

Schools Engagement: key themes from the 2017 Wellcome Trust International Engagement Workshop discussion

Encourage New Careers

One of the most common aims of engaging school students is to encourage them to pursue a career in science. However, for many children and their parents an interest or aptitude for science means one thing: become a medical doctor.

It is often felt that becoming a doctor will bring personal economic gain and for many getting out of, or staying out of, poverty is a key priority.

"This whole idea of becoming a medical doctor is like a cancer in the country [Zimbabwe]"
Frank Muzenda, Next Generation Biomedical Scientists, Zimbabwe

Students also often base their career choices on a career path within their family, or paths that they are otherwise familiar with, like the army.

So how can engagement practitioners present other career options as viable to students and, just as importantly, get the buy-in of parents who may have other aspirations for their child?

Inspire the Students

Exposing young people to the career options available, broadening perspectives and inspiring them with activities to show the excitement and usefulness of biomedical science is a good mechanism for encouraging careers in science. This can include presenting the business advantages of a research career with sessions on business planning, patenting and networking with investors to show the financial potential of the career.

"Our problems are our wealth"
Abraham Mamela, Infers Studios, Botswana

Engage the Parents

Engaging the students alone is not enough. Parents are influencing their children every day, and may have had aspirations set for them from a young age and years of engagement to encourage it. It is key to involve parents in the activities be it by encouraging the students to engage their parents; organising showcases of student-led projects for parents; having career days and presentations about career paths specifically for parents; or introducing parents to real people in the field who have been successful in a science research career.

Provide Role Models

Presenting students and their parents with role models - scientists from a similar background who are doing well financially through a research career - can open doors and give confidence in the careers that are being offered.

Don't forget Jobs that don't Exist Yet

Some of the careers that might be encouraged might not yet be available in the region the school is in, and with the rapid advancement of science and technology they may not exist anywhere yet. So how do you encourage students to pursue them? For the former it was posited that science should be presented as a global endeavour. It may not be a career that is available locally, but that does not make it out of reach.

Beyond Careers

Beyond careers, engagement with health research is essential because it teaches children what it means to take care of themselves, with topics like drug adherence, and gives them the tools for better decision making about their health and the health of those around them. It also teaches them that science is not an alien activity taking place in labs but part of life - individual and social.

Cultural and Religious Issues

For some, the association of scientists with atheism is an issue in encouraging children to engage with science, and especially take up careers in it. To help with this it is important that young people, and their parents where possible, meet scientists from their local area who have a similar religious and cultural background to them to show that scientists can uphold their cultural and religious beliefs and swage any concerns about the impact a career in science may have on their faith.

Competencies

A guide does not seem to exist on developing activity content based on the competencies that are seen as essential or desirable for students to have. Guidelines on schools engagement should in theory be led by the competencies we are trying to cultivate in the young people - for example creative thinking or teamwork - but these are not made explicit anywhere. To define and agree upon these competencies, and create guidance for schools engagement that leads from them, more work is needed on extracting key competencies from a range of case studies.

Resources for Hands-on Activity

For some schools the resources for activities, like labs, do not exist. Suggestions to overcome this and allow children attending these schools to experience real science included running activities where the students themselves develop models that the school can then keep and, with buy in from ministers, building shared spaces with these facilities that several schools in a region can share.

Simplifying Complex Information

With any science activity or demonstration some simplification is needed. But how much is too much?

The panel agreed that in many cases whether the science is right or wrong is not the most important factor as most of the aims of the activities mentioned were around stimulating interest and excitement. Especially at the start of an activity the most important thing is to make it compelling by having a hook. This hook can be a fun demonstration, or a social discussion about issues that affect the group in their everyday lives. The science can be added in with increasing layers of complexity once the students are drawn in and committed to the subject.

"You can get across the most complex theory in the world, if the person is desperate to learn it doesn't matter how complicated it is"

Imran Khan, Wellcome Trust, UK

This content forms part of the online report for the 2017 International Engagement Workshop "It's Complicated: navigating scientific complexity in public and community engagement". To read more visit the [schools engagement and hands-on science theme](#) or access the rest of the report on the [workshop page](#).