

citizEd Conference Report

'Citizenship and Sciences Education'

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Museum of Science and Industry in Manchester

24th November 2004

This conference was jointly organised by citizEd and the North West Science Learning Centre and was open to all those involved in citizenship and/or sciences education. Keynote speakers included Ralph Levinson from the University of London, Institute of Education and workshops were led by a varied team of experts in the field representing, among others, the Wellcome Trust, the Catalyst Science Discovery Centre, ActionAid, the Association for Sciences Education, Tower Hamlets Humanities Education Centre and the Museum of Science and Industry in Manchester.

The conference addressed issues ranging from recycling projects to stem-cell debate days and HIV/AIDS education. Participants were given the opportunity to learn about successful citizenship and science collaborative projects across the country and further explore cross-curricular approaches to furthering teachers' and pupils' understanding of the ethical questions that underpin citizenship and science.

The conference attracted 69 participants and contributors including ITT providers representing 8 HEIs, citizenship and science mentors, citizenship and science trainees, a research fellow, Community Service Volunteers and various NGO education officers.

The day began with an inspirational talk from **Ralph Levinson** (London University Institute of Education)

Ralph's talk took a typical rather dull science topic (the extraction of aluminium) and argued that the textbook exam-oriented way of telling this story leaves it completely inert to any application for citizenship. However, by telling the story from the perspective of a child from the Rio favelas in Brazil whose job it is to recycle cans, or from someone recycling in the UK, teachers and pupils can look at all the science issues and it becomes open to incorporation in a citizenship context without sacrificing the substantive science knowledge. Ralph also asserted that such an approach leads to participative community action. He explained his interest in the role of the narrative story in science and developed ideas around constructing stories which in themselves begin to explicitly develop the idea of community, critical thinking and participative action.

After lunch participants listened to a second keynote speaker **George Baxter** (Science Officer at the North West Development Agency) who emphasised the close connection between science and citizenship, stating that, 'It is difficult to have meaningful debate about many controversial issues without some scientific knowledge'

Participants were invited to join a range of morning and afternoon workshops which are described below:

Richard Harris (Lecturer in history education at Southampton University)
Can We, Should we? Promoting Science and Citizenship through a Collapsed Day.

This workshop examined the CODA (collapsed day) project, which was funded by the Wellcome Trust, to investigate a way of engaging students with socio-scientific issues and enhance their scientific understanding and to explore ethical dilemmas. The workshop explained the model used on the collapsed day, looking at different activities that aimed to introduce students to the scientific knowledge about genetics and genetic engineering, the dilemmas that this presents and how to engage in ethical decision making. They then examined the findings about what makes for a successful collapsed day, using both science and humanities colleagues and used a planning activity to apply the principles of a collapsed day to another socio-scientific issue.

Julia Riley and Josh Phillips (Education and Interpretation Officers at the Museum of Science and Industry)
Debating Issues in Science - a 'Debate with a Difference'

This workshop began with an overview of the 'Debate with a Difference' on Stem Cell Research which took place at the Museum of Science and Industry in Manchester. These were one-day events in which KS4 students from several schools had the opportunity to debate the subject of Stem Cell Research. Participants had the opportunity to try out and assess the activities used for the event. The session ended with a round-up of feedback from participants and a discussion about the debate format.

Clodagh Cherry and Cathy Winter (Education Officer at the Catalyst Science Discovery Centre and a teacher at Runcorn All Saints Primary school)

Rotten Rubbish and Gritty Roads – science and citizenship in action

This workshop looked at a project between Catalyst, Halton Borough Council and 18 Halton primary schools involving over 900 year 5 and 6 pupils in the first year and currently in its second year with a similar number, including year 7 pupils. Participants discussed the rationale behind the project which did not derive from the National Curriculum but from the council's perceived

need. The project focussed on the two areas of citizenship and the environment and Sc1 investigation skills.

There was an opportunity for participants to try out the activities from the project which included 'The Not So Rotten Rubbish Roadshow' which travelled around the schools, Icy Investigations - Sc1 skills and salting the roads and 'Investigators Crates' which pupils would take home to encourage family science learning.

Kate Mathieson (Education Officer at Nowgen (the North West Genetics Knowledge Park).

Dilemmas in Human Genetics

In this workshop participants explored some of issues raised by medical applications, such as predictive genetic testing and reproductive technologies. Everyone had the opportunity to discuss their views using both open scenarios and their reactions to different viewpoints to untangle their responses. The workshop also touched upon the role of genetic counsellors and considered the way in which the media represent these issues.

Jane Davies (Education Officer for ActionAid)

Strategies for Teaching About Global Health and HIV

This workshop was designed to help teachers/lecturers to teach issues related to global health and the HIV pandemic. It included an overview of global health statistics, investigated the links between HIV and poverty, examined issues contributing to disease, and looked at useful resources.

Participants were also introduced to active methodology that can enrich science teaching, engage and inspire pupils, and make links between science and citizenship. This methodology encouraged students to analyse issues in depth and link scientific, social, moral, political and ethical issues.

Joyce Porter (ASE Field Officer for the Northwest region, lecturer John Moores University))

Active Citizenship Opportunities through Science

This workshop explored a number of readily available resources to support the teaching of citizenship through science. It considered recent projects (including the Science Year CD roms from 21st Century Science, Science Upd8 and the Global Dimension to Science Projects) whilst providing a look into the future for possible developments. Cross curricular links and key skills were emphasised throughout providing the participants with an opportunity to widen their approaches whilst sharing their own experiences from the classroom.

Michael Newman (Development education worker at the Humanities Education Centre, Tower Hamlets)

Does it matter what stars are made of? - addressing issues of public understanding using the cultural image of the detective

In this workshop the perception and understanding of science was explored using classroom activities that raise issues of what science is and how it links to issues of truth and justice. The popular cultural figure of the detective was used to unravel the mystery and examine the importance of science to citizenship in terms of identity and justice.

Activities included looking at ways of seeing and how these can influence outcomes, exploring images of the detective and their relationship to a just society, looking at boundaries between private and public, the creative moment and the public discourse.

Questions were explored such as: When does knowledge become public? How does it gain status? How do we investigate the world? How do we portray science when we teach it? Why is science so misunderstood? Does it matter what stars are made of?

These questions were addressed through solving a closed room murder mystery whilst pitting Father Brown against Sherlock Holmes; examining the TV detective Lt Colombo's methods; exploring the crime of genocide and the guilt of scientists; creating scientific explanations and telling stories; analysing genetic's data and racism. Film clips were used to illustrate issues and resources were provided for participants to take away.

Helen Penny (Special Projects Officer for At-Bristol Science centre) **Citizen Science – new approaches for engaging young people in debate**

This workshop focussed on some of the projects that have been developed through the Citizen science project to encourage young people to explore and debate their opinions about contemporary science issues. From cloning and designer babies to drug development and future foods the workshop illustrated topics and techniques that teachers and pupils have explored and shared ideas for participants to use in their classrooms.

Participant Evaluation Data

Using a scale of 1-4 where 1 is very good and 4 is poor the evaluations were as follows:

The conference overall:

Interest and enjoyment

1 = 50%
2 = 45%
3 = 5%
4 = 0%

Clarity of delivery

1 = 42%
2 = 50%
3 = 8%
4 = 0%

Relevance of content

1 = 39%
2 = 53%
3 = 8%
4 = 0%

Usefulness of information provided

1 = 39%
2 = 53%
3 = 8%
4 = 0%

Usefulness of the teaching and learning materials provided

1 = 37%
2 = 47%
3 = 16%
4 = 0%

The workshops and speakers in particular

1 = 51%
2 = 33%
3 = 11%
4 = 1%

What was the most useful/ enjoyable/inspirational/ exciting aspect of the day?

- Citizen science session and networking
- Introduction to relating science and citizenship
- All sessions were interesting
- Ralph Levinson
- Variety of activities
- Ideas for engaging young people in 'science and society'
- Citizen Science materials – excellent
- HIV global workshop
- The application to lessons
- Recycling issues
- HIV and AIDS workshop – very good resources

- HIV workshop materials
- Strategies for teaching HIV
- The HIV why, why ,why? Activity
- Genetics talk
- HIV Aids workshop
- Ideas for group work and sources of data
- The HIV workshop
- Facts and figures of AIDS?HIV – idea for collapsed day in school
- All of it – really inspirational, especially genetics
- Ralph Levinson and the HIV workshop
- Opportunities for Discussion
- Relevance to new science orders
- Genetics session
- Practical and hands on
- Hearing about projects and examples of good practice
- The Helen Penny workshop
- Looking at different formats to engage in debate
- The chance to work with and talk to non-science people!
- The HIV workshop
- Exploring some citizens Science with other educational professionals
- Citizen science games and role play
- Good websites
- Good creative thinking ideas
- Exploring the relationship between ethics and science
- Dilemmas in human genetics
- Citizen Science

Suitability of venue

1 = 79%
 2 = 21%
 3 = 0%
 4 = 0%

Catering

1 = 51%
 2 = 36%
 3 = 8%
 4 = 5%