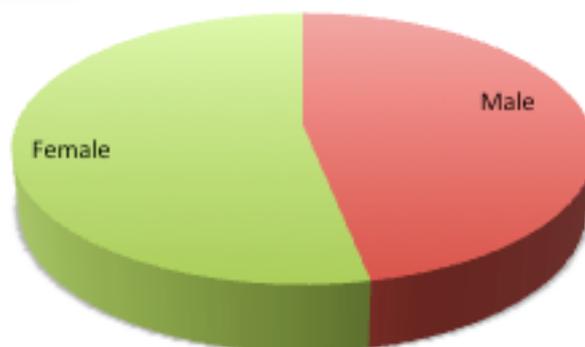


Gender of students reaching final



Gender of students in winning teams

Chart Area



Feedback on events:

100% of the companies we worked with in 2014 say they 'definitely' want to work with TeenTech in 2015

99.5% of teachers say they will 'definitely' bring students to another TeenTech event. Two teachers said 'Maybe'. No teacher responded with 'No'



Impact on perception of careers in contemporary industry

At the beginning of the day we use voting buttons to measure the impact of the day. The results below are the average results across all 12 2014 events with the exception of the question on technology which was asked at 6/12 events. The students are mixed ability and in Year 8 or Year 9.

On arrival at 9.30 am

55% say they are 'fairly or very interested' in a career in Science

48% say they are 'fairly or very interested' in a career in Engineering

58% say they are 'fairly or very interested' in a career in Technology

At 2.30 pm

73% say they are now 'fairly or very interested' in a career in Science

70% say they are now 'fairly or very interested' in a career in engineering

76% say they are now 'fairly or very interested' in a career in technology

Teachers report a significant increase in their own knowledge and many display an intention to integrate their learning into lessons for all students. Again the figures below are the average across all events.

92% teachers say the event has increased their understanding of STEM careers (At 6 events this was 100%)
72% teachers say they will disseminate information within their school
(At 3 events this was 100%)

One of our goals for 2015 is to ensure all teachers understand how to use information and ideas from the event back in their own school. We hope all partners and regional companies; as well as national companies will support this activity. If you have not already done so, we would ask you to send us links to supporting materials for the classroom or links to careers information on your website. Please send these materials to polly@teentechevent.com

Students themselves have become powerful ambassadors for Science, Technology and Engineering - leading and inspiring their peers. Teachers have described the TeenTech effect as 'spreading like a bushfire' through schools as students share their enthusiasm and younger students witness their success.

Here is some of the feedback from post event surveys.

What do teachers enjoy about your work at TeenTech?

'The diversity of activities, the breadth of careers and sectors represented'

'The vast array of activities provided for the students to take part in'

'On the stands there were great presenters with very clear and engaging explanations'

'It was fantastic to watch students finally "get" the point of studying STEM subjects'



‘On the stands there were great presenters with very clear and engaging explanations’

‘Seeing the students fully engaged with learning about new ideas and/or technology throughout the day and having huge fun working as a team. The opportunity for the boys to be creative in the afternoon was perfect, after seeing and experiencing so much before lunch’

‘All of the contributor's were so enthusiastic and ready to answer any of the questions both I or my students had’

‘The amazing exhibits of the work of all the different companies’

‘Loved the range of activities and competitions. Ambassadors assigned were apprentices who were polite, informative and open with our pupils’

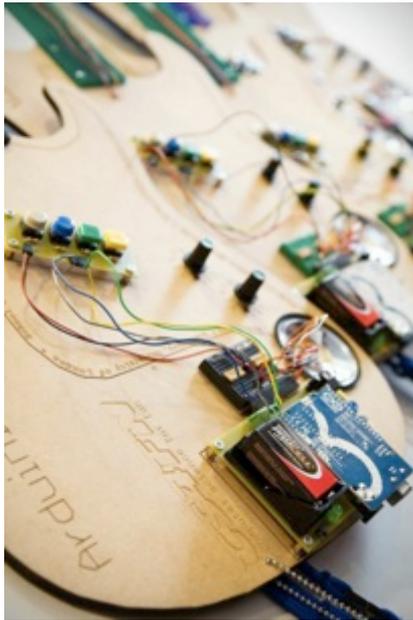


“The variety of activities, the enthusiasm of the participating companies, the space the students had to work in, the organisation. I like the way the teachers have to do the App activity like the students. It made us very competitive!”

The Interactive challenges from companies were awesome, my Students learnt a lot from them.’

“The variety of activities and meeting employers”

‘Everything! Such a fantastic day (for teachers as well as students) Lauren our ambassador for the day was fantastic, we really enjoyed working with her’



‘The variety of science careers that were available on the stands and the fantastic competitions available throughout the day. All the ambassadors and company representatives were great for the kids to talk to about their daily work, and school career paths’

Excellent ambassador that was teamed with our pupils. Incredibly knowledgeable and keen to share that with our pupils’

‘There was a good range of activities for the pupils to take part in, this kept the pupils engaged all day. The companies were

more well known than I thought they would be!’



All of it! The activities were very interactive and all of the volunteers seemed extremely interested and enthusiastic. I had an email from a parent that night, thanking me for taking students because her daughter came back raving about robots, diesel engines and the environment!’



‘We liked how they worked independently away from the teachers (during the app/game activity) and how they were given a structure to aid in designing’.

What do the students say?

“I always wanted to be a dentist or a doctor but now I’m thinking of engineering and technology a lot more” **Student, TeenTech Surrey**



It helped me to think about the future and whether any of those areas are right for me. It opened my eyes to areas of work I had never thought about before and even some I didn't know existed! It really made me start to think about my future!
Student, TeenTech West

“The activities were fun and I learnt a lot more about different companies and how they use science to do their work” **Student, Kent**

“At first I wanted to be a lawyer but now I want to be a game designer!” **Student, Kent**

The different activities and people. The jobs were interesting and I enjoyed listening to what people were saying about there (sic) jobs.
Student

I enjoyed the one where we had to create are (sic) own video-game because it made me think of what a video-game should include and how it works. **Student**

I enjoyed when we had to build a type of shelter. In our group, we made a house but we couldn't get the roof on properly



What do the companies and ambassadors say?

'We loved the school pupils & staff involvement in the event and our activity. They clearly wanted to be there and this showed with the enthusiasm in which they took part'.

'The enthusiasm of the pupils - we only had two for the whole day who didn't fully engage'



'The excitement of the children as they approached the challenge was much higher than I was anticipating, and their different ways of solving the challenge we put to them was rewarding to see'.

'The engagement in creativity was very exciting to see within a science & tech environment - was great to knock stereotypes in STEM industry'

'I was surprised by the involvement. Particularly good was fact that only 5 of them were at the stand at a given time, so there was plenty of time to talk to each one of them and let each one of them do hands-on activity. Questions were really interesting, not only from students but also from teachers'

'The enthusiasm of the students and their confidence to communicate with us, ask questions and discuss what they were doing'

'It is so amazing to understand how creative and quick thinking some students are. Understanding also that others lack that ability shows the great deal of job tutors face'

'Understanding the diverse background and value of opportunities available for future career opportunities'.



'I would like to participate in being an ambassador in similar events. It's a very fun yet rewarding job!'



'In contrast with adults, teenagers think in a simply easy way, without complexities, worries or anxiety... they just try and do whatever they can.'

'Meeting so many engaged and excited students'

'Lovely interactions - students were always polite. Some were much less confident than others and some school groups asked far fewer questions. Really impressed by the space knowledge of some groups and individuals who really knew their science'.

'There was so many things were "hands-on" This is a great way to engage students, as well as a more exciting way they can learn about STEM subjects.'

'Just seeing the kids getting stuck in and inspired. Seeing one girl in particular excelling at a particular task, and it totally opening up engineering as a potential career for her.'

'I was really inspired by the day. I loved it. And I was really impressed with how engaged, smart, and enthusiastic the kids were. I think that was very encouraging'



'Surprised how enthusiastic and knowledgeable they were. What happens between then and when they start work with us?'

'I haven't been around teenagers for quite a while and it made me remember how imaginative they are. Watching these experiments through their eyes felt really refreshing'

'Seeing the happy faces of the kids throughout the day. Also seeing how much the apprentices who volunteered to support the event, enjoyed it.'

It reminded me how bright some students are and we need to find a way to nurture the brightest without making the remainder feel like failures or 'also rans'. Ambassador, Swansea

'I was surprised how interested the students were, they seemed genuinely interested and were happy to chat about STEM subjects and careers. Some students particularly impressed me; one of them was programming and making apps at home for fun'

'No real surprises, were some nice questions delving into what life is like for a real scientist'

'This was our first experience of seeing TeenTech and what it was about. Was excellent to see the scope of activities provided.'

'Good to see the live voting. Meeting the home schoolers was a privilege'.

'Conveying enthusiasm about engineering to the young people and helping them to connect what they learn at school to see it applied to engineering projects and products.'



day'

'The organisation. The way that the kids are brought round in groups and are led by an ambassador from industry. I think this is a really good way to keep the kids focused and also give them plenty of opportunity to ask any questions they might have, to number of people throughout the

'The chance to encourage our own young people to plan, design, and deliver something to challenge and inspire other even younger people.

And watch it work out so well.'

'Seeing the children change their attitudes from uninterested to engaged and quite excited particularly in the Challenge Zones and Innovation, Design an App Zone' – Ambassador, Hampshire



'I thought it was good to take the teacher away from the tables to do their own APP. It forced them to think for themselves.'

'Some of these year 8 students already have an amazing technical mind and brilliance about them. I think I may need to up my game in terms of today's technology in so many areas, as they clearly know a lot!'

'Being able to provide an activity which allowed the students to solve a problem, work as a team and learn about a topic they wouldn't ordinarily think about.'

'It is telling that they understand so little about STEM based careers, and since the media don't do it, it needs the teachers to be aware. Some teachers seemed surprised when I told them the salary levels for engineers etc, and told their pupils that it was much higher than their salaries. Why don't they know this?'



'I found the most surprising element was the Q&A that the students undertook at the start of the day and then at the end. This really highlighted the impact of the day and highlights the need for such events.'

'Demonstrating the stand was really good. Involvement of school was really nice and particularly good was fact that only 5 children with a teacher were near the stand, so it was nice contact with all of them!'

'It was interesting to gain insight into the opinions of children on what the typical construction worker looks like and does and then to see how engaged they were when they heard how much an apprentice

earns'

'Quality conversations with students'

Feedback on the TeenTech Awards 2013/14

As a team we have learnt how to work effectively, work under pressure, overcome obstacles, work within a time limit, think in an innovative, commercial and creative way.

Students, Bethnal Green Academy, London

TeenTech and the TeenTech Awards have had a transformational effect on our Design and Technology department. Not only were participating students inspired but the effect was contagious with entire year groups and teachers wanting to join in. You can spot the students who've taken part in the TeenTech Awards, their approach to GCSE Design and Technology is in another gear.

Lisa Wilde and Russell Bramhill, Teachers, The Hayfield School, Doncaster

We have now understood the technical side of our product and all of the engineering side and programming side, we have had to learn a lot of hard engineering in a short space of time. This has helped us to develop our skills and our understanding of the topic.

Students, Loreto Grammar School

As a result of the TeenTech Awards we've learnt designing isn't a quick process of coming up with an idea and turning it into a reality but it's also about research and prototypes and perhaps completely changing your idea if it doesn't work. We have both been inspired by this process and want to develop our skills in this area and maybe even become engineers or experts in related professions in the future.

Students, The Holt School

We have learnt how technology can change people's lives.

Students, Ridgewood School

This is the best innovation and enterprise award scheme in the country. Thank you for allowing young people to develop their ideas.

Kathy Mackay, Teacher, Birkdale School

During the TeenTech classes we have had to make a few hard decisions and we've had a few minor arguments, all of which have been swiftly

sorted out by a civilized vote. Coping with the arguments has actually helped us bond, as we can be nicer to other people as we have learnt social skills. We learnt a lot about teamwork, communication skills and creativity (thinking outside the box). We think that these are all important life skills that we wouldn't have learnt if we hadn't been involved with the Teen Tech scheme. **Students, Park House School**



We learned a lot about new technologies that haven't been in use in society such as algae cleaning the air and collecting energy from leftover sound. This task has taught us to work more efficiently as we are restricted to a deadline. As a team we had to delegate who would work on what role, to ensure our strengths would be put into full effect and our weaknesses would be ignored and helped by the other members of the group. **Students, The Costello School**

We have learnt a large amount of skills from TeenTech, for example we have learnt business skills through market research and advertising. **Students, Mulberry School for Girls, London**

In Teen Tech, we have had a great time. We have learned many things, including information about electric circuits and how to calculate power from current voltages for our roundabout project. We've also learnt the importance of research and collaborating with experts as through this, our project became more detailed and gave us evidence that it would or wouldn't work. **Students, Richard Lander school**



"The use of different sciences in this project is one of the main reasons I am going on to study Biology and Chemistry in my A levels next year. I just feel that science is a fun thing to learn." **Student, Hampton Academy**

"Researching the different aspects of the coolant system have helped me with my Physics and as I will be doing Maths, more specifically mechanics, at A levels. This project has been perfect for me." **Student, Hampton Academy**

A big thank you to our sponsors and partners

TeenTech owes a huge amount to the organisations who provide vital support for our work.

Thank you to Humber Education Business Partnership, Airbus, Basingstoke Consortium, Kent EBP, SATRO, University of Manchester and Staffordshire County Council who partner to deliver TeenTech.

Thank you 2014 National Sponsors CPC, Google, EDF and National Grid

Thank you 2013/4 TeenTech Award sponsors Airbus, Atkins, CPC, Cranfield University, Equal Experts, Google, HP, JVC, National Grid and OCR

Thank you EDF, National Rail, Maplin and Symantec who have joined us as TeenTech Award sponsors for 2014/5.

Thank you to Google, Symantec, Goss, Cosmic, BT, Michelmores, Plymouth University, Samsung, Accenture and Telefonica who sponsored the research and roundtable events for the UK Digital Skills Taskforce

Thank you to Airbus for sponsoring TeenTech North Wales and TeenTech West.

Thank you Efficiency North, Cementation Skanska, Futureworks, HelpLink and Pegler Yorkshire for sponsoring TeenTech South Yorkshire

Thank you De Montfort University for sponsoring TeenTech **East Midlands**

Thank you Basingstoke Consortium, AWE, Sony, Hampshire County Council, Blatchfords, De La Rue, Fujitsu, Air Products, Sainsbury's, Smart Media, VISA, Enterprise M3, Angel, QM College, Vitacress and Fyffes for sponsoring TeenTech Hampshire

Thank you Humber Education Business Partnership, University of Hull and East Riding Council for sponsoring TeenTech Humber

Thank you to the Academy of Science, Welsh Government for funding TeenTech Cymru

Thank you to City of London, BMC, City University London, Queen Mary's College, London, Hackney Council, Thomson Reuters and Bloomberg for sponsoring TeenTech City

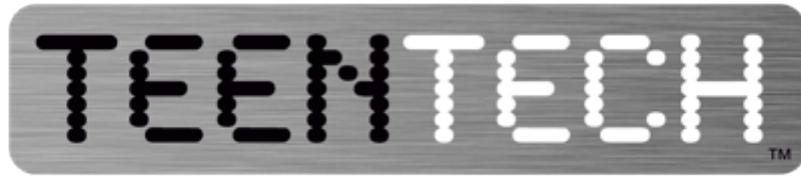
Thank you to University of Manchester and Manchester Met for sponsoring TeenTech Manchester

Thank you to EBP Kent, Cummins and Lloyds who sponsored TeenTech Kent

Thank you to Entrium and Staffordshire County Council who sponsored TeenTech Staffordshire

Thank you to SATRO, CBS Butler, Surrey Connects, Enterprise M3, IoD, Alliot's, Surrey County Council, Cold Fusion, Guildford Borough, P&G Community Matters for sponsoring TeenTech Surrey

Thank you to the Royal Academy of Engineering who sponsored our training workshops for companies new to TeenTech so they could hit the ground running with strong activities.



awards/2015