The Doing Dialogue Project

A Final Report

A partnership project between Ecsite-uk and the

UK's Science & Discovery Centres

2005-2008

By

Ecsite-uk

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Executive Summary

The Doing Dialogue project was a collaboration between four UK science centres and Ecsite-uk, the UK's network of science and discovery centres. The project took place between 2005 and 2008 and aimed to:

- Enable young people's voices to contribute to consultations on biomedical science
- Enhance science centre staff's facilitation skills
- Embed dialogue and debate activities into the partner science centre's schools programmes
- Explore and improve marketing of debate and dialogue events to schools

In order to enable young people's voices to contribute to current discussions on biomedical science, the project team worked closely with the Nuffield Council on Bioethics. This collaboration led to 1162 young people contributing to two separate national consultations being run by the Nuffield Council on Bioethics.

In total 1414 students took part in professionally facilitated debates around ethical issues related to the biosciences. In total 168 teachers took part in the project either by participating in the dialogue events (118 teachers) or by assisting with the development of the resources and advising the project. Students and teachers from across the UK were involved, including those from Glasgow, Newcastle, Manchester, Birmingham, Bristol, London and Oxford.

This project also developed a facilitation training course which was reviewed and shaped by external facilitation training experts. This bespoke three-hour introductory course covers the full range of skills needed by a good facilitator to enhance discussions with young people. It continues as a lasting resource for the partners.

Over 250 staff from science centres and museums across the UK were trained through this three-hour training course in facilitation skills during the project. In addition ten expert trainers were also trained as part of a train-the-trainer model. These expert trainers are in place within Ecsite-uk and the partner science centres.

As part of this project, two high quality and rigorously evaluated sets of resources were also developed for use with young people. These were on the two areas of the Nuffield Council on Bioethics consultation, namely premature birth and vaccinations and are presented as box sets of resources. Each of the four partner science centres ran the debate events, and all have since regularly included these events into their schools programme.

The model and mechanisms developed through this project have since been used in other projects, increasing the depth and breadth of dialogue-related activities offered by the science centres. This includes mechanisms for facilitated dialogue for students, a 'tool-kit' developed to give a step-by-step guide to involving students in science-based consultations, as well as updating some pre-existing resources for debate events, for example those on stem cells.

Science centres can find it challenging to attract large numbers of secondary school pupils to dialogue-based events. This project also examined how to market these dialogue events to schools and as a result has enabled the partner science centres to expand and broaden the potential market for their schools debates programmes, in particular building relationships with humanities and other non-science departments within schools.

1 Introduction and overview

The Doing Dialogue project took place between 2005 and early 2008 and involved 1414 students aged 14-19, 168 teachers, a host of bioscience experts and ethicists all in combination with 250 science engagement specialists from the UK's science and discovery centres, science museums and other public engagement organisations.

The project team was comprised of Ecsite-uk (the UK's network of science and discovery centres), and the following four UK science centres:

- Thinktank: Birmingham's science centre
- Manchester Museum of Science and Industry (MOSI)
- The Centre for Life, Newcastle
- Glasgow Science Centre

The project focussed on achieving four goals:

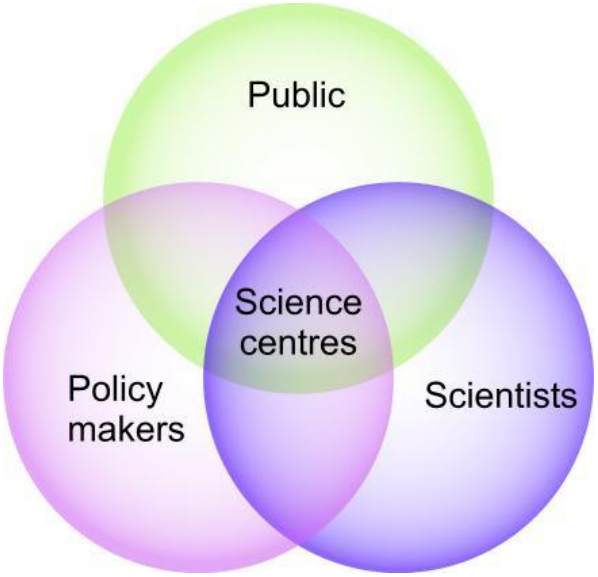
1. Enabling young people's voices to contribute to consultations on biomedical science
2. Enhancing science centre staff's facilitation skills
3. Embedding dialogue and debate activities into the partner science centre's programmes
4. Exploring and improving the marketing of debate and dialogue events to schools

1.1 The unique role of science centres

Every week of the year, 385,000 people including school students, families and adults explore science within a science centre or science museum. Every year, that equates to 20 million people of all ages, in all parts of the UK both rural and urban.

Science and discovery centres occupy an unusual space in the national STEM landscape. They are one of the very few year-round, publically accessible venues dedicated to science and the discussions around science. Here various publics can meet, discuss and explore issues.

The Doing Dialogue project aimed to embed biomedical discussion and debate events in the regular programming of science centres and museums, in order to establish science centres and museums as places where young people are actively involved in debate on contemporary issues and to provide a mechanism by which they can contribute to public consultation topics.



This project brought together schools students aged 14-19, with scientists and policy makers in the venues of science centres, to explore several issues around bioscience. Specifically these were discussions around premature babies and health and vaccinations which were to feed into two public consultations being run by the Nuffield Council on Bioethics. Experts and scientists from this council also took part in the student debates giving expert opinions and enabling students to question and discuss issues with them direct. This collaboration led to 1162 young people contributing to two separate national consultations being run by the Nuffield Council on Bioethics.

www.nuffieldbioethics.org/education/education-collaborative-education-projects

1.2 Enabling young people's voices to contribute to consultations on biomedical science

This project engaged schools students aged 14-19, with scientists and policy makers in the venues of science centres, to explore two bioscience subjects around which the Nuffield Council on Bioethics was holding public consultations. These involved discussions around firstly premature babies and secondly health and vaccinations. Overall 1162 young people contributed to two separate national consultations by the Nuffield Council on Bioethics, with 1414 students participating in the wider project. Overall, students and teachers from Glasgow, Newcastle, Manchester, Birmingham, Bristol, London and Oxford were involved.

To achieve this, the project team worked closely with the Working Party at the Nuffield Council on Bioethics to understand issues of relevance for the consultations, and to explore with science centre colleagues how these might be made appealing to both the students and their teachers, including relevance to the curricula in England and Scotland.

The project team then developed bespoke box sets of resources that would engage students with in the 14-19 age groups and planned the precise detail of the sessions and the day to maximise the dialogue opportunities.

1414 students over the course of 2 years came into science centres in Glasgow, Newcastle, Manchester, Birmingham and others, and took part in whole-day sessions to explore the ethics and the background information needed to be able to explore the issues and give opinions into the consultation. The debate days were highly structured and whilst sessions might involve large numbers of students, all students were split into groups of 8-10 students and each group had their own personal facilitator. This facilitator had been trained by the Doing Dialogue project specifically in the art of facilitating discussions between groups of 14-19 year olds around issues in bioscience.

For students (Key Stages 3-4, and equivalent) and their teachers, the project aimed to:

- provide the opportunity for students to find out about and discuss a topical issue through a structured programme held in the welcoming non-school environment of a science centre
- involve teachers as observers rather than facilitators, gaining insight and experience of informal methods to stimulate debate of ethical and contemporary issues in science
- through structured debate, and presentations to their peers, enable students to share their findings, opinions and feelings on the issues involved.

1.3 Enhancing science centre staff's facilitation skills

In order to effectively deliver the consultation events, the project team needed to train large numbers of science centre and museum staff in the facilitation skills needed to facilitate groups of teenagers discussing often sensitive subject matter. Early consultation (before the project began) revealed that a bespoke facilitation skills course should be created for the project, in consultation with experts in this area.

This project therefore created a novel 'facilitation skills training course' which was reviewed and shaped by external facilitation training experts. This bespoke three-hour course covers the full range of skills needed by a good facilitator to enhance discussions with young people. It continues as a lasting resource for the partners.

Over 250 staff from science centres and museums participated in this three-hour course in facilitation skills training during the project. It should be noted that this was over four times the targeted number of participants (60). Many of those trained have tested their skills both within these debates, and within a range of affiliated debate events, such as those exploring genetic testing, stem cells and nuclear energy (see Appendix K for a fuller list).

1.4 Embedding dialogue and debate activities into the partner science centres

The project also aimed to embed dialogue and debate activities into the four partner science centres programmes so that students and teachers in Glasgow, Manchester, Birmingham and Newcastle could have access to a range of debates.

Of the 250 professionals who took the 3-hour bespoke facilitation skills workshop nationally, a large proportion were from the four partner science centres who sent staff at all levels.

In addition to these 250 staff, the project trained 10 'expert trainers'. They underwent more intensive training and several had pre-existing experience in facilitating debates, discussions and activities. These 10 expert trainers were trained as part of a 'train-the-trainer' model. These expert trainers are in place on the staff within Ecsite-uk and the partner science centres.

The project also led to a greater visibility and vibrancy for debate-led activities within each partner organisation, for example amongst senior staff and staff from other departments. This led to a greater level of interest and support for the opportunities dialogue events can bring, particularly kudos for leading a national project which helped teenagers feed into complex national consultations on the ethics surrounding advances in biomedicine.

1.5 Exploring and improving the marketing of debate and dialogue events to schools

The project also reviewed all the mechanisms the four partner centres use to market dialogue events to schools and teachers. Chapter 6 contains a list of all the best practice approaches and a review of what was successful during the project.

1.6 The roles of the project partners

The Doing Dialogue project was a partnership project between four science centres: the Centre for Life (Newcastle), MOSI (Manchester), Thinktank, Birmingham Science Museum and Glasgow Science Centre, managed by Ecsite-uk. In addition, events and trials have also been held at the Natural History Museum, At-Bristol and The Oxford Trust.

Capitalising on the science centres' reputation as trusted and motivational learning environments, the project aimed to enable young people to give direct feedback to the scientists, ethicists and

campaigners who work in contemporary science, and to the organisations that conduct public consultations.

The Doing Dialogue project was split into five strands, with each partner taking responsibility for delivering one strand:

1. Project management, led by Ecsite-uk
2. Consultation, led by Thinktank, Birmingham Science Museum
3. Facilitation skills training led by MOSI
4. Content development led by the Centre for Life
5. Marketing and publishing – Glasgow Science Centre

This report includes chapters from each of these strands written by the lead partner, along with details of the events that have been run for schools and the dissemination activities and subsequent developments that have resulted from the project.

1.7 A lasting legacy

The project leaves a strong legacy, for example two new packs of debate materials available to all science centres, 250 trained facilitators and 10 expert facilitation skills trainers. The project also proved to be enjoyable and informative for students, with over 90% of the participating students saying it was enjoyable and useful.

The tools and techniques developed and used to create a strong partnership, in particular the writing workshops has been a good model to follow and these relationships and partnerships have since been utilised within other projects.

2 Contributing to public consultations

2.1 Objectives

- To provide public consultation working groups with information about the views and concerns of young people
- To build and share experience of engaging with young people on a selection of public consultation topics

2.2 Introduction

Students are increasingly being asked to voice their opinions on ethical issues surrounding science, and this is set to increase with the introduction of 21st Century Science (the new Science GCSE syllabus) and the current reviews to the KS3 curriculum. The consultation element of the Doing Dialogue project sought to explore and share ways to achieve this.

The project involved a close working relationship with The Nuffield Council on Bioethics and The Doing Dialogue team was invited to participate in one working party session and submitted evidence to two consultations.

The following link shows elements of the Ecsite-uk part of the project

http://www.nuffieldbioethics.org/education/education-collaborative-education-projects

2.3 Nuffield Council on Bioethics

The Nuffield Council on Bioethics is an independent body that examines and reports on ethical issues in biology and medicine. It was established by the Trustees of the Nuffield Foundation in 1991, and since 1994 it has been funded jointly by the Foundation, the Wellcome Trust and the Medical Research Council.

The Council has achieved an international reputation for advising policy makers and stimulating debate in bioethics. www.nuffieldbioethics.org

Prior to the start of the project, discussions took place between Ecsite-uk and The Nuffield Council on Bioethics who were interested in broadening participation in their public consultations. Specifically they were keen to hear the views of young people aged between 14-19 years.

All the dialogue and debate and other resources created as part of this project were developed in close association with this Council. The project aimed to enable young people to share their views on the following two Nuffield Council on Bioethics public consultations:

- Consultation on prolonging the life of the newborn
- Consultation on public health

For each of its public consultations the Nuffield Council on Bioethics recruits a working party made up of a wide range of experts within that field. The working party is responsible for deciding the framework of the consultation document, the questions that need to be addressed, analysing the responses to the consultation and providing the final report.

2.4 Selecting the content and questions for the young people

When the Doing Dialogue Project began, the Nuffield Council on Bioethics was running a consultation on 'The ethics of prolonging life in fetuses and the newborn'.

Working with the Communications and External Affairs Manager of Nuffield Council on Bioethics we received a copy of the consultation paper. From this consultation paper we selected specific questions that:

- related to the curriculum studied by this age group
- contained content that students could relate to
- that could generate interesting tasks or activities for the participants to engage with.
- That would appeal to teachers, as they of course are the ones who make the decision to bring a group to a science centre, and must be seen by them as a worthwhile learning experience for the students.

Selecting the questions was an integral part of the 'writing days' (see chapter on content development) and the content was agreed by all the science centres in the consortium.

The second consultation topic being run by The Nuffield Council on Bioethics was based on a consultation about 'Public Health: ethical issues'. This used case studies looking at prevention and control of infectious diseases, obesity, smoking, alcohol and enhancement of food and water. We were very selective as to which areas we would include within our events and resources, and decided that prevention and control of infectious diseases most closely fitted with our criteria above, especially the curriculum.

2.5 How did we gather the information?

Once the consultation questions that the students would address had been decided upon, the team examined what information needed to be gathered. This part of the project is described in detail in Chapters 2 and 4.

The responses to the tasks would give us the young people's opinions. The actual format of recording the responses was developed as per the information required by the working parties.

The working party for the consultation on public health required a greater level of statistical information about the young people consulted, in terms of age and gender. We developed a 'consultation record' (see Appendix A) which was completed by the group facilitators. The information from these was then collated by the individual centres and subsequently by the report writer (Julia Kingston, Thinktank).

At the start of each event the introduction session told the young people that they were contributing to a Public Consultation and their results would be fed back to Nuffield Council on Bioethics. Facilitators commented that the groups felt motivated by this to consider their responses more carefully.

2.6 Making use of the expertise of the working party

We were able to send draft materials to members of the working party for comments and approval, and action any suggested changes. This process was invaluable, as it meant that the working party had a clear idea of the questions we were asking the students, and how these were framed and supported by supplementary materials.

Members of the Nuffield Council on Bioethics working parties also came to the events as speakers. This had the additional benefit of allowing them to see the events in action and how engaged the young people became in the topic.

2.7 Feeding back the results

We prepared a report for each working party. The report was concise (two sides of A4) and included:

- an overview of what happened at the events
- how many young people took part, their age and gender
- the results from the trial sessions when the tasks were tested
- the question responded to within the consultation document and the response of the young people
- an appendix showing the policy statements (the final outcome of each debate) of the young people to show how the young people had reached their decisions.

Both reports submitted to The Nuffield Council on Bioethics can be found in Appendix B and Appendix C.

2.8 Presenting to the working party

The Doing Dialogue team presented the results to The Nuffield Council on Bioethics working party. We answered questions about the events, expanded on the information they had received in the report and received feedback from them about the results we presented which could then be taken forward to the next consultation.

2.9 Evidence submitted for consultation on Premature Babies

The evidence submitted to each working party can be found in Appendix B and Appendix C. Elements are also on their website at:

http://www.nuffieldbioethics.org/neonatal-medicine/neonatal-medicine-external-consultation

The Nuffield Council on Bioethics recognised the Doing Dialogue project input in their final reports, as follows:

'During the progress of the Working Party, the Council worked with Ecsite-uk, the UK Network of Science Centres and Museums, to develop workshops for young people on the issues surrounding the treatment of premature babies. The Working Party provided advice on the content of the workshop materials and individual members took part as guest speakers. A total of 659 people aged 14–19 were involved in six debates in schools and science centres around the country between October 2005 and March 2006. A summary of the discussions, which can be found on the Council's website, was presented to the Working Party in April 2006.' (Critical care decisions in fetal and neonatal medicine: ethical issues report)

2.10 Evidence submitted for consultation on Public Health (Vaccinations)

The evidence submitted as a result of the second set of debates on 'issues surrounding vaccinations' was also recognised in their final report:

'During the progress of the Working Party, the Council worked with Ecsite-uk, the UK Network of Science Centres and Museums, to develop workshops for young people on the issues surrounding vaccinations. The Working Party provided advice on the content of the workshop materials. A total

of 503 people aged 14–19 took part in debates about vaccinations in schools and four science centres around the country between April and September 2006. A summary of the discussions was provided to the Working Party in October 2006.' (Public health: ethical issues report)

http://www.nuffieldbioethics.org/education/education-collaborative-education-projects

http://www.nuffieldbioethics.org/public-health

2.11 Future recommendations

As a result of this part of the project, we have some further recommendations that the Doing Dialogue team will consider when they work with consulting organisations in the future. These include:

- Work as closely as possible with the consulting body who are experts in this field
- Increase the profile of the debate with students and teachers by
    - Drafting a template letter inviting schools to the debate events addressed to the head teacher and signed by the Chair of the Working Party to add value to the events and aid recruitment of schools
    - Draft a thank you for attending letter also signed by the Chair of the Working Party to give attendees a sense of the value of their opinions and work on the day.

- Increase the detailed reporting of the young people's discussions. The working parties highlighted that they would like to know exactly how the young people arrived at their policy statements
- Get a baseline of the young people's opinions at the start of the debate to measure the change of opinion
- Feed back to the participating schools the acknowledgments of their student's contribution to the final report.

2.12 Conclusions

Working with external consultation bodies adds value to the work we do with the young people and highlights the growing expertise science centre staff have developed as they facilitate debate and discussion with their audiences. This is an area all four science centres are keen to see continue.

The relationship with the Nuffield Council on Bioethics was very fruitful, and the team hope to work with them in the future.

A colourful summary version of this chapter is provided as a four-page 'Consultation Tool-kit' for science centres wishing to undertake similar projects, and can be found in Appendix D, the first page of which is copied below:

Doing Dialogue consultation toolkit

Setting expectations

Remember that each working party is made up of different experts and will have slightly different expectations of what information is needed and how that is to be presented.

Gathering information

Once you have decided on the consultation questions,you can start writing the materials. You will need to take into consideration the information you need to gather.

The responses to the tasks should give you the young people's opinions. The actual format of recording the responses will vary accordng to the needs of the information required by the working party.

Making best use of the expertise of the working party

Send draft materials to members of the working party for approval and any suggested changes.

Ask for them to come to the events as speakers.

This has the additional benefit of allowing them to see the events in action and how engaged the young people become in the topic.

In our experience

At the start of each event the introduction told the young people taking part that they were contributing to a Public Consultation and their results would be fed back to Nuffield Council on Bioethics.

Facilitators commented that the groups felt motivated by this to consider their responses more carefully.

Top tip

Our second working party wanted far more statistical information about the make up of the young people consulted in terms of age and gender.

We developed a '**consultation record**' to be completed by the group facilitators. The information from these was then combined by the individual centres and emailed through to be collated by the report writer.

3

3 Facilitation training and course development

3.1 Objectives

- To develop relevant and appropriate facilitation training for science centres staff
- To train 10 facilitation experts, ready to train others in facilitation
- To train 60 science centre staff to professionally facilitate debates with teenagers and young people.

3.2 Overview

In order to effectively deliver the consultation events, the team identified a training need for science centre staff. In the past, science centre staff had not been trained in facilitation skills for ethical debates with young people. The Doing Dialogue project has addressed this by developing two training courses. These are:

1. A facilitation skills workshop for science centre staff
2. A train-the-trainer course for expert facilitators

Both were developed by MOSI, with support from Savita Custead, an experienced facilitator, trainer and member of the Ecsite-uk team during this project.

3.3 Developing the course

The Doing Dialogue facilitation skills workshop was carefully developed. During the development of the course, it has been trialled, reviewed and evaluated, in an almost continuous process. Some of these stages are described in more detail below.

3.3.1 External facilitation courses

We aimed for all the members of the Doing Dialogue project team to attend at least one externally run facilitation course, prior to the development of the Doing Dialogue facilitation skills workshop. This was to enable the team to experience a range of courses, and to help them develop the structure and style of the skills workshop.

Team members attended courses such as The Institute of Cultural Affairs Facilitation Skills Course www.ica-uk.org.uk and one by Dialogue by Design www.dialoguebydesign.net . Jenny Search also attended the Grad school as a mentor to learn and develop her facilitation skills www.vitae.ac.uk/researchers/15672/GRADschools.html .

After attending the course, each member of the team completed a feedback form which was fed back to MOSI to capture and share the learning. MOSI and Savita Custead then reviewed the feedback to inform the development of the facilitation skills workshop.

3.4 The contents of the facilitation training course

The facilitation training course was designed to be an introductory course for staff working in science centres. Following an initial needs analysis consulting staff and line managers, the course content and length were determined.

The course is accompanied by The Participants' Pack (see image above) and Trainers' Pack which gives a thorough overview of the course content and means of delivery.

In summary, the course covers:

- Introduction and ground rules
- Facilitation – a scale of opinion
- Questioning
- Body language
- Assessing if we are facilitating
- Group roles
- Challenging participants
- Group theory
- Facilitation styles
- Recording skills
- Practicing facilitation
- Evaluation

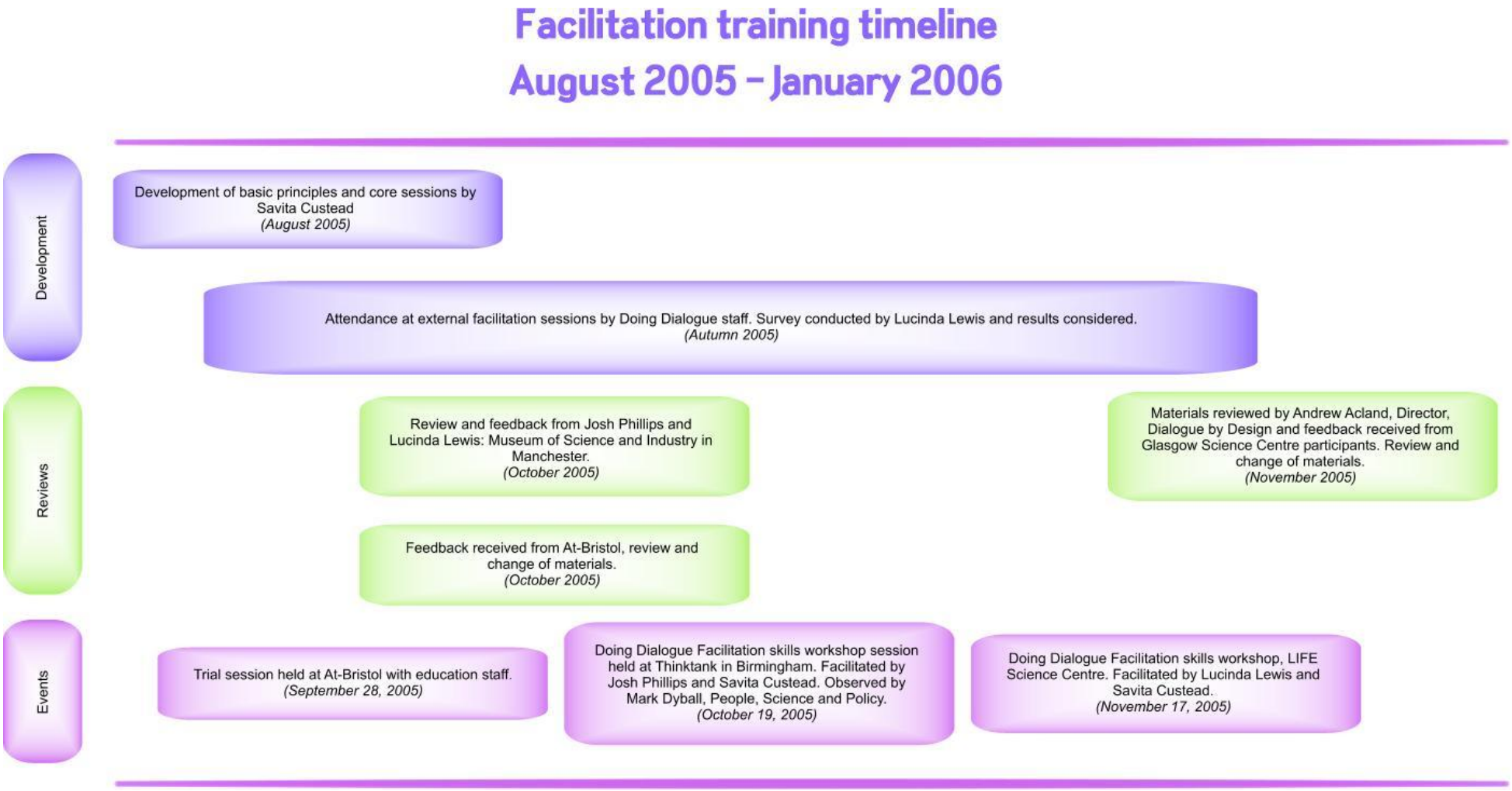


Figure 3-1 The facilitation training timeline

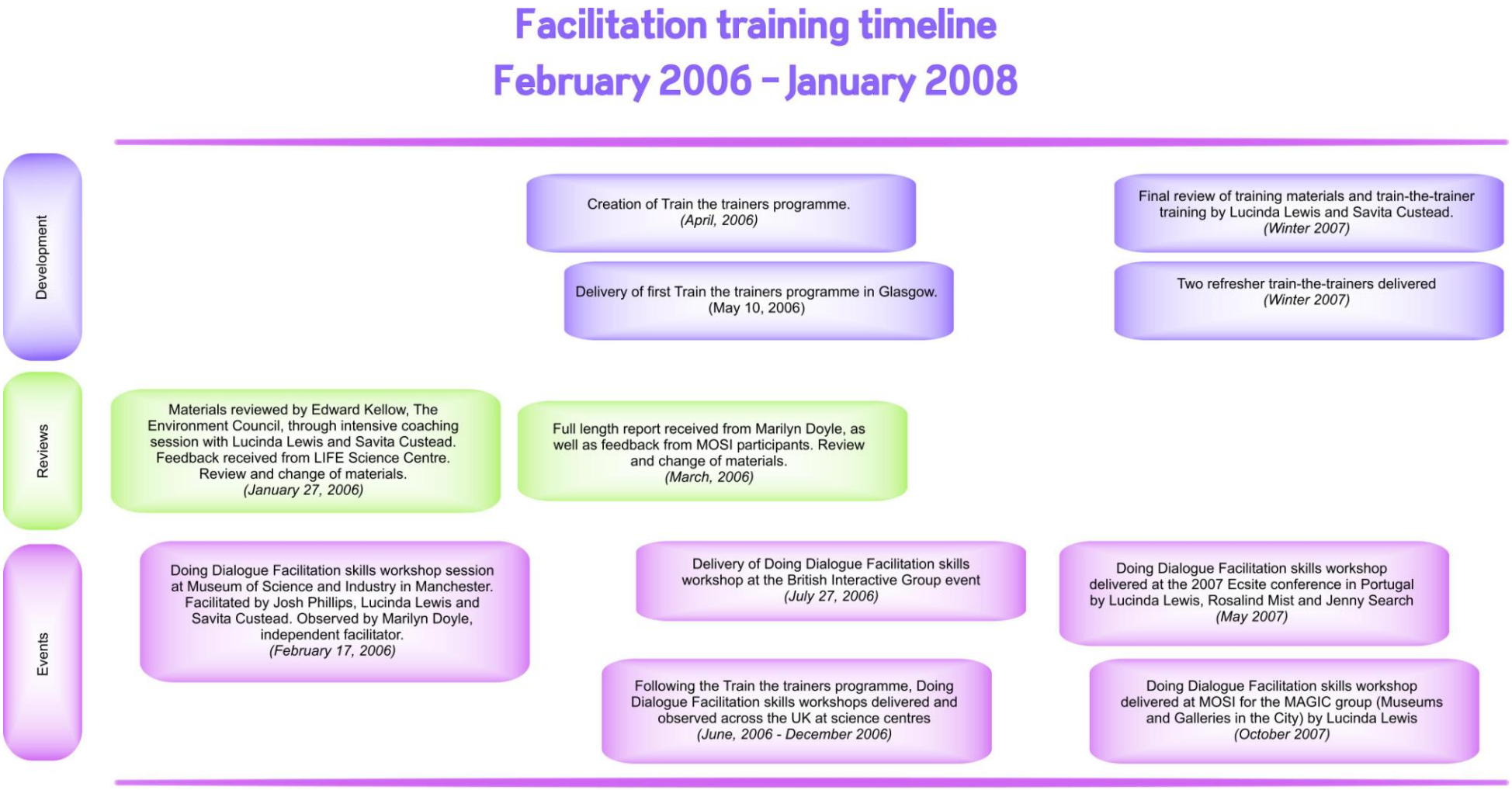


Figure 3-2 The facilitation training timeline

3.5 Train-the-trainer

In order to increase the capacity of the sector, the project involved training at least 10 senior staff within the education teams in the centres (and in Ecsite-uk) as expert facilitation trainers. This model was designed to ensure consistency and quality of training provision. Trainers were trained in May 2006, and then refresher training was provided in December 2007 and January 2008. Only trained trainers are able to deliver the facilitation skills workshop and have access to the training materials.

The first train-the-trainer session was held in Glasgow on 10 May 2006. The session was attended by staff from the Museum of Science and Industry in Manchester (2 members of staff), Glasgow Science Centre (5), the Centre for Life (2), Thinktank (3) and Ecsite-uk (3), and was delivered by Savita Custead. The 15 staff taking part had all previously facilitated at events for young people, and most had received facilitation training themselves.

Participants spent the day examining and delivering the course, and received a full trainer's pack, to aide them in delivering the course. These training materials have been submitted with this report.

Once the trainees had completed the course, they then delivered the facilitation skills workshop in pairs, observed by a member of the development team. The team gave the trainers feedback on their training in terms of content and style. After delivering facilitation skills workshops, trainers were encouraged to fill in a feedback form, to share their experiences with the other trainers. This facilitation course feedback exercise can be found in Appendix F.

Two refresher train-the-trainer events were held in December 2007. These were designed to refresh the skills of existing trainers, and to train additional members of staff in the science centres.

The science centres involved in this project have benefited from this training package. They all now run training courses for their staff, and the refresher training enabled the pool of trainers to grow too.

3.6 Delivering the Facilitation skills workshop

The 3-hour Doing Dialogue facilitation skills workshop has been delivered by each partner science centre to staff facilitating Doing Dialogue events. The course is generally re-run prior to a new event, or period of events.

The course is generally delivered by a pair of trainers, giving participants a change of style and pace, and the opportunity to see and learn from two different facilitators in action.

Prior to attending the course, participants were asked to fill in a short questionnaire. This enables the trainers to gauge the level of the participants and to ensure that their needs are met where possible. This questionnaire was developed by People Science Policy and can be found in Appendix G.

3.6.1 Delivery of the facilitation skills workshop at other events

In addition, trained members of the Doing Dialogue team have delivered the facilitation skills workshop for other organisations (e.g. At-Bristol) and as part of appropriate conferences such as the British Interactive Group (BIG).

Figure 3-3 Facilitation training for science centre staff at the BIG Event

Figure 3-4 Trainees discuss facilitation styles

3.6.2 The Potential Trust

Ecsite-uk also approached the Potential Trust with a proposal to undertake the facilitation skills workshops beyond the Doing Dialogue science centres. They received sufficient funding to run the workshops in an open access fashion, with workshops being advertised through the Group for Education in Museums (GEM) and PSCI-COM. These proved to be extremely popular, particularly in Scotland where two events were held. In total, 97 people received facilitation training as a result of the Potential Trust funding.

3.6.3 Total numbers of staff who took the facilitation training

In all, 250 people have received facilitation training as a result of this project.

Event	Science Engagement staff trained in facilitation skills
At-Bristol trial	13
Science centre and museum staff, and public engagement professionals funded by The Potential Trust	97
Doing Dialogue project team	15
Doing Dialogue science centre staff	80
European Science centre staff at the Ecsite Annual Conference	45
Total	250

3.7 Evaluation

The facilitation skills workshop, and train-the-trainer training have been evaluated extensively both internally and externally during this project. PSP evaluated the 3-hour facilitation skills workshops as part of their overall evaluation brief. In addition, Ecsite-uk approached three respected facilitation trainers to review the course and/or materials.

3.7.1 PSP evaluation

PSP observed the first training in Thinktank (19 October 2005). Their feedback was particularly useful. It is presented in their interim report (submitted with this final report), and is summarised below.

Initial impressions

Quite a small group, most people seemed to know each other well, this will have helped dynamics of session. What would the impact have been of a larger group containing people who knew each other less well? This is something for the Ecsite-uk team to be aware of.

Training space initially appeared a bit bleak and perhaps uninviting. However, it was made to work very well, plenty of movement of people and chairs created a dynamic setting that encouraged input and interaction.

Introduction and warm-up

Good explanation of rationale for training and logistics of the session. The lively warm-up activity set an active tone for the whole session. There could have been a little more discussion of the flip charts generated, in particular, the 'what does a good facilitator do' chart could have been used

to develop a discussion of what the role of a facilitator is. This was taken as understood (and probably was understood by the people attending this session) but it may be worth a short discussion.

Facilitation styles

This work sheet based task introduced different approaches to facilitation. This triggered lively discussions about preferred styles and when it would be appropriate to use different styles, including those that come less naturally to individual facilitators.

Questioning styles

This session was particularly useful for demonstrating the potential shortcomings of different styles. For example it is often appropriate for facilitators to probe for what lies beneath comments/statements, but probing with persistent 'why' can become/appear aggressive and discourage rather than encourage conversation. Similarly the round table exercise illustrated how this approach can leave people more concerned about the imminence of their 'turn' than any developing conversation.

It might be worth adding some reassurance at the end of this session that there aren't necessarily right and wrong styles, rather that facilitators need to be aware of strengths and weaknesses of styles and deploy different (most appropriate) ones in different scenarios.

'Reflecting' exercise useful in highlighting need for facilitator to listen and respond. When working to a session guide it is possible to be distracted by the perceived need to 'cover everything' sometimes it may be more valuable to follow a particular thread in greater detail than anticipated even if this means that other issues may be covered in less detail or not at all.

During the reflecting exercise there were a couple of situations where people fell into asking multiple questions in one. It may be worth highlighting that facilitators should avoid this, it is potentially confusing and often only the final question will be addressed.

Body language

This was another session that achieved a high level of engagement. The 'body sculpting' exercise worked well, but could be more problematic with groups where the participants are less comfortable with each other or there are more strongly perceived hierarchies. The sensible and sympathetic introduction by the lead trainer was a good model for future roll-out of training.

One of the most useful aspects of this session was the discussion it triggered about the impact of the facilitator's body language, if this does not arise spontaneously in future training sessions, it would be worth the trainer introducing it.

Personal space

A useful thing to remind trainees about the importance of personal space, particularly during extended activities, where participants need to feel comfortable. Nicely linked to thinking through planning an activity and assessing the space requirements and set-up of the working space.

Difficult behaviour

Again, stimulating examples that provoked a fair degree of discussion. Given that the participants in the Doing Dialogue events will be school students, it may be worth touching on the role (and possibly the management) of teachers. Teachers can help to ensure appropriate behaviour, but the Doing Dialogue events are not classroom science and should encourage livelier behaviour than would be a normally acceptable classroom standard.

Trying facilitation

The very small sub-groups made this rather artificial. A little more time and elements to make it more real e.g. some role play to stretch the facilitator might help.

This session did introduce the issue of whether or not specialist background knowledge is necessary. This is to be followed up in the post-event questionnaire for facilitators.

Overall impressions

A lively, well planned and well delivered session that covered most of the key issues. There was time pressure, but this helped to keep energy levels high. It is probably worth extending the session slightly, but probably by no more than 30 minutes to keep the feeling of a sharp active event.

Things that might be added

Recording

Recording of both conversations along the way and final outputs are important and a short session covering how this can be achieved (and the data collected used) might be appropriate. For some activities what comes out of the conversations throughout the event can be as important as any 'conclusions'.

Ground rules – end point

Could be worth mentioning the importance not just of setting initial ground rules, but explaining end points and required outputs of different sessions/tasks. This might form part of a session about the role/purpose of the facilitator.

3.7.2 Evaluation and review by Marilyn Doyle

Marilyn Doyle is an expert in facilitation skills and leadership development (www.groupworksassociates.com). She observed the course in February 2006 being delivered by Josh Philips, Lucinda Lewis and Savita Custead. After individual personal feedback to each trainer, Marilyn then wrote a review of the course as a whole. This evaluation, review and recommendations can be found in Appendix H.

Marilyn's very helpful suggestions further shaped the course, in particular the format of the trainers' manual and the participants' pack.

3.7.3 Evaluation and review by Dialogue by Design

Andrew Acland (Dialogue by Design) reviewed the content of the course and the feedback from PSP. He drew the team's attention to the need to promote the skills development as well as

encouragement, as PSP's evaluation highlighted that the course participants were commenting more on the confidence aspect rather than the new skills they were learning.

3.7.4 Evaluation and review The Environment Council

Edward Kellow (The Environment Council) ran an intensive coaching session with Lucinda Lewis and Savita Custead. During this session he reviewed the course content and delivery mechanism. The team found this session particularly useful. In particular, Edward enabled them to restructure the training session, changing the ordering to strengthen the learning opportunities.

3.8 Conclusions

The facilitation skills workshop was thoroughly reviewed and was extensively used within the partner science centres.

At least 250 science centre and museum staff received introductory facilitation training as part of this project.

In the future, the challenge for the Doing Dialogue team is to maintain the consistency and quality of the trainers, and to enable other science centres to access this training. The Doing Dialogue group are working with The Training Group to explore further roll-out and marketing options.

4 Content Development

4.1 Objectives

To collaboratively develop new debate events

4.2 Overview

Doing Dialogue aimed to create two new sets of materials to support science centres delivering debate and dialogue events for groups of up to 100 14-19 year olds attending from different schools. These events were to build on the model developed by Sarah Robinson (Centre for Life) and Ecsite-uk during the Debate with a Difference project.

At a Doing Dialogue event, students are split into small groups (8 - 10) and get the chance to work with students from other schools. With a facilitator, each group carries out a number of tasks designed to inform and stimulate discussion. Students also get the chance to quiz invited guests with expert knowledge on the topic. The aim of each debate is for each group to come up with a joint statement to share with the rest of the students. These statements often incorporate elements related to policies.

The results of the events were fed into the consultations carried out by the Nuffield Council on Bioethics (http://www.nuffieldbioethics.org/).

The team has developed two sets of materials, one on prolonging the life of the newborn, the second themed around vaccination. The debates have been called:

- Premature babies: decisions at the edge of life
- Vaccinations: decisions at the sharp end.

The project team has also revised the materials produced for an earlier debate on stem cells.

Both debates have been held at all four centres as well as at the BA Festival of Science 2006 (Norwich) and 2007 (York).

As well as the events developed during the Doing Dialogue project, the science centres involved in the project have run other debate-style events on topics including: stem cell research, waste management, nanotechnology and nuclear energy. It is often hard to get teenagers to talk openly about issues in science. The format of engaging tasks to stimulate discussion works well and there is often a buzz of activity and excitement at these events.

4.3 Structure of a Doing Dialogue event

The general format for an event to take is:

- The students arrive, are welcomed and given housekeeping and any safety information.
- Participants are allocated into groups to work with a trained facilitator (see facilitation section).
- Visiting speakers are given five minutes to introduce themselves to the whole group. We normally ask speakers to simply say who they are, what they do on a day to day basis in their jobs and what kinds of questions they are willing (or not) to discuss. We have found that this format works much better than a formal ‘lecture’ by speakers.

- The groups are then taken to their workspace and work through a series of structured tasks with their facilitator.

  The tasks tend to start off as a way to find out background information and about the controversial issues surrounding the topic of the day. The tasks become more discussion-based as the day goes on and at the end of the event each group has to come up with a policy or an answer to a question such as, 'Should vaccination ever be compulsory?'

- One of the key aspects of the event is that all members of the group have to agree on a statement and be able to justify their opinions.

- The groups all present their policies to everyone else and time permits there may be some kind of voting on the best policy.

4.4 Developing the materials – the process

The materials (content and resources) for the Doing Dialogue events were developed using the following process:

- liaison with the Nuffield Council on Bioethics (NCoB) to identify the topics and key questions
- writing workshops
- reviewing and trialling
- producing hard copy resources.

4.4.1 Choosing the topics and specific consultation questions

As we were working with the NCoB, and submitting evidence to their consultations, our choice of topics was limited to those being considered by the NCoB during the project.

However, the consultations on public health and premature birth had fairly wide scopes, so we were able to select the scope of each event. We selected two to four questions for each event from the bigger list of questions being asked by the NCoB. These were selected by considering:

- how they related to the curriculum in England and Scotland
- whether or not we felt students would be interested in those questions and topic areas
- whether or not teachers had indicated that they would bring students into a science centre to discuss those topics.

4.4.2 Writing workshops

During the Doing Dialogue project, two writing workshops were held. A writing workshop is an immersive experience, designed to enable the project team to fully engage with and contribute to the project. In the Doing Dialogue project, the workshops focussed on the development of the content for the debate events, but they also covered issues around evaluation, consultation and training.

All members of the project were invited to attend the workshops and dates were chosen based around availability of the team. The aims of the workshops were to:

- allow team members to get to know each other
- discuss the topics specified by the Nuffield consultation papers
- develop activities for a full day event for each topic
- ensure that the event would be attractive to schools – by inviting teachers and ensuring curriculum relevance.

Writing workshop 1: County Durham

The first writing workshop was held in a large house in Barnard Castle. We wanted to have enough room for all 11 participants, space to work, space to escape and a large kitchen.

We rented the house for five days, Monday to Friday. The first participants arrived on the Monday afternoon.

The event was run by Savita Custead – a very experienced facilitator - and Rosalind Mist - who organised the logistics and catering. It was useful to have two people in these roles, as it meant that the workshop ran smoothly.

During the week, we had no internet access, but we had brought a variety of books, papers and articles with us, and everyone had some background reading to do.

Savita Custead planned the writing process carefully, starting with an exploration of what we wanted the event to look like, and then considering the topic areas. Each day was split into sessions, and we had various breakout groups. At the start of the week, the breakout groups planned the event for each of three topics. Towards the end of the week, the breakout groups worked on each of the different tasks for a given event. These were recorded on task sheets, so a record of each task was kept (see Appendix I). The break out groups frequently reported back to review progress.

In the middle of the week, a teacher came to join the group. Phil Davison from King James School, Bishop Auckland, had previously worked with the team from the Centre for Life, and he and his school had attended debate and dialogue events at the science centre. The group presented the planned events, and the teacher discussed how it would work with his school. This outside view was very useful, as the events were being designed for school students.

By the end of the week, we were writing up the various tasks onto laptops and creating 'to do' lists for Sarah Robinson and Jenny Search, who were tasked with completing the first draft of the materials for the first event on premature birth.

The writing workshop was very successful; it acted as a team-building event for a group of people from different organisations, who would be working together over the next two years. It also meant that all the organisations were fully involved in the development of an event that they would be using, possibly for several years. It created a strong sense of ownership over the materials, and everybody felt that they had contributed to the development of the materials.

Writing workshop 2: Manchester

The second writing workshop took place over two days in a youth hostel in Manchester. The team felt that much of the planning work had already been completed at the first writing workshop, and also that as they were already a strong team, the process could be shortened.

The format was very similar to the previous writing workshop, but with slightly smaller groups, and with catering being provided by the hostel.

Most of the team arrived the evening before day one, and started planning the details of the event on public health and vaccinations on day one. Two members of the team arrived in time for day two, and they acted as a review team, reviewing and commenting on the plans developed on the first day.

This review process was useful, but there was not enough time to complete the first draft of the materials for the event. The team felt that perhaps two days was slightly too short, and that maybe 2 and a half or three days would have resulted in a more complete version.

Also, the person contracted to finish the draft of the materials was unable to attend the writing workshop, and this lengthened the time taken to complete the final materials, as more time was required during the testing phase of the project.

4.4.3 Reviewing, testing and trialling

An outline of the event was produced by the end of the workshop. This included a list of tasks with their suggested priorities. Each task listed any further research or resources that were needed. After the workshop the Centre for Life, which was responsible for finalising the content, prepared a draft version of each event.

Members of the project team took this draft version into schools over a period of a week. The host science centre (the Centre for Life for the first debate and Thinktank for the second debate) invited schools via email, using their own contacts lists.

The content development team reviewed each task with groups of classes of students and with teachers. The team visited a several schools during the week. When changes were needed, these were made - often over night - and the new version of each task was tested the next day. At the end of the week, the full debate was tested with a school to ensure that it flowed well, and was achievable in the time required.

Following this trialling process, we were also able to test each debate in a science centre. It was also sent for review by the project team, and by members of the relevant Nuffield Council on Bioethics working party.

4.4.4 Producing sets of resources

Once the reviewing, testing and trialling process had been completed, a full, final version of the materials was produced and shared with the project team. After they had signed off the materials, the team at Glasgow Science Centre organised the printing of the final version.

The hard copy version of the debate was printed onto A5 cards. These cards are stored in small cardboard boxes, with each task being separated by index cards. This format was chosen because following previous debates, the science centres had asked for a hard copy version, that was easy to store and use during an event. Task cards and facilitator cards have different coloured tabs. Resources lists and sample timetables are provided in the boxes.

5 Resources created for the project

The resources for the debates and consultations were created as described in the preceding chapter. Each science centre was provided with a full set of resources, including a timetable, checklist, background materials, student activity cards and facilitator notes.

The full materials are available on www.scizmic.net. They are also available as a box set from Ecsite-uk.

5.1.1 Premature birth: decisions at the edge of life

Outline of activities

Preparing Visiting speakers

This is a preparation and brainstorming task.

In our experience, many students do not feel confident to ask a speaker a question in front of a large audience. In this task, the smaller groups are given time to prepare questions for the speakers, which they then ask when the speaker visits their group. The students are given a couple of examples to get them started. This task enables the discussion to start quickly, and to be focussed.

The facilitator generally starts this task straight after the talks. It enables the facilitator to gauge the level of the existing knowledge of the group. It is also a fairly straightforward task that everyone can contribute to right at the start of the day and is used in other debate events run by the centres.

Understanding the Pregnancy timeline

This is a sorting task, designed to bring in basic information at the start of the event and to level out knowledge.

The aim of this activity is for the group to learn what is meant by premature birth, and the varying degrees of premature birth. The group are provided with images of the stages of development of the baby and with labels. Supplementary information asks them to add in key dates, such as 'full term', 'premature' and 'extremely premature'. The groups keep this timeline visible and use it as a reference point in later activities.

We have found that teachers find this activity useful, as it consolidates existing knowledge about reproduction.

Exploring why babies are born prematurely?

This is a sorting exercise, which draws out misconceptions from the group.

There are two aims for this activity. In the first place, it is to help the group understand the term 'risk factor'. The second aim is for the group to find out which risk factors are important in terms of premature birth. The group are given a series of risk factors, and they have to determine which are known causes, possible causes and 'not a known' cause.

This task also highlights some areas of healthy living, such as the dangers of smoking during pregnancy.

Discussing premature baby case studies

This is a discussion activity.

The aim of this activity is to introduce the students to the relevance of the topic. This is achieved by looking at fictionalised case studies. The case studies were developed with the help of Bliss, the premature birth support charity. Students are split into smaller groups, and each read a different case study. They then think about some key questions, which are used to enable the breakout groups to summarise the key points of each case study back to the whole group.

The activity introduces some of the effects of being born prematurely. This has to be handled sensitively, as it is likely that a member of the groups was, or knows someone who was, born prematurely. This activity is one the team would like to develop further by looking at ways to reduce the amount of text. For example we have considered using audio or video.

Considering Disabilities task

This is a discussion exercise

The group are asked to think about the children in the previous case studies and others they know of with a range of disabilities. Students are asked to think about the word disability and what it means. They are then asked to think about what those children need in terms of care, both now and as they grow older. Background material is supplied.

This is the first time the students are asked to express their views about the topic. At this stage, they are thinking about and discussing a very limited set of questions, rather than having a broader discussion.

This task was prepared with the support of Bliss, the special care baby charity http://www.bliss.org.uk, and the science centres' access and inclusion officers.

Exploring Personal viewpoints

This is a discussion and sorting exercise.

The aim of this task is for the students to consider whether life-saving interventions should be made during the treatment of premature babies. To do this, students imagine themselves to be in another person's situation. After clarifying what we mean buy life-saving intervention, students are provided with a series of fictional statements from different characters. They have to decide whether they think the character being discussed is for or against life-saving intervention.

This task begins the discussion about the key issue the debate is investigating. However, at this stage, students are able to voice and explore their perceptions of other people's opinions, rather than having to voice their own opinions.

Considering Quality of Life

This is a large discussion and ideas task.

One of the key questions this debate is trying to address is what makes a good quality of life for a baby. To do this, the entire audience is gathered together, to work through a series of brainstorming questions. Rather than focus on babies, quality of life is put in the context of the whole spectrum of life, with students thinking about babies, teenagers, 'twenty somethings', parents and grandparents. Large sheets of paper with age category headings are placed around the room.

First they are asked to think about what we mean by quality. They then write a long list of things that each age group needs to have a good quality of life. They move around the room reaching a new age category and are prompted with questions in order to generate as many ideas as possible.

Finally, the ideas are arranged into three categories: essential, desirable and luxury.

This task has proved very successful and is considered a core task. It has the potential to be used in discussion events relating to other topics.

What do you think?

This is a role-play task.

Again the students are placed into roles, so that they give their opinions based on another character. The group is to decide what happens to a particular baby. The case is based on Charlotte Wyatt. The roles are: doctors, lawyers and parents. Each breakout group has a set of questions, and relevant background materials. Recording is done via filling in speech bubbles on pictures. At the end each group feeds back and to determine whether or not they agree on the answers to the questions posed.

Hospital decisions

This is a research and discussion task.

Students are given the details of five people and have to decide, who should have the one intensive care bed available. It is posed as an extreme problem, and looks at the costs of caring for a baby in an intensive care unit and the quality of life that the baby could expect to have if they survive.

This is a very difficult task, and is designed to highlight that doctors have to make some very difficult decisions, with no 'right answers'. Three of the case studies were real. This task was reviewed by Bliss.

The country you are born in matters

This is a discussion task.

In this activity, students look at the policies in the USA and the Netherlands towards giving treatment to premature babies. At the time when this debate was developed, these two countries had very different approaches. It is a very quick, snappy task.

The project team have found that highlighting the differences in the law in different countries to the students is very valuable: if different countries can't agree on the answers to these questions, it is no surprise that students can't.

Students deciding on Policy

This is a consolidation and synthesis task.

In this task, the group have to decide on a policy about whether care should be given and/or withdrawn from premature babies. It was a key outcome to be fed into the NCoB evidence.

The group are encouraged to work towards an agreement, and when possible each group presents its 'policy' to the others.

Match the stats

This is an optional task that follows the *Pregnancy Timeline*. Students are asked to guess the survival rates for babies born at various stages. Facilitators can drop this if their group is slower or add it in at a later stage if they feel students require more background information.

Media comparisons

This task examines at least two media articles, and asks the students to highlight areas that are fact and those that are opinion. It is most often used when there are topical stories in the media.

5.1.2 Vaccinations: decisions at the sharp end

Outline of activities

Meeting the experts

This is a preparation and brainstorming task.

In this task, the smaller groups are given time to prepare questions for the speakers, which they then ask when the speaker visits their group. The students are given a couple of example questions to get them started. This task enables the discussion to start quickly, and to be focussed.

The facilitator generally starts this task straight after the introduction. It enables the facilitator to gauge the level of existing knowledge of the group. It is also a fairly straightforward task that everyone can contribute to right at the start of the day. It is used in other debate events run by the centres.

What is an infectious disease?

This is a matching task, designed to bring in basic information at the start of the event and to level out knowledge.

The students have to match pictures of a person with a disease with the name of the disease.

The aim of this activity is for the group to increase their understanding of what an infectious disease is. As this task involves discussion it also helps the group to bond.

What is a vaccine?

This task provides and consolidates information.
Students are asked to share the information on the cards about what antibodies, antigens and vaccines are. They make pictures of a disease antigen, the antibodies it would produce and a vaccine for the disease.

This task provides information to those students who don't already have it and acts as revision for those who do. It is important that the students understand the concepts outlined in this task so that they can fully contribute to the discussions later on.

Vaccination scenarios

This is a sorting exercise.
Students sort cards into two scenarios – one of a vaccinated person and one of a non-vaccinated person. The task helps the student to understand the process of being infected by an infectious disease and the potential outcomes.

Vaccination timeline

This is sorting activity.
The aim of this activity is to introduce the students to the current vaccination timetable, and to show them what vaccinations are currently routinely given in this country. This activity can also introduce discussion on changes in the programme, for example many of the students who have taken part in the activity have received a BCG vaccination for TB but this is no longer routinely given to teenagers.

The smallpox story

This is a role-play drama task.
The aim of this activity is to introduce the students to a number of concepts in a fun and entertaining way. It is also an energy raising activity.

The groups of students act out scenarios to illustrate the following situations; life before the smallpox vaccination, Edward Jenner's first smallpox vaccination, global vaccination for smallpox and the concept of herd immunity.

The mini dramas are performed for the other groups of students so that all groups can gain an understanding of all the scenarios.

Who pays?

This is a role-play discussion task.
Students take on the roles of various government departments to decide how funding should be allocated to protect the country against avian influenza virus (bird flu). This task enables students to understand the complexity of decision making relating to funding.

MMR

This is a discussion task.
The aim of this task is to show students the range of opinions relating to the MMR vaccine. This task also highlights how opinions can be reported in different ways. The students discuss the role of the media in the portrayal of topics such as MMR.

The second part of the task uses a case study to consider the MMR vaccination in more depth. In this task the students get to state their own opinions relating to the MMR vaccine and also begin to think about compulsory vaccination and what their opinion is of it.

Compulsory Vaccination

This is a discussion task.
In this task the students focus on compulsory vaccination. Discussion is prompted with the ordering of a number of cards with opinions on compulsory vaccination on them. The students then discuss their own opinions on compulsory vaccination and consider the implications of a compulsory vaccination programme.

Policy presentations

This is a consolidation and synthesis task.
In this task, the group have to decide on a policy that answers the question 'should vaccination ever be compulsory?' It was a key outcome to be fed into the NCoB evidence.

The group are encouraged to work towards an agreement, and when possible each group presents its 'policy' to the others.

What is an immune response?

This is an optional task, which follows the 'What is a vaccine' task.
This task has the format of a competition or race. The group is divided into two teams. One team is considered to be vaccinated, while the other team is not. Each team has to race to cut out antibody shapes from paper in a fixed time period. The group that are vaccinated are given instructions to make a specific shape of antibody, while the unvaccinated group have to make a range of shapes. The groups then discuss the results.

Facilitators can drop this if their group is slower, or add it in at a later stage if they feel students require more background information.

5.2 Evaluation of the process and resources

5.2.1 Writing workshops

Following the writing workshops, the content development team and Savita Custead reviewed the process. Their findings are summarised below.

Participants

From this project and subsequent projects, we have found that between four and 10 attendees make for the most productive sessions. We found it useful to have a mix of people who either had experience developing debates or were experts on the topic.

Preparation

We let the participants know if they had to do any preparation before the workshop. In our case, they had to read relevant background documents, to bring some extra background with them (e.g. curriculum notes, text books) and to talk to colleagues about the debates. In addition, a couple of members of the project team also took on the responsibility for doing more thorough preparation and research prior to the workshops.

We found that it was unrealistic to get everything done in one 3-5 day workshop. In later workshops (including the second Doing Dialogue workshop, and other project writing workshops),

participants were happier knowing that this was a 'feeding in' process and that more time would be needed by some members later.

Venue and facilities

Choosing a venue for the writing workshops was important. We now believe that the best venue is a neutral location. This means that the participants do not get distracted by staff (and issues) at their own centre. The venue should be comfortable and easy to get to. We held a residential writing week in a large house and a workshop using facilities in a youth hostel.

We used a variety of things during the workshops: flip charts, pens, whiteboards, sticky notes and blue tack.

Facilitation

The workshops were guided by a facilitator who added a structure to the days and kept everyone on track. The team highly recommend this approach. The facilitator could be external, or come from one of the organisations involved. In our project, Ecsite-uk had recruited a facilitation expert (Savita Custead) to assist with developing the facilitation skills workshops, and she lead the writing workshops.

We recommend that the facilitator should understand the objectives of the workshop and ensure they are met in the time allowed. In our workshops, the facilitator is not just a neutral person but someone who knows the topic and more importantly understands how to put together a process and a plan for the group to follow. The plan should be flexible throughout the workshop but should be prepared beforehand.

Length of workshop

We have now run writing workshops from 2-5 days and have found that the amount of time required depends on a number of factors:

- **The general knowledge of participants about the topic.**

  If the topic area falls outside the expertise of the group, it may be necessary to understand some of the background issues, or pre-reading materials may need to be gathered and circulated. It may also be necessary to source 'an expert' to attend or be on call during the workshop.

- **The breadth and certainty of the topic.**

  We consider whether time is needed to discuss which topic(s) to include in the debate or whether this already decided.

- **The experience of participants in developing events.**

  The process is definitely quicker if the people involved have done it before. For example, The SITA debate writing was very quick. If participants hadn't done it before they would need to be briefed more fully and probably go through the steps more slowly.

- **The number of hours people are willing to work each day and if the venue allows flexible working hours.**

Everyone worked very late during the first writing week. However, that's not something that it would be fair to automatically expect on a project and we were only able to do so as we'd hired a suitable space. We also made some time for breaks.

- **The amount of time people can spend out of the office in one block.**

  We were lucky for our first workshop to spend four and a half days together. At the beginning of a two year project, this was very beneficial. However, it is something we have not been able to repeat, and we have since used writing workshops 1-3 days long.

We have found that it is not necessary for all participants to stay for the whole event. In fact, it may be more efficient to have a larger number of people for the initial brainstorming part of the workshop, and then reduce the number involved. We have found that the second part of the workshop which involves consolidating ideas and putting together the final event can be done by fewer people.

5.2.2 Developing the materials for the debate

As well as reviewing the process of developing the materials, the team have also considered how the events work, and in particular how the materials are structured.

Aim of the debate

The first thing that needs to be achieved before or during the writing workshop is a decision on the aims and objectives of the debate. For example, in the vaccinations debate, the final task for the groups was to answer the question 'Should vaccinations ever be compulsory?' Knowing this question made it easier to ensure the tasks designed for this debate were providing relevant information and can steer participants to start discussing appropriate issues surrounding this question.

During this project, we have found that not having a clear 'For' or 'Against' angle throughout the whole debate works well. Presenting information in a non-biased way and getting participants to think about where it has come from works just as well.

Timetable

Each set of materials also includes a timetable for the event. This shows how long each task takes, and gives a suggested order for the day, which can be altered by each centre if necessary.

Background information

As mentioned above, the day usually starts by introducing the speakers to the group. A very short introduction rather than a 'lecture' gives more time for tasks and more time for one-to-one engagement with the speakers. From previous debates, we found that participants did not absorb much of the information delivered to them in a lecture format. Background information is better disseminated using an interactive task.

If the outcome is for the groups to write a policy for the UK on a particular issue it may be helpful for them to see policies from other countries.

Working with speakers

It is useful for the speaker to be provided with a 'Speaker brief' so they know the age group, number of participants etc that are attending. Example of these can be seen in Appendix J. Most people are good at talking to teenagers on a one-to-one basis but more variable on giving talks to larger groups. Instead, during the day each group is allocated time to talk to the speaker. This gives the participants a valuable opportunity to discuss issues with an expert.

Language

When developing the Doing Dialogue debate materials, we have had to use a number of technical terms. These terms are usually unfamiliar to the participants, but they may also be unfamiliar to the facilitators and event organisers. We have included glossaries and also explained technical terms on the relevant task cards.

A variety of tasks

During this project and others, we have developed a large number of types of tasks, each of which is designed to encourage and support students discussing contemporary science. A 'menu of tasks' can be found in Appendix K, but it is important to realise that developing a dynamic and engaging event takes more than just picking tasks from this menu. The tasks need to be adaptable for the topic, the age group, the venues and the tasks before and after them.

We have found that a fairly linear progression of tasks works well. If possible they should also flow in a logical order, with later tasks building on what has been learned from previous tasks.

Having optional tasks for groups that are fast or need further clarification is a useful. However, when working with a large number of groups (we have had 10-12 groups working at the same

time), the day can be very confusing if too many groups are doing different things. Interestingly, our testing schedule also showed that participants did not like it if their classmates got to do different activities within the same event.

Although the format the project team use for their debates will probably continue to evolve, there are a number of generic task ideas that we can draw on (see the content options grid in Appendix K). There are several ways we cluster the tasks:

- research-based tasks and discussion-based tasks.
- Background, discussing other opinions and building and sharing our own opinions

There can also be some overlap between tasks. An ideal structure for a debate day would be to start with purely research-based tasks and to gradually introduce more discussion based tasks until the end point is purely discussion based.

A variety of tasks is necessary in order to engage students with different learning styles. The success of different tasks can be identified by evaluation. We found that most tasks tended to be equally picked as 'favourites' or 'least favourites' which we felt reflected participants with different learning styles respond to them in different ways. The tasks that were least liked were the introductory tasks which some students complained were too basic. However, the team felt that it is important to make sure that all participants enter the discussion tasks with some common background knowledge.

We would recommend that during the writing workshop an outline sheet for each task is created. This should list:

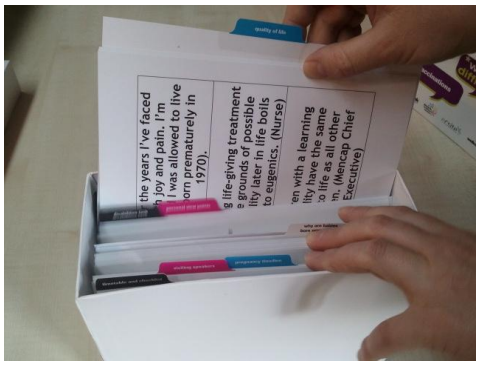
- the title of the task
- the length of the task (in minutes)
- learning objectives
- learning styles the task involves
- basic outline of the task
- any further research that needs to be done, including any useful references
- any resources that are needed for the task.

Measuring Opinion change

Something we have not used much in our Doing Dialogue debates are tasks that aim to measure opinion change during the course of the event. It would be interesting to include tasks that could find out if participants opinions have changed during the day and whether or not they gather more evidence to justify their opinions. In other debates we used mind maps to attempt to explore the journey each student goes on.

5.2.3 Producing hard copy resources

After trialling and finalisation of materials, we have produced packs of materials for each organisation involved. We recommend that the final hardcopy pack includes all of the task and facilitator cards and any other printed resources required for each group.



For each task we created the following resources:

- A task card telling the participants what to do.
- A facilitator card informing the facilitator of any special instructions for the task, for example 'split the group into pairs'. This can also contain short pieces of relevant background information or explanations of technical terms. Any 'answers' can also be put on the facilitator card – the idea is that participants do not see this card.
- Cards containing any information required for the task, for example, quotes, images or simple diagrams.
- Extra information, for example pointers to newspaper articles (or hard copy photocopies).

For the Doing Dialogue project we used boxes which contained A5 cards with dividers between each task. The boxes look professional and mean that all the resource can be stored in one place. However, some facilitators found them a bit fiddly to use. Other formats trialled include A4 and A5 ring binders with dividers or plastic wallets separating each task. There are pros and cons with all systems we have tried.

It is important that task cards can be added and removed from the packs, so that the content of the events can be varied e.g. if there is a shorter length of time allowed or if the students have particular needs.

We would recommend the professional production of resources. Interestingly students treat materials with more respect if they have been produced professionally which means that the materials last longer. It is important that the facilitator notes are clearly distinguishable so that the students do not accidentally use them. In some other debates (the second version of the stem cells debate) facilitator notes have been in a different format (A4 paper as opposed to A5 cards) so that they cannot be confused with the student materials.

5.2.4 A shortened event

Another thing to consider is creating a shortened version of the event that could be used during science festivals, with community groups or as outreach. We have needed these for the BA Festival of Science, and also for some outreach events and dissemination activities. It has been

fairly straightforward to pick out some essential tasks or a single topic strand to produce an event outline which lasts 1-2 hours.

5.3 Conclusions

The tasks that form the debate days can be considered to fall into three categories. These can be referred to as Input, Process and Output. The initial input tasks provide information or allow participants to access information. The process tasks allow participants to process that information and consider the ethical implications of the topic. The output tasks give students the opportunity to show and/or record their findings and their opinions on the topic.

The dialogue team have been involved in developing a number of debate activities and we have collated a list of the tasks involved in each debate (See the contents options grid in Appendix K). Some types of task are suitable for use with many topics while some types of task will suit only specific topics.

The Centre for Life have run a teacher CPD session using the tasks from debates to provide teachers with examples of how to discuss ethical issues in science and how to structure their sessions. The CPD was very well received and we feel that there is a demand for more sessions of this type, to help teachers meet the needs of the new science curriculum.

5.3.1 The events

- **Whole day events work best**

  The centres involved in the Dialogue project found that half-day events do not work as well as whole day events. We think that the students and teachers are still essentially away from school for a whole day so half day events are less appealing than full-day events. We normally run events from 9:45 am (for a 10am start) until 3 pm which fit in with the school day.

5.3.2 Writing workshops

Our experiences during this project suggest that collaborative creation seems to produce a more coherent and balanced debate than can be produced when working alone. We found the following benefits:

- **The process of shared work and learning lead to a strong sense of shared ownership of the materials produced.**

  This is particularly noticeable when we compared the materials from this project with three previous projects (Stem cells, nuclear energy and nanotechnology), where the materials were developed by Ecsite-uk with one or two science centres. In these earlier projects, centres running the debates have made more changes to the materials than for these events.

- **Individual learning styles & preferences are easily counteracted when working in groups so a wide range is included in the final materials.**

  We found this benefit very early on in the project. At the first writing workshop, we discussed our own learning styles as we brainstormed the task ideas. It became clear that individual preferences for a particular style of learning had influenced those who had previously developed (and used) debates in this style. As part of the writing process, we now construct a table of activities versus learning styles to ensure that the debate covers as wide a range of styles as possible.

- **Ideas that can take a long time to develop into a task when working alone are soon worked up in groups.**

  Simply by having a variety of people in the room, ideas which one person may have considered and then slowly developed were able to form much more quickly.

- **Provides an inbuilt testing system**

  Great ideas are developed quickly and bad ideas are weeded out with speed.

- **Allows input of different (e.g. English and Scottish) curricula.**

  In this project, we were always conscious that we were working across two different curricula. In order to effectively market the events to schools, we had to ensure that the materials would be beneficial to both sets of students and teachers. In previous projects, we have simply ensured that materials were reviewed by a specialist from the other nation. However, in this project, we found it more efficient to factor this is at the start, and it helped focus our choice of topics.

- **Regional/local information can be included.**

- **The workshop also provides an invaluable professional development opportunity for science centre staff.**

  Whether being trained, or part of the project team, working with colleagues from other organisations allows people to see their work from other perspectives and with fresh eyes. It allowed the development of contacts which have then been utilised within other collaborations (e.g. Life, MOSI & Thinktank collaborating on SITA). The workshops are also a learning experience in their own right and help to develop content development and event planning skills as well as knowledge of science content.

  Some challenges for the project team were:

- **It was not always easy to find a time when everyone could get together**

- **Even if the participants were 'available', participants also had to negotiate time away from the organisation.**

  This was made harder by aiming to always have two people involved from an organisation, and it was not always possible to fulfil this aim. However, once the team reported on the benefits of the process to senior management, the team were able to attend future writing workshops for this and other projects.

- **Materials production is not so easy to do collaboratively.**

  Although the writing process works well as a collaborative process, ultimately an individual or a small team needs to have the final responsibility for producing the materials. In our project, the Centre for Life took this role.

The Doing Dialogue team feel strongly that the benefits of this particular collaborative writing process are so strong that it was worth trying to overcome these difficulties. In fact, they've all since used this model in other collaborative projects.

The Centre for Life, Thinktank and MOSI collaborated on a project funded by the SITA trust. Part of this project involved the development of a dialogue event. The Doing Dialogue writing workshop model was followed for the development of this event. A two-day writing workshop was held in York (neutral location, equal (ish) travel time to each centre) with participants from each centre attending.

6 Marketing

6.1 Overview

Glasgow Science Centre was the lead science centre on this strand.

The Marketing strand of the Doing Dialogue project involved the consortium reviewing and comparing existing marketing strategies and then developing a joint approach to marketing dialogue activities to young people.

Before we began marketing the Doing Dialogue events, Glasgow Science Centre circulated a questionnaire to the Doing Dialogue consortium. This explored the marketing strategy of each science centre. The results of this piece of work are summarised below.

The outcome of this strand was a marketing tool kit that could be used by these centres, and others, when developing marketing materials for debate and dialogue events and activities for 14-19 year olds. This marketing tool kit is included as appendix L.

6.2 An overview of dialogue marketing in the centres

Glasgow Science Centre asked each centre in the Doing Dialogue consortium how they currently market debate and dialogue events to schools. They found that:

- all centres market debates as part of a programme or in a teacher guide
- most centres (3/4) post individual flyers for each debate event and advertise on their website
- half the centres publicise dialogue events via email and letter.

When are dialogue events marketed?

This question was important to establish when marketing materials need to be produced. All the centres marketed debates at the beginning of the school year. Most also do so at the beginning of the relevant school term and again later, if they feel it is appropriate.

Flyers and letters

In order to plan the Doing Dialogue marketing strategy, the team also explored how and when letters or flyers are produced, as they wanted to develop a timetable that would work for all the centres involved.

- All centres send letters or flyers to a select mailing list and to all relevant schools in the surrounding area.

UP FOR DEBATE! SERIES

9.45am-3.00pm

£5 +VAT per pupil.

Our Up for Debate! series supports A Curriculum for Excellence by giving S3-S6 pupils the opportunity to develop informed points of view on complex scientific issues and communicate their opinions in different ways. All sessions will be facilitated by experienced GSC staff and supported by scientific experts. These debates are cross-curricular supporting Biology, Modern Studies, PSD and Religious, Moral and Philosophical studies.

Newborns: Decisions at the Edge of Life

2nd Oct 07

Can you pinpoint the beginning of a life? Should premature babies be kept alive even if the health risks and financial costs are high?

Vaccinations: Decisions at the Sharp End

3rd Oct 07

Should vaccinations be made compulsory to halt the spread of infectious diseases?

GM Crops: Food for Thought

21st Nov 07

The world population is set to rise from 6 billion to 9 billion by the year 2050. How will we feed the world in the future? Could GM crops be part of the solution?

Stem Cells

22nd Nov 07

Stem cells have amazing potential. Those with the greatest potential come from embryos. In the future these may be used to treat illnesses such as Parkinson's disease and spinal cord injury. Is this acceptable?

To book call **0871 540 1003**
or email **laura.murray@glasgowsciencecentre.org**

How are dates chosen for dialogue events?

With four centres delivering events during the project, the team wanted to explore whether there is a best time and date to host a large dialogue or debate event. All centres agree that the main factors to consider are:

- space in the school calendar, avoiding exam times
- timing in the curriculum
- space in the science centre calendar

Other items vary between centres, for example MOSI has found that schools are more likely to attend dialogue events at the beginning or end of the school week and run dialogue events on Mondays. Thinktank has found that February, March, June and July give the best uptake for debate events.

Age and stage of pupils

The team also explored the age and stage of pupils targeted by the centres. There was a big difference in target audiences but all centres market to teachers of different age groups using the same materials.

- Thinktank targets Key Stages 3 and 4, and science and citizenship students
- The Centre for Life targets all ages and subjects
- MOSI targets Key Stage 4 science students
- Glasgow Science Centre targets biology and human biology students aged 14-16.

Do school groups pay to attend dialogue events?

Thinktank and MOSI charge £8 and £3 respectively per pupil. Glasgow Science Centre sometimes offers free debates and sometimes charges £3/4 depending upon demand and the Centre for Life runs free dialogue events.

It can be the case that charging for an event adds more value to it and as a result schools are less likely to cancel.

Travel and coach costs

The cost of travel is prohibitive for some schools. Glasgow Science Centre received some general transport funding from the Scottish Executive for underprivileged schools to visit. The uptake for this improved dramatically after being advertised via an e-newsletter. This model might increase numbers as part of a dialogue package.

6.3 The Marketing Resources (toolkit)

The materials provided for marketing 'Doing Dialogue' events included:

- press releases
- text for letters and flyers
- template response letters to schools
- itineraries
- curriculum links
- logos for all partners.

The purpose of the toolkit is to highlight the most effective ways of publicising dialogue events for young people in order to improve marketing and uptake in the future.

At the end of the project, the team reviewed the use of the toolkit provided. The centres found the text for flyers and the curriculum links were the most useful items.

This marketing tool kit is included as appendix L.

6.4 Take up of events

The team wanted to consider whether there were any differences in take up of events - either run by the different science centres, or by topic.

	MOSI	GSC	LIFE	THINKTANK
Newborns	60%	80%	84%	50%
Vaccinations	55%	50%	92%	50%

The newborns debate appears to have been more attractive to schools audiences, although vaccinations is more closely aligned to both the Scottish and English science curricula. However, the materials are relevant to a wider range of subjects, including PSHE and RE, and this could account for the difference in uptake.

6.5 Marketing meeting report

Towards the end of the project, marketing managers (with responsibility for education marketing) were invited to a meeting at Thinktank to discuss their experiences of marketing events for teenagers in school.

During the discussion the participants shared their experiences of this and other projects and came up with a list of techniques that have worked before, and could be applied to similar projects in the future.

- Including teacher quotes on marketing materials to add professional credibility.
- Showcasing events at teacher preview events, which some centres already run.

- E-marketing. Keeping a database of teachers interested in dialogue activities, and specifically targeting them by e-newsletters
- Using centre websites as interactive tools. A flavour of the debate experience can be offered via interactive voting games. See http://www.smm.org/buzz/ for details.
- Incorporating a CPD element into debate days. This would raise the profile of the project by ensuring that activities continue within the classroom and would add value to events. One centre has experience of this approach.
- Consulting teachers on the best time of year to release pupils from school.
- Targeting a wider age and subject range of pupils
- Launching a programme of dialogue events nationwide e.g. in the Times Educational Supplement (TES) or at the BA festival.
- Inviting a journalist to dialogue events. This may raise awareness of future debates.
- Offering incentives to attend. For example, a free coach, free lunches or money off subsequent trips would encourage uptake.
- Branding debate rooms using screens and banners in order to give a professional look.
- Raising awareness amongst teenagers by advertising:
    - on social networking websites such as MySpace, Bebo and Facebook.
    - in community press
    - in libraries during exam time
    - on button badges that could be given out to thank participants.

6.6 Conclusions

During the project, the team have gained experience of how to advertise and market debate and dialogue events to schools. They feel that working with teachers during the development has enabled the team to carefully link the debates to changing and broadening curricula, and in the future will encourage them to target other departments within schools, thus widening the potential audience.

Common branding across the debates run in science centres has proved popular amongst the team and the participating schools as it has helped them to feel part of something bigger.

In the future, the team want to explore marketing to independent youth audiences and to work with adult groups. This will involve more research about what kind of contemporary science discussion and debate activities would attract them to such an event as well as significant changes in marketing strategies.

7 The Dialogue events with students

7.1 Objectives

- Each science centre to run two events
- 200 teachers to be reached
- To reach 2600 students through events
- To have experts successfully involved in the event

7.2 Summary of participation

In total, 1414 students participated in small group facilitated dialogue events. These occurred across 17 main events plus two trial weeks. 118 teachers and 10 experts took part in the events and trial events.

The early events for each topic fed directly into the NCoB consultations (up to March 2006). Later events refer back to the consultation.

Each partner organisation committed to running at least two debates during the period of the project. All the centres continue to include the debates in some form in their schools' programmes.

Date	Science centre	Debate	Attendees
November 2005	Thinktank	Premature birth	25 students 4 teachers 0 experts
February 2006	Centre for Life	Premature birth	50 students 5 teachers 1 expert
February 2006	Centre for Life	Premature birth	47 students 5 teachers 2 experts
February 2006	Centre for Life	Premature birth	200 students 8 teachers 0 experts
March 2006	MOSI	Premature birth	122 Students 8 teachers
March 2006	Glasgow Science Centre	Premature birth	70 students 10 teachers 2 experts
April 2006	MOSI	Vaccinations	94 students 8 teachers
June 2006	Centre for Life	Vaccinations	61 students 6 teachers 3 experts
June 2006	Thinktank	Vaccinations	21 students 5 teachers 0 experts
June 2006	Thinktank	Vaccinations	22 students 4 teachers

			0 experts
September 2006	Ecsite-uk	Vaccinations Held at the BA Festival	48 students 3 teachers 0 experts
September 2006	Centre for Life	Vaccinations	37 students 4 teachers 2 experts
September 2006	MOSI	Premature birth	55 students 3 teachers
September 2006	Glasgow Science Centre	Vaccination	90 students 9 teachers 0 experts
January 2007	MOSI	Vaccination	Cancelled following Josh's death.
May 2007	Centre for Life	Vaccination Adapted and run for an adult audience	6 adults 0 experts
October 2007	Glasgow Science Centre	Premature birth	45 students 4 teachers 0 experts
October 2007	Glasgow Science Centre	Vaccinations	Cancelled – no bookings
January 2008	MOSI	Premature birth	34 students 2 teachers

An additional 393 students and 30 teachers also took part during the trial events.

7.3 Events at the BA Festival

Ecsite-uk lead Doing Dialogue events at the BA Festival in 2005 and 2006. These events are facilitated by science centre staff. The science centres find this a useful opportunity to offer to staff (science communicators and explainers) who don't normally get the chance to 'get out of the science centre'. It gives them the chance to meet and work with peers from other venues, as transport and accommodation is covered by the project.

This is a valuable opportunity Ecsite-uk has been fortunate to be able to offer in previous and subsequent years as part of other projects. For example, in 2007, debate materials for the Inside DNA and Sound Matters projects was trialled and tested with science centre staff from the Centre for Life, MOSI, Thinktank and Glasgow Science Centre.

7.4 Evaluation

The events were heavily evaluated during the trialling and testing phase of the project. Each individual science centre then chose whether to use the evaluation forms developed by People Science and Policy (see Appendix L), or to use their own evaluation. For example, during the BA Festival, students and teachers filled in BA evaluation forms.

The PSP evaluations were collated for each of the consultation reports. They focus on the perceived relevance of the material to curriculum areas, and give a profile of the students attending the debates.

7.4.1 Teacher telephone interviews

Following some of the early events, science centres used the PSP teacher interview tool to gain further feedback from teachers (see Appendix N for a copy of the interview guide). A teacher interview tool (see Appendix O) was also supplied, but this remained unused due to the time restrictions on the teachers.

A sample summary of feedback from 4 teachers is included in Appendix P. Following these interviews, MOSI compiled a list of recommendations for the Doing Dialogue team. These recommendations included comments on the structure of the day, the marketing and for further events

Marketing and booking suggestions from teachers

- Make teachers aware that they will not (necessarily) be with the children
- Be more obvious on flyer about organisation of the day
- Autumn for older students
- Send flyers to RE teachers and not just Science
- Open it up to 6th form
- Note where to get booking form from on flyer

For future development

- Half day inset so teachers have the chance to look around Museum to plan future visits
- Carefully choose topics that fit into the new curriculum
- Run another stem cell debate and one on Nuclear Energy
- Decide on age of audience; possibly have two events for different age groups.
- Share resources in an Inset
- More religious viewpoints represented in the future.

7.5 Working with 1414 students

The number of students who took part in the debates was 1414. This was below the 2600 on the original proposal. This reflected the projects desire to have more in-depth and meaningful debate and dialogue opportunities with students. The original budget had been drawn up assuming the same number of events delivered and included staff costs, room hire etc, and equipment, rather than a cost per child.

To enable the level of debate to create meaningful debate for to feed into the Nuffield Council for Bioethics a number of the events were run for smaller group sizes. The project team felt that booking groups of up to 50 was a more appropriate use of staff and space rather than larger audiences of 100.

The centres are very likely to continue to use these resources, and many teachers asked for copies of the resources. The resources are freely available via the www.scizmic.net website, hosted by Ecsite-uk (see also http://replay.web.archive.org/20080513171010/http://www.scizmic.net/).

7.6 Conclusions

Each partner organisation ran at least two events, reaching at least 1414 students and 118 teachers.

The events proved to be popular at particular times of the year, and with specific audiences. MOSI was most successful at recruiting schools, and has gone on to have a regular series of debate events for young people.

The evaluation from teachers is particularly useful, and is being used by each centre to inform the development of future similar activities. This evaluation also echoed the earlier market research, highlighting the need to think more broadly about recruiting schools, and the possibility of extending the target audience more broadly than science classes.

8 Project management and Partners

Ecsite-uk was responsible for the overall project management of the project.

This has been an interesting project, involving close collaboration between Ecsite-uk and four UK partner science centres, working with the Nuffield Council on Bioethics, a large number of schools and teachers, science festivals, other science centres and museums, several evaluators and a host of other organisations.

To achieve this, Ecsite-uk held regular project team meetings, for example the writing retreats,, full team meetings, or in smaller subgroup meetings. These have helped to keep the project on target, and alert the team to any upcoming issues. Regular email bulletins have also kept the geographically distributed team with a shared vision.

8.1 The project partners

Each of the partners involved in the project has a different flavour and areas of expertise. In this section, we introduce each of the partner organisations.

8.1.1 Ecsite-uk

Ecsite-uk's purpose is to raise the profile of science centres and to establish their role as a forum for dialogue between science specialists and the public and as an informal learning resource for people of all ages. Ecsite-uk is a non-profit membership organisation and is a part of ECSITE (European Collaborative of Science, Industry and Technology Exhibitions).

Ecsite-uk encourages excellence and innovation in informal science learning by serving and linking its member science centres and museums and advancing their common goals. Ecsite-uk provides professional development for the science centre field, promotes best practices, supports effective communication, strengthens the position of science centres within the community at large, and fosters the creation of successful partnerships and collaborations.

Ecsite-uk has the following goals:

- To support the work of our 50 member science centres and science museums across the UK, all of whom aim to inspire and engage people with science.
- To facilitate the sharing of knowledge, skills, ideas and best practice between science centres across the UK, and with other European centres and worldwide networks.
- To encourage and promote dialogue between scientists and the public, empowering the public to contribute their views on scientific issues to policy makers
- To promote the role of science centres and museums as an informal learning resource for people of all ages and to enhance partnerships between them
- To be the single point of contact for the sector
- To raise the profile of science centres across the UK
- To advocate for Government recognition of science and discovery centres, and the acknowledgment of science as a cultural resource.

8.1.2 Glasgow Science Centre

Glasgow Science Centre (GSC) promotes Science and Technology through thought-provoking, fun and exciting experiences that inspire all to explore and understand the world around them. Opened by the Queen on 5 July 2001, GSC consists of three main buildings: The Science Mall, the IMAX Theatre and the Glasgow Tower.

The Science Mall is the main exhibits building and houses 100's interactive exhibits over four levels. It includes a 120-seat planetarium, science show theatre, laboratories, climate change theatre, workshop areas, children's reception, cafes and viewing areas.

IMAX Theatre was Scotland's first 2D/3D cinema seating 350. At 24m wide and 18m high, Scotland's biggest cinema screen is one of the most powerful cinematic experiences in the world. The Glasgow Tower has a viewing cabin 104 metres high offering panoramic views of Glasgow and the Firth of Clyde. Designed to rotate to face the prevailing wind, it is the only fully 360 degrees rotating structure in the world.

The centre has three strands of programming: education, outreach and community liaison. The aim of GSC education programme is to provide schoolchildren with dynamic, participatory, relevant and fun activities within GSC that meet Scottish Curricular requirements and support the emerging Curriculum for Excellence.

The Science Circus is a lively, fun and interactive GSC outreach activity that travels to nursery/primary/secondary schools and community centres all over Scotland. The Science Circus aims to be fully embedded within the mainstream structure of Scottish science education. This educational experience has been designed to have strong and genuine links to the emerging Curriculum for Excellence. The science shows and exhibits are uniquely placed to play a significant role in educating and enthusing children towards science in their school/community environment.

GSC strives to go beyond a reactionary approach to interaction with the public. We widen access to GSC by targeting individuals who are affected by (or at risk from) social exclusion. This is delivered by a programme of outreach in the community, themed events and by engaging marginalised people through community membership. The project is designed to make this outstanding visitor attraction accessible to as many people as possible by breaking down physical and socio-economic barriers.

8.1.3 Thinktank, Birmingham Science Museum

Innovation in science and technology underpins our life and changes the way we live. Thinktank sees this in Birmingham's past, in our life today and in what we know of the future. Thinktank is a place for learning and fun through exploration, engagement and historic artefacts.

From steam engines to intestines, Thinktank has over 200 interactive displays on science and discovery from the past, present and future. This includes the state of the art digital Planetarium where you can soar, escape and wonder as you immerse yourself in the stars, without placing a foot outside!

With a vibrant programme of entertaining shows, exciting workshops and extraordinary demonstrations there is enough to keep the whole family entertained.

At Thinktank they believe that learning and fun go hand in hand. Primary school children will particularly benefit from the hands-on displays and interactive environments throughout the galleries all designed to excite young minds. In addition to a visit to the galleries, the team of expert educational staff deliver a comprehensive education package to suit all curriculum needs.

There are 8,000 square metres of interactive galleries and displays spread over four floors within 10 galleries. Thinktank opened in 2001.

Last year they had 208,000 visitors to Thinktank and IMAX 70,000 of those took part in the education programme in Thinktank and on Outreach. 56,000 people visited the planetarium.

8.1.4 MOSI – the Museum of Science and Industry, Manchester

The Museum, occupying a 2.5 hectare site, is the largest science and technology museum to be situated in historic, industrial buildings in the UK. It is situated on the site of the world's oldest surviving passenger railway station: among its five listed buildings are the original station building and warehouse that formed the Manchester terminus of the Liverpool to Manchester passenger railway, which opened in 1830.

The purpose of the museum is to advance the education of the public by securing the preservation, restoration, improvement, enhancement and maintenance of features and objects of industrial, scientific and historical interest in Greater Manchester and surrounding areas, including the provision of a museum for the display of such features and objects and the organisation of meetings, exhibitions, lectures, publications and other forms of interaction relevant to the historical, scientific and industrial development of the Manchester region.

The Museum's facilities include: twelve permanent exhibition galleries; a temporary exhibition gallery; a community exhibition gallery; spaces to accommodate at least two other small-scale temporary exhibitions; a publically-accessible Collections Centre housing the archive/ library and a third of reserve object collections; an auditorium and a learning centre with six activity/ teaching rooms for delivering taught and other learning programmes to all ages, from under 5 year olds to FE/ HE students and adults. At present, the Museum's permanent galleries tell the story of Manchester's development as the world's first industrialised city and the impact this has had on the North West region, emphasising the industrial, scientific and technological achievements – both past and present – which have shaped our lives. The specific themes covered by the galleries are transport and communications, power and energy, science, industries (notably the textiles, heavy engineering and aviation industries) and the making of Manchester. A programme

to provide new galleries, facilities and programmes, along with the refurbishment of certain existing galleries, is underway in order to portray seven clear themes in which Manchester has played a leading role in their development, namely science, industry, transport, energy, people, communication and 'science alive'.

The interpretation of the Museum's galleries is enhanced by a regular programme of activities and events. These include historic machinery demonstrations, costumed interpretation performances, science and planetarium shows, 'meet the scientist' family events, adult lectures and debates, and the annual Manchester Science Festival – a 9-day Festival held at the Museum (the lead organisation) and other venues throughout the City in late October. The Museum's community development and outreach activities include a primary schools outreach programme and a summer 'science in the park' programme.

8.1.5 The Centre for Life, Newcastle

The Centre for Life is the only dedicated hands-on science centre in the north east of England. Set up as a Millennium Project, it is a registered charity and has been open for 7 years in the centre of Newcastle Upon Tyne. It is the public face of an innovative 'science village' that has transformed a derelict area of the city centre and contributed significantly to the city's regeneration.

Life's objectives are twofold: firstly, to inspire curiosity in science, to raise standards in science education and to engage everyone in the community in contemporary science issues and, secondly, to provide support and state of the art facilities on site for world class scientific research in medicine.

The science centre itself comprises a 3,500m^2 permanent exhibition supported by a 600m^2 temporary exhibition space. It has an 80 seat theatre for lectures and live demonstrations, a 65 seat digital dome theatre and a 48 seat 'motion ride' cinema. The education service has a suite of four teaching laboratories containing state of the art equipment and facilities for practical science activities. The science centre serves around 200,000 people each year, including around 26,000 educational users.

Life offers visitors a permanent interactive exhibition using physical and computer-based interactives supported by specially trained interpretive Explainer staff (all graduate scientists). The science theatre within the exhibition is used daily to present interactive science demonstrations. An Explainer leads a show based on practical demonstrations, many requiring audience

participation. The 'digital dome theatre' allows us to show computer generated immersive films or host a planetarium show for an audience of 65 people.

At regular intervals Life hosts special events weekends on science related themes e.g. 'Animals' weekend where conservationists, animal charities, local special interest groups etc come to Life. The Centre for Life also hosts an annual lecture series that brings leading scientists and science communicators such as Richard Dawkins, James Watson, Colin Blakemore, Matt Ridley and Bill Bryson to Newcastle.

It is important for today's highly technological world that all members of society have some familiarity with science and feel confident addressing it at some level and see it as part of our culture. Life's public programmes have been developed with these objectives in mind, but the centre also plays a role in contributing to formal education with the services it provides to education groups

Life supports formal education by offering support and enhancement to the provision offered in schools and colleges. Teachers bring their classes to Life to make use of equipment and expertise to which they would not have access in school. Schools can choose from over 50 curriculum-linked workshops aimed at different age groups from pre-school to post-16. These are directly linked to particular Qualifications and Curriculum Authority (QCA) Schemes of Work, which mirror the way teachers plan their work. In addition, education groups can book time in the exhibition and use specially designed, National Curriculum-linked trails to explore them from an educational perspective. The Centre for Life also offers an outreach programme for schools.

8.2 The project team

8.2.1 Overview

The Doing Dialogue project has involved many people from the lead science centres and Ecsite-uk. At the beginning of the project, one of the risks identified related to the likelihood that key partners might move roles during the project. As a result, the team decided that it would be necessary to have two members of each organisation in the project team. Where possible, they would both attend team meetings and other events. These key points of contact have contributed a variety of skills and energy to the project.

Deciding early on to ensure that each organisation agreed to contribute two members to the consortium has proved to be a good decision. During the project, of the 10 key staff within the consortia:

- two member change jobs, moving to other organisations
- four members went on maternity leave during the project
- one member was very sadly involved in a fatal accident
- one member moved between two partner organisations

However, the policy of two people per venue for most of the project had led to excellent continuity, and the team not losing any 'project memory' during the past two and a half years. It has also ensured that when team members return to their host organisations, they are likely to discuss the project and be able to enthuse their other colleagues about the benefits of being involved.

8.2.2 The team

Dr Rosalind Mist
Head of project development, Ecsite-uk

Rosalind trained as a space physicist and, after completing her thesis, spent three years as a post-doctoral fellow at Queen Mary, University of London and then at University College London. She joined Ecsite-uk in 2001, leading the sciZmic science club project for two years. She began her involvement with debate and dialogue programming through a previous Wellcome Trust project – Debates with a Difference. This project then expanded to enable more science centres to share the skills needed to develop high quality debate and dialogue experience for young people.

Savita Custead
Previously project officer, Ecsite-uk

Savita is the Director of the Bristol Natural History Consortium, She has a MSc. in Science Communication from Techniquest/University of Glamorgan and is the Project Manager for 'engaging cogs', an EPRSRC engagement project. Previously, Savita worked on a number of dialogue projects as a project officer for Ecsite-uk: the network of science centres and museums. She also sits on the Board of Directors for The Institute of Cultural Affairs and is the Event Manager for the British Interactive Group. She has managed a series of arts, intercultural and participation projects, and is currently an associate partner of Actors workshop, a community theatre group, as well as a member of Slow Genius, a Cardiff-based improvisation troupe.

Dr Jenny Search
Programme Developer, Ecsite-uk

Jenny was always fascinated by gory diseases so went to university to find out more about diseases and how the body defends itself. Shortly after finishing her PhD Jenny went to Ethiopia for two years to develop new courses and teach biology students at a new University. After returning to the UK she worked at the Centre for Life developing activities for the public as well as becoming involved with the Doing Dialogue project. Jenny was involved in the writing workshops and then writing up the final materials. In 2007 she joined the Ecsite-uk team to work on a number of projects including developing dialogue style activities about DNA and sound.

Dr Louise Webb
Head of Skills Development, Ecsite-uk

Louise has 9 years science communication experience, having previously worked for Techniquest Science and Discovery Centre in Cardiff, and for the BA as a Regional Officer for Wales. She has worked in partnership with these and other organisations to develop and deliver a range of training courses across the UK, for a variety of audiences e.g.: science centre staff, research scientists, teachers and youth leaders.

Louise has managed a number of national science communication projects including the Go For It! with sciZmic Science and Space projects, and the launch of NSW in Wales for the BA. She has also worked with Ecsite-uk members and other organisations to engage young people in dialogue and debate about contemporary science issues. Most recently she has worked on the Wellcome Trust funded Inside DNA: A Genomic Revolution touring exhibition project as Senior Supplier of Programming.

Dr Sharon McNab
Science Learning Manager, Glasgow Science Centre

Sharon Macnab is Science Learning Manager at Glasgow Science Centre (GSC), looking after the team that creates programmes for education and public audiences. For the three and half years before this, Sharon was a Science Education Co-ordinator and had principal remit to develop, train and assist with promotion of school activities and to plan the CPD programme for teachers. As part of this she supported the development and delivery of many specialist activities including debates and advanced higher workshops.

Before working at GSC, Sharon taught for 4 years at a Primary School in South Lanarkshire. She also worked as part of the development group for South Lanarkshire Council's Science Pack. She maintains her interest in modern theories of learning and curriculum developments and works with the team to ensure that these are reflected in GSC's activities.

Sharon completed her undergraduate degree in Microbiology at the University of Glasgow and then went on complete her PhD at the MRC Institute of Virology.

Jillian Boag
Former Education Co-ordinator, Glasgow Science Centre

Jillian has a broad background in Biology and informal education. Her academic background is in Medical Microbiology (BSc) and Water Resource Management (MSc). With experience working as a student at the Scottish Crop Research Institute, as a Field Studies Instructor and Countryside Ranger she undertook at PGCE (Secondary Biology with Science) before joining Glasgow Science Centre Education team in 2001. This is where she become involved with the delivery of the ''Debate with a Difference' project in 2003/4. After this project Glasgow was approached to be involved with the development of the 'Doing Dialogue' project. This project provided many opportunities for training for staff to improve their facilitation skills and hence enhance the quality of the senior schools product. This project came at a key time during the review of the Scottish Curriculum (3-18) which encourages: the evaluation of scientific issues and for pupils to form and develop informed view points. Jillian has since left Glasgow Science Centre to return to teaching (2006).

Susan Meikelham
Science Education Co-ordinator, Glasgow Science Centre

Susan completed her MSci degree in Molecular and Cellular Biology at the University of Glasgow. For one year of the course she worked in a molecular pharmacology lab with AstraZeneca. While studying, Susan started working part time at the newly opened Glasgow Science Centre. Having now been working at GSC for over 5 years Susan has progressed from a customer-facing science communicator to a science education co-ordinator with responsibility for dialogue events. Her current role also involves managing projects, training staff and creating exciting science experiences for our visitors.

Caroline John
Education officer, Thinktank

After studying for a degree and an MSc in palaeontology, Caroline spent six years working in science communication. She worked for a year as an Explainer and within the education team at at-Bristol, before co-ordinating a joint outreach project between the University of Bristol and at-Bristol, bringing local palaeontology to school children of all ages. She currently works at

Thinktank as an Education Officer, helping to develop and deliver the formal education programme. With a particular interest in engaging school children in discussion and debate, Caroline has spent the last few years developing and delivering Thinktank's debate programme, of which Doing Dialogue became a key component. Thinktank has since used the 'Doing Dialogue model' to develop a further programme of successful debates and good working practices.

Julia Kingston
Head of Learning, Thinktank

Julia Kingston is a trained secondary school teacher. She moved from teaching into museum education for Sandwell Museum Service in the Black Country at their five historic sites for 6 years. She has been education manager at Thinktank for 4 years developing the education programme and team which includes starting up the successful Science Outreach service which together with the onsite education programme reached over 70,000 school visitors last year. Her role within the Doing Dialogue project was developing the consultation aspect of the project working with the Nuffield Council on Bioethics to find a way to report back the student's views to the working parties.

Josh Philips (1976-2006)
Science Communications Officer, MOSI

Josh was renowned for his innovative and fun approach to getting people of all ages interested in science. He was actively involved in the science communication community and chair of BIG. Josh was involved in the Doing Dialogue project from day one when it was originally called 'Debates with a Difference' and his contributions were invaluable. His greatest achievements with regards to Debates were to find excellent speakers and involve local science students in the facilitation, one of whom brings her own class to the Museum for Debates to this day. Josh was involved in co-developing the 'Facilitation Training' and shaped the content of many debates. He is sadly missed.

Lucinda Lewis
Education and Interpretation Officer, MOSI

Lucinda has worked in informal learning for three years, after spending four years working as a primary classroom teacher. Her current role is to develop and deliver the educational programmes within the Museum of Science and Industry.

Lucinda has managed over eight successful 'Doing Dialogue Debate Days' and has facilitated not only at her own venue but also at Thinktank in Birmingham. Lucinda's main role within the Doing Dialogue project has been to co-develop the complementary 'Facilitators training' package.

She has delivered this training to science centre and museum staff across Europe, and supported colleagues through a 'train the trainer' course. Through working on this project Lucinda has developed an enthusiasm for Debating, and has tried her hand at a number of other debating events such as 'The Gene Machine' and the 'Debating Matters' Competition. She hopes to continue her success in this field in the future.

Marieke Evans
Science communication officer, MOSI

Marieke joined MOSI in August 2007. At the same time, she is completing the final stages of her a PhD in high energy particle physics at the University of Sheffield. She has been researching the

phenomenon of neutrino oscillations (whereby neutrinos change 'flavour' from electron to muon to tau flavour, and back again, as they travel across space) and developing liquid scintillators (substances that emit a flash of light when a charged particle passes through them) to detect particles created by the interactions of these neutrinos.

In 2007, Marieke was the runner up in the national NESTA FameLab competition with her 3 minute talk on the Large Hadron Collider at Cheltenham Science Festival. She also developed a 'Physics in a Box' programme where she visits schools with a box of everyday objects with which you can do interesting physics experiments on balance, music and sport for example.

Marieke also enjoys doing coke and mentoes explosions whenever possible. Apart from science communication her other passions are learning Japanese and travelling.

Dr Sarah Robinson
Education Manager, Centre for Life

Sarah has a PhD in evolutionary genetics from University College London. Sarah has worked at the Centre for Life since 2001 and has also spent some time as a lecturer in a further education college.

Sarah's involvement with debate and dialogue began with debates on stem cells. Sarah was involved in delivering a stem cell debate held at the Centre for Life as part of the sciZmic science club project. This stem cell debate lead on to the development of 'Debate with a Difference on stem cells' (funded by The Wellcome Trust).

Sarah took a leading role in the development this Debate with a Difference. Sarah continued her involvement with dialogue as a member of the Doing Dialogue team. Sarah has also been involved in developing other dialogue activities for the Centre for Life and for other collaborative projects.

8.3 Personnel changes

During the project, the team has undergone several changes.

Sarah Robinson (Centre for Life) went on maternity leave in 2005. Jenny Search (Centre for Life) had extra support from Savita Custead (Ecsite-uk) during this period.

Jillian Boag (Glasgow Science Centre) has now left the project, to be replaced by Susan Meikleham. In addition, Sharon MacNab has recently been promoted and is taking a less active role in the project.

In November 2006, the team were shocked and saddened by the sudden death of Josh Phillips. He had been an integral and valued part of the team. This loss has resulted in the project taking time to pause in the period before Christmas. He is much missed.

In January 2007, Melanie Quin (Executive Director of Ecsite-uk) also left Ecsite-uk in Jan 2007. Her role in the project was covered by Rosalind Mist of Ecsite-uk.

Jenny Search has now left the Centre for Life to join Ecsite-uk. Her time is split between Doing Dialogue and Inside DNA. She provided extra support for the project during its final phases, before and after her maternity leave.

Finally, Caroline John (Thinktank) was on maternity leave March 2007 – January 2008 and Lucinda Lewis (MOSI) is currently on maternity leave (January 2008 onwards).

8.4 Team meetings

Full team meetings have been held regularly throughout the project. A kick off meeting took place in May 2005. The writing workshops also enabled full project updates. A further team meeting took place on 2 February 2006, and was also attended by Veronica McCabe (The Wellcome Trust) and Mark Dyball (PSP). The most recent team meetings took place in November 2006 at Centre for Life, April 2007 (Marketing focus) and May 2007, the final team meeting.

Rosalind, Savita and Jenny also took the opportunity to meet individually with each science centre members of staff throughout the project.

8.5 Project updates

Electronic project updates were provided to the team, and interim reports were provided to both the Wellcome Trust and the Potential Trust.

8.6 Conclusions

The team have felt it very beneficial to have Ecsite-uk in the role of 'project manager'. They have found it particularly useful that this role wasn't fulfilled by a science centre, and so could be seen as a neutral body, if and when any conflicts occurred.

By and large, this project has been straightforward to manage. The main issues were related to the changing project team. This was discussed at the time and to ensure high quality was achieved, the project timeframe was extended slightly.

9 External evaluation

Continuous evaluation has been an important element of the Doing Dialogue project. The team used differing approaches to ensure the best possible outcomes for the project.

People Science and Policy (PSP) were appointed as the external evaluators, as per the original project proposal. Following the reduction in budget from the original proposal, they altered the evaluation plan to meet with the new budget. They provided an early stage evaluation of the project, and an evaluation tool kit that could be used by the science centres as the project progressed.

We have also had the training element of the project externally observed and evaluated, used various feedback forms and other tools during events and held many team reflection sessions during and at the end of the project. These elements of the evaluation strategy have been described in earlier chapters.

9.1 The PSP evaluation plan

(Please see accompanying report)

In this section, we include the evaluation plan prepared by PSP, in consultation with Ecsite-uk and the Doing Dialogue team. This plan and details of how it evolved are described in more detail in the accompanying evaluation report provided by PSP.

9.1.1 Facilitation Training

There are two parts to the training:

- general facilitation skills
- specific content knowledge of the social and ethical aspects of science and how to present them to young people.

There are also two audiences for this training:

- science centre staff who will become facilitators
- Expert trainers: science centre staff who will also become trainers of additional science centre staff to support specific events.

Objectives

PSP had the goal of enabling Ecsite-uk to evaluate whether the training is effective, useful and appropriate over time.

Evaluation strategy

There are, in effect, three elements to the facilitation training:

1. training of facilitators by professional trainers;
2. training of the science centre trainers by professional trainers; and subsequently
3. training of facilitators by the science centre staff.

PSP aimed to focus on the early training sessions to enable later training to be more effective. They planned to equip Ecsite-uk with the questionnaires and accompanying guidance so that they can continue to evaluate future training sessions for themselves.

9.1.2 Training facilitators by professional trainers

PSP evaluated the first two training sessions and give guidance and tools for developing and evaluating the later sessions.

PSP developed two questionnaires. The first questionnaire aimed to capture certain baseline data from participants and will include some basic demographic information, information about current levels of expertise and experience of facilitating and knowledge of the social and ethical aspects of science and of working with young people on these issues.

A second questionnaire covered the delivery of the training as well as the impact – i.e. what they felt they had learned/gained. Importantly, PSP planned to ask if there are areas they feel were not covered (or not covered adequately).

9.1.3 Training facilitators by science centre staff

Once science centre staff had taken over delivery of the training from the professional trainers, science centres were able to use the PSP toolkit to undertake the evaluation themselves. This aimed to help to ensure that the training is as effective as when delivered by the professional trainers.

9.2 Tool kit

PSP produced an evaluation tool-kit for this project, that can (and has) been used for other dialogue related projects. This included:

- an interview outline for teacher
- a questionnaire for pupils
- a data handling sheet
- an interview guide for use with experts
- guidelines.

The individual elements of the tool kit are provided in Appendices N,M and O.

PSP also provided an evaluation tool to use with the participants at the Facilitation Skills Workshops. This can be found in Appendix G.

9.3 PSP report

The PSP report has been submitted with this report. For convenience, the summary of their conclusions is included here.

9.3.1 Introduction

People Science & Policy Ltd (PSP) was commissioned to develop an evaluation strategy for the Doing Dialogue (DD) Programme. The Programme has three parts:

- Facilitation training;
- Content writing; and
- Doing Dialogue events for young people.

Ecsite-uk's long-term objectives for this project are to:

- assess and develop the facilitation skills of Science and Discovery Centre (SDC) staff;
- assess the conduct and impact of the Doing Dialogue events; and

- build capacity for evaluation in SDCs of similar programmes in the future.

9.3.2 Evaluation method

Facilitation training

PSP observed the first facilitation training session and surveyed all those who attended the first three sessions. The facilitators who led the first Doing Dialogue event were surveyed after the event.

Doing Dialogue events

PSP observed the pilot Doing Dialogue event and surveyed the students at that pilot event. They then observed the first main Doing Dialogue event and surveyed the students at the end of the first three events.

Facilitation training workshops

The facilitation training workshops were valued by the participants. The workshop is providing useful material and in particular is building participants' confidence in their existing skills. The most important element of the training workshop appears to be the facilitation styles session and we recommend that this remains as the cornerstone of the workshop.

Subject specific content training for facilitators is important and may require greater emphasis in the future.

The broad applicability of the training does suggest that it could be useful to many staff in SDCs. The Doing Dialogue programme offers an opportunity to roll out the facilitation training at minimal cost, but it may also be possible for Ecsite-uk to develop a quasi-commercial training product to deliver to members more generally.

Content development

The content preparation process was exhaustive with extensive trialling. It has produced a lot of strong material, indeed there may be too much for material for some students to cover within the timing constraints of the Doing Dialogue event. The material at the pilot was quite 'fiddly', but had been further developed by the time of the first event.

In the pilot, some students did not like the fact that different groups had done different things. This may be something that has to happen in the full-scale events if students are not capable of progressing at the same speed. An option may be that there is a core set of tasks and material and that facilitators have additional material that can keep the more able students stretched to be used as appropriate.

Doing Dialogue events feedback

The premature babies Doing Dialogue event has proved to be an enjoyable and informative event. Over 90% of the participating students thought that it was enjoyable and only 1% thought that it had not been useful for any school subjects.

The strengths of the event are its interactivity and the challenging nature of some of the components. The least favoured elements of the day were those that were seen as easy or

irrelevant. For some students they felt the freedom to express themselves was an important part of the experience.

Take-up of the events has been lower than expected. Follow-up work with teachers by the Doing Dialogue team will be a vital part of understanding why teachers participate and how the project can be most effectively marketed.

9.4 Conclusions

Working with an external evaluator from the very start of the project (during the application process) proved to be very beneficial for the project as a whole. It set the tone for the team, encouraging them to learn from the feedback from PSP and others, and hence adapt the structure and content of the various elements of the project. As a direct result of this process, the team feel that the facilitation skills workshops, and the debate materials are very strong, and will be used for many years, leaving the partner science centres with valuable legacy skills and materials.

Whilst not part of the project, it would also have been useful to include the full consultation process within this formal evaluation process. This would have strengthened that element of the project, and encouraged the development of science centres skills even further. This would have impacted on the project budget and timelines and the evaluation therefore focussed on the elements in the project proposal.

10 Dissemination

10.1 Objectives

- To disseminate the facilitation training within the science and discovery centre sector

Across 2006, 2007 and early 2008, Ecsite-uk and members of the Doing Dialogue team promoted the project, resources and facilitation training created by this project in a variety of sector wide events and conferences. In addition they ran facilitation workshops with science and discovery centre staff from across Europe and elsewhere as outlined below.

10.2 The BA Science Communication Conference

10.2.1 2006

Dr Rosalind Mist (Ecsite-uk) spoke in a session entitled: integrating formal and informal science communication. She discussed the processes used by the team to enable better collaboration between the partners.

The powerpoint presentation given in this session can be found here:

http://www.britishscienceassociation.org/NR/rdonlyres/A4971E1F-4CF4-4901-B259-31006B26ABE5/0/RosalindMist.pdf

http://www.britishscienceassociation.org/NR/rdonlyres/516B14A1-91CB-4468-979A-D118BEC561AB/0/ScienceCommunicationConferencereport.pdf

10.2.2 2007

Rosalind Mist and Sharon McNab spoke in a session entitled: science centres supporting discussion and debate with teenagers. The session reflected on how various science centre projects, including Doing Dialogue, have engaged young people and their teachers with complex, controversial, topical science-related issues in an out-of-school context. They introduced the model used as the Doing Dialogue debate skeleton (developed from the previous Wellcome Trust grant for Debates with a Difference) and involved participants in hands-on examples of the different tasks used in the debates.

The powerpoint presentation given in this session can be found here:

http://www.britishscienceassociation.org/NR/rdonlyres/2AD50A4D-BD1A-465F-8763-5333F9788D3C/0/SharonMacnabandRosMist.pdf

http://www.britishscienceassociation.org/web/ScienceinSociety/ScienceCommunicationConference/_2007_Reportsday1.htm

10.3 Ecsite Annual Conference

10.3.1 2006

Rosalind Mist convened and spoke in a session entitled ‘how to stimulate discussion about cutting edge research with young people. Ben Barker (At-Bristol) and Guglielmo Maglio (IDIS - Città della Scienza, Naples) also spoke in the session. Rosalind introduced the Doing Dialogue debate materials and these were discussed and used by the participants.

Session abstract

Science centres are a natural venue to display contemporary science and to discuss science in society. However, organising debate and dialogue events for young people in science centres can be challenging. During this workshop, participants will sample some of the techniques used to engage teenage audiences with cutting edge research, and the financial, ethical and legal implications of this research. They will then consider the training needs of their institutions and consider how best to evaluate such events.

10.3.2 2007

Sarah Robinson spoke in session entitled 'Collaborative development – Many Hands Make Light Work: Exhibits, Debates and Shows/Workshops. How we can work together to achieve a more successful outcome.' She used the Doing Dialogue project, and a subsequent SITA project to highlight best practice in collaboration, and the additional benefits it brought to the participants and science centres involved.

Abstract:

Developing dialogue activities can be challenging and time consuming for individual science centres and different centres often wish to focus on similar topics. Working with other science centres to develop dialogue events is an enjoyable and successful way to produce robust, high quality materials. I will present the example of the collaborative writing process involved in the Doing Dialogue project which was a collaboration between Ecsite-uk and four science centres in the UK.

10.3.3 The Facilitation skills specialist workshop delivered at ECSITE the 2007 conference

Lucinda Lewis, Jenny Search and Rosalind Mist delivered a two hour facilitation skills workshop in the pre-conference programme to over 40 explainers and science centre staff from across Europe. They delivered elements of the skills workshop that they felt would work in a multilingual context. They introduced the Doing Dialogue project and then discussed why these elements had been included in the full workshop. They also discussed how the workshop could be adapted to work in non-UK science centres and museums.

10.4 British Interactive Group Conference

10.4.1 2006

Josh Philips and Lucinda Lewis lead a facilitation skills workshop. This covered the training developed as part of the project, but also why it had been developed. Caroline John led a session on consulting with young people, and included the Doing Dialogue project, along with another Ecsite-uk project, on radioactive waste (this linked into Dialogue by Design's work).

Abstract: facilitation skills

This 3 hour course covers a number of different topics designed to help you recognise the skills you already have in facilitation (even if you didn't know it!) and learn some new skills. Some of the major topics include:

- Different facilitation styles, and when you might decide to use these
- Strategies for working with difficult participants and leading discussions on difficult topics.

- Using questioning skills, body language and other techniques for engaging a group.
- Theories about groups and how they work together – and how you can use this to your advantage as a facilitator.
- Recording discussions clearly and effectively to assist a group

Abstract: consulting with young people: Does anyone really listen?

Through the successful case studies of SciZmic and 'Doing Dialogue' projects, Dialogue by Design's Managing Radioactive Waste discussions and Thinktank's Rosalind Franklin project we have explored the process of consulting with young people. Through active discussion, we will look at the methods used in creating a forum where the students can express their views and how we worked towards creating best practice policies for disseminating this information on to working parties and policy makers.

10.4.2 2007

Sarah Robinson spoke about the tools and process used in the Doing Dialogue collaboration.

Abstract: a BIG guide to enhancing partnerships

Working in partnership with other people and organisations has many obvious advantages - but also some potential downsides... This interactive session will explore how we can avoid those pitfalls, providing tips and tricks from recent successful UK-wide projects, including Wasted: The Trouble with Rubbish, Doing Dialogue and Meet the Gene Machine. The floor will then be opened to enable BIGgers to share their own pearls of wisdom. Join us to help develop a BIG advice guide for people embarking on multi-partnered programmes.

10.4.3 2008

Colleagues from Glasgow Science Centre and MOSI are running the facilitation skills workshop.

10.5 Curriculum for Excellence

Sharon McNab, Glasgow Science Centre, spoke about the Doing Dialogue project at this teachers' meeting for the new Scottish Curriculum for Excellence.

10.6 CIPAST (Citizen Participation in Science and Technology)

www.cipast.org/

10.6.1 2006

Rosalind Mist, Ecsite-uk, took part in the 2006 CIPAST training workshop in Dresden, where she highlighted the Doing Dialogue project in a session about dialogue in museums and science centres.

10.6.2 2007

As a result of Rosalind's participation in the 2006 CIPAST workshop, the Doing Dialogue team were encouraged to submit the project as a case study for the 2007 workshop.

Julia Kingston (Thinktank) and Susan Meikleham (Glasgow Science Centre) had their case study accepted and attended the workshop.

Figure 10-1 The CIPAST workshop

This 2nd CIPAST training workshop was held in Italy June 2007 and the theme was How to Design and Organise Public Deliberation. It presented the state of the art of knowledge on public participation in science and technology and referred to concrete experiences in European countries. There were 80 participants from 20 countries.

The Doing Dialogue project was one of the successful six proposals accepted out of 26 submitted to show the project as a case study to the delegates attending (see Appendix R for a summary of the case study). Julia Kingston and Susan Meikleham attended to deliver the case study; 'To design a participative process for a consortium of UK science centres (based in Scotland and England) aimed at young people aged between 14-19 years old to feed into a national public consultation'.

For the case studies participants worked in small groups on case studies constructed in a way which lead them to work as if they were in a 'real life' situation. Supported by CIPAST members, participants performed a task which illustrated some of the difficulties of the design and implementation of public participation in practice: choice of a procedure, drafting of a rationale for public participation for a given policy maker, or writing a press release etc.

The session was well attended and people were really interested in our target audience of young people. Following on from the conference the case study has been included in the CIPAST toolkit.

10.7 The Association for Science Educators (ASE) conference

www.ase.org.uk

10.7.1 ASE 2008

Rosalind Mist spoke at the ASE conference in the IMPRESSE session. As part of her talk on science centres in the UK, she covered the work of the Doing Dialogue project, and in particular the way that schools and teachers had been involved with the development of the debate materials.

10.8 Printed Materials

10.8.1 Ecsite Newsletter

An article on Doing Dialogue was published in the Winter 2007 Ecsite Newsletter.

10.9 Teacher training

10.9.1 Science Learning Centre London

Ecsite-uk used the Doing Dialogue materials and learning as part of a teacher training event at the London SLC in October 2005.

10.9.2 ASE North East

The Centre for Life used the Doing Dialogue tasks, and the content option grid as part of a regional ASE teacher training event in April 2007.

10.9.3 ASE 2007

Caroline John, Thinktank, delivered a teacher training session about contemporary science debates, and how to encourage young people to talk, using the Doing Dialogue materials, at the 2007 ASE conference.

10.9.4 Glasgow Science Centre

The team at Glasgow Science Centre used the Doing Dialogue facilitation training and science centre tasks for teacher training events in September 2007.

10.9.5 ASE 2008

Thinktank used the tasks during a teacher training session at the 2008 ASE conference in Liverpool.

10.10 Conclusions

The team have all contributed effectively to disseminating the outcomes of this project in a wide variety of ways. Each aspect of the project has been discussed in a national or international setting.

11 Further developments

11.1 Continuing use of debate materials

Prior to receiving this Doing Dialogue grant, Ecsite-uk received a grant to develop the Debates with a Difference format (the event format used in Doing Dialogue) and funding for a series of stem cell debates.

Glasgow Science Centre Stem Cell Dates

Date of event	Funder
May 2004 x2	Debates with a Difference – The Wellcome Trust
Oct 2004 x2	Debates with a Difference - The Wellcome Trust
Mar 2006 x2	Biochem
Oct 2007 x1	

The debates developed as part of both projects now form an integral part of Glasgow Science Centre's education programme.

The Centre for Life ran a stem cell event in March 2006 for over 200 participants, some of who with English as a second language.

MOSI ran stem cell events in November 2006, and October 2007 for 115 students in total.

11.2 Link to BA Science Communicators Award

MOSI have worked with the BA to link the Doing Dialogue (and other) debates to the BA's Science Communicator Award scheme. The other science centres in the partnership are also exploring this scheme and plan to like their debates to it too.

11.3 Glasgow Lighthouse Classrooms of the Future

Glasgow Science Centre staff delivered some Doing Dialogue debate events as part of this project.

11.4 Use of the writing week model

One of the most useful tools developed during this project was the writing week model. The team found this way of working to be very beneficial, both for the project and their personal development. As a result, it has now been used on other collaborative science centre projects. It is particularly suited to projects where a learning programme or resource will be developed to be used in more than one venue.

11.4.1 SITA

In October 2006, MOSI, The Centre for Life and Thinktank collaborated on a debate activity related to SITA funded exhibitions. At the start of the process, the team met for a two-day writing workshop. The workshop was externally facilitated by Savita Custead.

11.5 Working with adults

The Centre for Life was keen to explore whether the debate materials produced as part of this project could be used successfully with adult groups. As a result, they held a mini adult debate in April 2007. They used the premature birth materials in an evening event. It was attended by eight people from a range of backgrounds, and the team felt the event went well. They note, however, that there were different pressures on the facilitators, as the background knowledge level of the participants was significantly higher than that of A'level students. All members of the Doing Dialogue team are keen to explore this format further.

12 Financial summary

The table below summarises income and expenditure for this project.

	Budgeted	2005	2006	2007	2008		Total
PROJECT MANAGEMENT	**44693**	14321	21175	12737	1851		50084
Ecsite-uk events	**4600**		3552		1048		4600
FACILITATION							
MSIM	**12077**	3975	4175	3110			11260
Attend courses	**3500**	2238	2492				4730
MOSI events	**4600**						0
External consultants	**5000**		1435		1550		2985
Delivery of CPD	**6000**				4929		4929
CONTENT DEVELOPMENT							
Life	**11399**		5084	4121			9205
Life events	**4600**		1955				1955
PARTICIPATION IN DECISION MAKING							
Thinktank	**9906**	3742	3568	2397	386		14693
Thinktank events	**4600**		4600				0
Reports	**2000**				2000		2000
MARKETING STRATEGY							
Glasgow	**7328**		10152	7466			17618
GSC events	**4600**	2422					2422
Marketing tool kit	**2000**						0
DEBATE MATERIALS	**6000**	127					127
TRAVEL + SUBSISTENCE	**26400**	6341	11439	7623	624		26027
Writing Week	**2540**	3000					3000
Project delivery							
Develop CPD modules	**5000**	3848	5846	2801			12495
Trialling and revising	**5000**	1776	3300				5076
SHARING LEARNING	**3750**				3750		3750
EVALUATION	**0**						
Internal	**2000**		370		1630		2000
PSP	**15862**	6991	**7508**				14499
CONTINGENCY							
At 5%	**0**						
TOTALS	**193455**	48781	86651	40255	17768	193455	193455

13 Conclusions

The Doing Dialogue project has given 1162 young people a voice in two national consultations, trained 250 science centre and museum staff in facilitation skills, embedded dialogue and debate events in the partner science centres schools programmes and enabled the centres to improve their marketing to this important audience.

The objectives as laid out in the original proposal have been met as follows

To enable young people's voices to contribute to consultations on biomedical science by:

- **Building science centres' experience of engaging with young people on consultation topics**
  The partner science centres, lead by Thinktank, developed a relationship with the Nuffield Council on Bioethics. The debate format ensured young people were informed that their views would be submitted as evidence and consultation record cards were developed to capture their views.
- **Providing working parties with information about the concerns of young people**
  12 debates fed into the consultations, incorporating the views of 1162 young people. The Doing Dialogue team were able to present their findings in writing and as an oral presentation.

To improve science centre staff's facilitation skills by:

- **Developing appropriate facilitation training for science centre staff**
  MOSI and Ecsite-uk developed and thoroughly tested, with extensive external review, a three hour introduction to facilitation skills workshop.
- **Training 10 facilitation trainers**
  MOSI and Ecsite-uk, with support from external advisors developed a train-the-trainer programme, training 12 senior science communicators as facilitation trainers.
- **To enable 60 science centre staff to professionally and competently facilitate debates with young people**
  By using a train-the-trainer approach, and with extra support from The Potential Trust, 250 science centre and museum staff received facilitation training.
- **To disseminate the facilitation training within the sector.**
  The facilitation training has been offered widely to science centre and museum staff outside the consortium, both at stand alone training events and during science communication and science centre conferences. The training has also been discussed during conferences and in writing.

To embed dialogue and debate activities into the partner science centre's schools programmes by:

- **Jointly developing debate events**
  The debate events were developed collaboratively. Writing workshops enabled busy staff from each centre to work together in a focussed and productive manner. The sense of ownership that this model created resulted in events that have continued to be used after the project.
- **For each science centre to run two events, reaching in total 2600 students and 200 teachers**
  Each science centre has run at least two events, most three or more. We have reached over 2000 students (1414 through direct project events and the others through related events run by partners) and approximately 168 teachers at events or teacher training sessions.
- **To have experts successfully involved in the events**

Where experts were able to attend events, they received a briefing pack.

- **Hosting a specialist seminar**
  Ecsite-uk hosted a specialist seminar training session at the Ecsite conference in 2007 and has discussed the development of the debate materials extensively in other settings.

14 Acknowledgements and co-authors

With grateful thanks to all the organisations and staff members who have made this project possible. This report was authored in early 2008 by Dr Rosalind Mist of Ecsite-uk with input from Dr Penny Fidler and co-authored by:

- Jenny Search (Ecsite-uk)
- Sharon MacNab (Glasgow Science Centre)
- Susan Meikelham (Glasgow Science Centre)
- Julia Kingston (Thinktank)
- Lucinda Coles (MOSI)
- Sarah Robinson (Centre for Life)

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Appendix A Example consultation record

Vaccination Debates: Consultation Record

Event date and location:

Facilitator name:

Group size and details (i.e. male/female split)

Consultation Question:
Some countries have a compulsory rather than voluntary system of vaccination. On what basis can such policies be justified to achieve herd-immunity? Should they be considered in the UK?

Group results

Please record your group's results from Task 7

Please record your group's policy statement

Appendix B Premature babies: report for Nuffield Council on Bioethics

Prolonging Life in Fetuses and the Newborn
Consultation with 14-19 year olds
Savita Custead, Ecsite-uk (savita@scizmic.net)
Julia Kingston, Thinktank (Julia.Kingston@thinktank.ac)

This report supercedes the preliminary report dated 08/11/05, which reported findings from the first debate events, involving some 397 students.

Introduction
A series of debates titled **Premature babies: decisions at the edge of life** were staged in schools and four science centres involved in the Doing Dialogue project involving a total of 659 young people aged 14-19 during October 2005-March 2006. The debate format is designed for students -- led by a facilitator -- to complete a series of tasks and challenges to deepen their understanding of the issues raised. Some of these tasks are specifically designed to address questions in the Working Group consultation paper. The questions were selected by educational advisors as being most relevant and accessible to the target age group.

Student views on Consultation Questions
Question 4: 'What might we mean by quality of life for a child?'

The students were asked to think about what might be the essential, desirable and luxury needs of different aged groups – newborn, 15, 40 and 80 year olds. In terms of the quality of life for a newborn students thought it was essential that they should have *'care', 'protection', 'support'* and *'working organs'.* It was desirable to have *'parents/family'*. *'Toys'* were considered a luxury. Essentials for 15-year-olds included '*education*', '*supporting family*', '*friends'* and *' the ability to read';* for 40-year-olds '*employment*', '*partner/family*', '*security*'; for 80-years-olds '*support*', '*health*' and '*independence*'.

Question 5: 'When families as well as other professionals are involved, whose decision should carry the most weight?'

Students completed two different tasks in response to this question. Working in groups, the students looked at one case study and took on the different roles associated with the decision-making process: parents, doctors, and legal representatives. For the second task they looked at different case studies from a purely financial viewpoint. The participants' responses to this task give a clear idea of their thoughts and views on **Question 5** of the consultation paper.

Parents
Students empathised well with the dilemma facing parents, noting the emotional responses there would be to such a decision. They acknowledged the role of doctors in the decision-making process.

'We think that our daughter should be put to rest as I have seen the pain my daughter is going through. I am aware that the baby knows we are there but I feel that it is better that she is put to rest. I understand that the doctors and lawyers are trying to support our decision.'

'I don't want my child to suffer but I love her and I don't want to lose her.'

'I think I have no control over the matter. The doctors are more in control.'

Doctors
The students felt that doctors also would struggle with the decision, but the majority felt that doctors have an important role in advising parents. The doctors' decision would be more impartial than that of parents and based on their medical knowledge. Interestingly, the boys veered towards saying that doctors should have the final say.

'Doctors should make the final decision because they are dispassionate, responsible for treating the child. Doctors should consult the parents with every decision made. Everyone should agree before drastic action is made. Keep the child alive until a decision is made. Step 1 is consultation, step 2 if there is no agreement a legal expert should be involved, last resort a full court case.'

Legal Representatives
The students seemed to find this viewpoint hard to empathise with and felt firmly that legal representatives should only intervene when absolutely necessary.

'See what the parents think and the doctors say.'

'We have the last say because the parents and doctors have an equal say and someone else is needed to make the decision. She should be let go.'

Healthcare Managers
Students felt that healthcare managers were emotionally removed from the decision-making process, looking at it purely in financial terms. They didn't feel that healthcare managers had a right to decide.

'Horrific, unfair to decide based on money.'

Policy Creation Task
The students' final task of the day was to formulate their own policy statements. These also related directly to Question 5. The majority of students felt that parents should have the right to decide on the future of their children. In their policy statements, the students concluded that parents should be given help and advice from doctors to inform their decision.

'Treatment will be given to all premature babies until the parents decide to withdraw. Doctors must give all the facts to inform parents. As each child is unique and individual, there should be no rules.'

A smaller fraction of groups felt that the decision was best made by the doctors:

'Doctors should decide: they are the experts, and they are neutral.'

A few of the students felt that the decision should be made looking at the severity of the newborn's disability or possible disability, the likely costs and the fact that using resources to care for the premature baby takes them away from other areas of healthcare.

'If the baby is going to die it is a waste of time because the doctors trying to save the baby could be used to save people from car crashes etc. If the baby has a minor disability they should save it because the baby will have a fairly normal life and only needs to go to hospital a few times a year.'

Some groups felt that the issue was pre-determined by the age of the newborn.

'If the baby is over 32 weeks then treatment should be given automatically. This cut off is based on cost of treatment and the percentage survival rate dramatically increases. If under 32 weeks then 3 independent 'neonatal consultants' are called in. They are sent information by email/phone. They have no personal contact with the baby or parents so that their decision to

continue/discontinue treatment is based on scientific analysis with no emotional input. These 'neonatal consultants' would be especially trained individuals and this would be their main role. If a baby was born after 32 weeks but had severe disability then doctors could halt the treatment if parents in agreement. If the parents disagree, the 'neonatal consultants' would be called in again.'

Some groups decided that an independent panel should arbitrate the decision if doctors and parents could not agree.

'If the baby is born after 21 weeks and has at least a 50% chance of survival every effort should be made to keep it alive. If the baby has received treatment but does not respond, both parents and doctors must make an informed decision. If a decision cannot be reached the doctors and the parents would go before an advisory panel, which consists of specialists, social, and health workers, parents of other premature babies. The panel will make the ultimate decision.'

Question 8: '…should the UK follow practice in other countries?'

In response to Question 8 of the consultation paper the majority of students felt that having a strict cut off point at 24 weeks as in the Netherlands was shocking and unfair. However a small number felt that the policy of the USA was linked to the ability to pay, as those with health insurance would receive the 'treat until certainty' care.

'Shocking as the baby should have a right to life regardless of where it is born.'

Appendix C Vaccinations: report for Nuffield Council on Bioethics

Vaccinations: decisions at the sharp end

Consultation with 14-19 year olds

Rosalind Mist, Ecsite uk (Rosalind.mist@Ecsite-uk.net)
Julia Kingston, Thinktank (Julia.Kingston@thinktank.ac)

This is a final report, which summarises the findings from seven debate events, involving 503 students. Policy statements from students taking part are attached in Appendix E.

Introduction

A series of debates titled **Vaccinations: decisions at the sharp end** were staged in schools and the four science centres involved in the Doing Dialogue project. These involved 503 young people aged 14-19 during April-September 2006. The debate format is designed for students -- led by a facilitator -- to complete a series of tasks and challenges which deepen their understanding of the issues raised. Some of these tasks are specifically designed to address questions in the Working Party consultation paper. The questions were selected by educational advisors as being most relevant and accessible to the target age group.

Age and gender of participating students

We had 3.5% year 7 (11yr old), 4.5% year 9 (13yr old), 69% year 10/11 (15/16yr old), 23% year 12/13 (16-19 yr old).

68% of participating students were female, 32% male.

Some countries have a compulsory rather than voluntary system of vaccination. On what basis can such policies be justified to achieve herd-immunity? Should they be considered in the UK?

Opinion was split on this question:

For compulsory vaccination

There was a majority in favour of compulsory vaccination for a variety of reasons. Overall it was felt that compulsory vaccinations benefited the whole community, those who refused vaccinations were being unfair by making others sick and that by achieving herd immunity the weaker members of society would be protected, some felt that it was essential to achieve this. If herd immunity is reached then those who are against vaccination will be protected anyway and won't be a threat to others. By making vaccination compulsory, deadly diseases could be eradicated, so lowering health care costs. They felt that the costs of administering the programme would be cheaper than treating the subsequent disease. A majority felt that the costs should be scaled those who could pay did and those less able to pay were subsidised by the Government. Certainly, travellers and business people should cover their own costs.

There were several different views as to how compulsory vaccinations should be administered. Some felt they should be given at birth, more felt that under 16s should be compulsory and over 16s should have a choice. The majority felt that the media and government had a strong role in promoting and educating people about the benefits of vaccination. Some felt that people should be fined for not having the vaccination but there could be exceptions in the case of religion and the danger of physical reaction to the vaccine.

Against compulsory vaccination

Those who were against compulsory vaccination felt strongly that it contravened individual rights and that there should be a choice, especially for those who held strong religious beliefs. Some groups felt that it would be expensive to administer vaccinations to everyone and one group felt there might be costs involved with any legal cases that might be brought.

Those who favoured voluntary vaccination felt that if a disease were to reach an epidemic/pandemic situation then vaccinations should become compulsory

Policy decisions

At the end of the debate, student groups are asked to write a policy statement, about vaccination – a statement which the majority agrees to.

The policy statements were also divided, with the majority in favour of compulsory vaccination for more deadly or disabling diseases. There should be voluntary vaccination for the less harmful diseases. One group suggested that vaccines be labelled A-D according to whether they should be compulsory or not e.g. A-compulsory, B- highly recommended, C- optional, D- required for travelling to affected regions. They felt that there should be a system to test for allergic reactions so those people could be exempted, and that more research should be conducted into possible side effects.

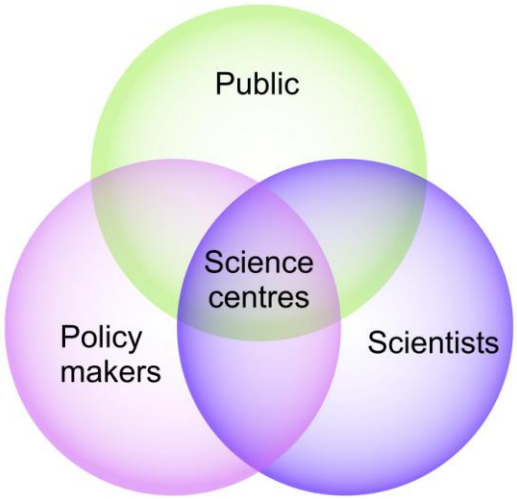
Several groups stated that more unbiased information about the benefits of vaccination should be available, and that the media and schools had a role to inform the public more. Fines should be enforced for non-vaccination and one group suggested that children shouldn't be allowed to start school without proof of vaccination. Another said that if people have refused to have a vaccine they should not be entitled to free medical care.

Several groups suggested that young people should have much more say in the vaccination process with over 16s being able to decide and under 16s following parental guidance. If parents felt unable to make that choice, then doctors would advise them.

Those groups against compulsory vaccination felt that the system should stay as it is with more government funded education to help people decide. They wanted to reach herd immunity through voluntary vaccination with research to find suitable alternatives to using needles, e.g. oral doses.

Appendix D **Consultation Tool-kit**

Doing Dialogue consultation toolkit



How do you validate the opinions of young people?

More and more school students are being asked to voice their opinions and with the introduction of 21st Century Science, the new Science GCSE syllabi and reviews to the KS3 curriculum underway this will become more common.

Why run consultation events in science centre?

Science centres are unique in that they are publicly accessible spaces where scientists, policy makers and various publics can meet.

Doing Dialogue consultation toolkit

When you get the consultation paper

Pick the questions that related to the curriculum studied by this age group
Questions that they might be able to relate to
Questions that could generate tasks/activities for the participants to engage with

Attracting schools

Remember that teachers are the ones who will make the decisions about whether to bring a group or not so it has to 'attract' them and make it worth their while.

Keep things confidential

Sometimes the consultation papers can be confidential at the time you receive them so check with the consulting body as to the status of the consultations.

For our second consultation we were lucky enough to receive a copy of the consultation paper just prior to its general release to enable us to prepare the materials within our timescales for writing.

The key is to keep talking to the consulting body; they will be happy to work with you to make the process as easy as possible.

Top tip

Draft a template letter inviting schools to the debate events addressed to the head teacher and signed by the Chair of the working party to add value to the events and aid recruitment of schools

Our second event was based on a consultation about 'Public Health: ethical issues' using case studies looking at Prevention and control of infectious diseases, Obesity, Smoking, Alcohol and Enhancement of food and water. We were very selective as to which areas we would include within the events finally deciding that Prevention and control of infectious diseases most closely fitted with our criteria above, especially the curriculum.

Doing Dialogue consultation toolkit

Setting expectations

Remember that each working party is made up of different experts and will have slightly different expectations of what information is needed and how that is to be presented.

Gathering information

Once you have decided on the consultation questions,you can start writing the materials. You will need to take into consideration the information you need to gather.

The responses to the tasks should give you the young people's opinions. The actual format of recording the responses will vary accordng to the needs of the information required by the working party.

Making best use of the expertise of the working party

Send draft materials to members of the working party for approval and any suggested changes.

Ask for them to come to the events as speakers.

This has the additional benefit of allowing them to see the events in action and how engaged the young people become in the topic.

In our experience

At the start of each event the introduction told the young people taking part that they were contributing to a Public Consultation and their results would be fed back to Nuffield Council on Bioethics.

Facilitators commented that the groups felt motivated by this to consider their responses more carefully.

Top tip

Our second working party wanted far more statistical information about the make up of the young people consulted in terms of age and gender.

We developed a **'consultation record'** to be completed by the group facilitators. The information from these was then combined by the individual centres and emailed through to be collated by the report writer.

Doing Dialogue consultation toolkit

Remember each working party has individual requirements

If necessary send through an interim report while you wait to receive all the information, it also gives the working party chance to review the results and ask for more clarification.

They asked us to include the policy statements to give them a feeling as to how the young people had reached their decisions.

Feeding back your results

Your report needs to be concise (2 sides of A4):

An overview of what happened at the events

How many young people took part, their age and gender.

Include the results from the trial sessions when the tasks are being tested.

The question you are responding to within the consultation document and the response of the young people.

An attached appendix containing any policy statements from the young people.

Don't forget

To feedback the results of the consultation to the schools involved!

Presenting to the working party

You may be able to go in person to present our results to the working party which is an excellent opportunity. Expect to answer questions about the events and expand upon the information they have already received in the report.

You should also receive feedback about the results you have presented, which could then be taken forward to the next consultation.

Top tip

Send a thank you for attending letter signed by the chair of the working party to give attendees a sense of the value of their opinions and work on the day.

Appendix E Policy statements from Vaccinations: decisions at the sharp end

For compulsory vaccination

The group believes that vaccination should be compulsory because it will eradicate diseases and cut NHS costs for medicines to treat diseases.

The NHS should pay for some of the vaccinations but companies should pay for their employees working overseas.

People traveling on a recreational basis should be required to fund their own vaccinations.

The group understand that vaccinations save lives, prevent diseases and wipe out diseases.

The group also understands the disadvantages such as people being concerned by loss of the right of personal choice

The disadvantages are outweighed by the positives.

Compulsory vaccination should be enforced by fines and jail sentences.

Health Workers/Doctors should be vaccinated first, followed by children and the elderly.

*

Vaccination should be compulsory to all children under the age of 18

This will lighten the burden of NHS resources; vaccination is cheaper than treating the disease

Public awareness with the encouragement of positive media cover

Any diseases with a moderate or high chance of fatality

Over 18s shouldn't have to pay for treatment if it was the decision of their parents for them not to be vaccinated when they were younger, when vaccinations weren't compulsory

*

Vaccinations to be compulsory

Everyone received a health check

Most important vaccines including: MMR, BCG, Polio and tetanus should definitely be compulsory

Compulsory vaccination can be enforced using fines, which can be increased over times if deadlines not met

*

Vaccinations should be compulsory for everyone. Young babies and toddlers, the elderly and people at risk should be paid for by the NHS. If the NHS can afford it, then pay for all people, if not 20-40 year olds should pay for their own. Businesses should pay for their employees to travel. Other travellers should pay for their own travel vaccinations.

*

Vaccination should be compulsory for every infectious disease.

Preventative medicine is better than treating a disease. People may regret not immunising their children if they become ill.

Enforce it by not letting children into school unless fully vaccinated. Fine people who don't and use the money generated towards more vaccination.

*

Diseases that are deadly, contagious and incurable should have compulsory vaccinations.

Vaccinations should be labelled

A = compulsory

B = highly recommended

C = optional

D = travelling

A, B and C should be free. D should have £20 fee.

*

I think that compulsory vaccinations are a good idea, because the infection will be totally eradicated.

*

Vaccinations should be made compulsory, with some exceptions e.g. bad allergies, religious reasons

*

Against compulsory vaccination

Vaccinations are **not compulsory** but an **education** program should be in place for **everyone**.

This should be achieved through leaflets, the media, schools, work and job centres.

This should inform people of all aspects of disease and vaccination so they can make their own choice.

Vaccinations should be **free**

There should be more funds towards research for disease and vaccinations. Compulsory vaccinations could occur in a pandemic situation.

Vaccination should not be compulsory but all people should be encouraged to take it. We should aim to reach herd immunity levels with voluntary vaccinations while researching more suitable alternatives for all people.

*

We believe that herd immunity is essential.

We believe that the vaccinations should be administered under current guidelines, with regard to age, but at the parent/guardian's consent.

If a disease become an epidemic, the vaccination should become compulsory.

*

Yes to vaccination

Yes to freedom of choice

Yes to education

No compulsory vaccination

Better education programmes to encourage people to be vaccinated by choice

New and expecting parents to be invited to discuss with other parents and health professionals

Compulsory education for employees on adult vaccinations. Those who travel as part of their job should get information on vaccinations.

The government is responsible to pay for the education.

*

We think that vaccinations should not be compulsory; however, people should be encouraged to have them and be provided with lots of information (leaflets etc). If they were made compulsory there would be many complications and outrage (from human rights activists and people with different beliefs).

Main vaccines should be free, other should be paid for.

The global nature of disease and vaccinations makes issues very, very, very complicated. We now know how hard it is for decision makers. It is nearly impossible to please everyone. But, you do have to make a decision, and it is never going to suit everyone.

*

Shouldn't be compulsory

People have strong objections, like religious reasons, medical reasons, it's a waste of money

Doctors should advise mothers on what is right. They should be given proper information, instead of misleading tabloids (which should be banned). When you are old enough, you can make your own decisions.

*

We think that people should have the opportunity to have a vaccination when they are young, so they don't receive further disease. People who are born in the country have to get the

vaccination. Foreigners should have the option to get the vaccination treatment. The government should pay for the vaccine, because we pay tax.

*

I believe that the laws should stay the same, unless a pandemic is loose. (sic)

Appendix F Facilitation course feedback exercise

At the conclusion of your facilitation course, please compile a 1-2 page report to share your learning with the rest of the project team. It will be very important to use the experiences of the team in different courses when creating the Doing Dialogue facilitation programme.

Although you may have attended a course with one of your colleagues, this should be an individual exercise.

Please cover some or all of the following questions, as well as any other thoughts you want to share.

1. Participants

a. What type of participants attended the course?

b. How large was the group? Did you think the group was too big or too small?

2. Trainers

a. How many trainers were involved? What was their background? Were there too few or too many trainers? How did they split up the time?

b. What characteristics did you enjoy about the trainers?

c. Do you think that the trainers should be involved in the Doing Dialogue project?

3. Facilitation skills

a. Describe some of the skills and methods that you learned. What did you hear about, and what did you have a chance to practice?

b. Have your ideas about 'facilitation' changed?

c. What skills do you think were the most relevant to the Doing Dialogue project?

d. What other resources (ideas, documents, links, contacts) did you take from the course that would be useful to the Doing Dialogue project?

4. Organisation and Partnership

a. What was your impression of the organisation running the training?

b. Do you think the hosting organisation should be involved with the Doing Dialogue project?

Appendix G Facilitation training – evaluation questionnaire

How long have you been working in science communication?

i. Less than 1 year
ii. 1-3 years
iii. 3-5 years
iv. more than 5 years

How long have you been working in Science and Discovery Centre sector?

Less than 1 year
1-3 years
3-5 years
more than 5 years

What is your current post?

[Free response]

How long have you been working in your current post?

i. Less than 1 year
ii. 1-3 years
iii. 3-5 years
iv. more than 5 years

What is you highest qualification in science or engineering

i. GCSE or equivalent
ii. A Level or equivalent
iii. Degree or equivalent
iv. Post-graduate qualification

If you have a degree or higher qualification in science or engineering, what was the main field of your study?

i. Biological sciences (excluding medicine)
ii. Chemistry
iii. Engineering
iv. Medicine and related subjects
v. Physics
vi. Other please specify

Please state how much you agree or disagree with the following statements [5 point scale from agree strongly to disagree strongly]

i. I am experienced at working with young people

ii. I am experienced at facilitating debate and discussion with young people
iii. I am experienced at facilitating debate and discussion amongst adults

What were your main goals for Doing Dialogue training programme?

i. [Free response]

Which elements of the 'Doing Dialogue' training did you find useful

i. introduction and context
ii. facilitator styles
iii. engagement and body language
iv. containment
v. theory into practice

Which element of the 'Doing Dialogue' training did you find most useful

i. introduction and context
ii. facilitator styles
iii. engagement and body language
iv. containment
v. theory into practice

Why was this

i. [Free response]

Which elements of the 'Doing Dialogue' training were not useful

i. introduction and context
ii. facilitator styles
iii. engagement and body language
iv. containment
v. theory into practice

Why was this

i. [Free response]

What do you feel that you gained from the 'Doing Dialogue' training

i. New skills
ii. Confidence in my existing skills
iii. New knowledge
iv. Practical tips
v. Other – please specify

What areas of your work will the ‘Doing Dialogue’ training help with?

i. Exhibitions
ii. Schools activities
iii. Public events
iv. Debates
v. Audience research
vi. Staff management
vii. Other – please specify

Would you feel confident about delivering ‘Doing Dialogue’ training in the future

i. Yes
ii. Yes, but I’d need more support/training first
iii. Probably not
iv. No

Appendix H Evaluation of Ecsite-uk Project Doing Dialogue Facilitation Training Manchester 17th February 2006

This evaluation was conducted by Marilyn Doyle

Overall impressions

My overall impression was of a lively, engaging, well planned, fast paced course that met the stated objectives.

The course builds on and affirms the participants' experience, skills, abilities and knowledge.

There was a strong focus on how 'Doing Dialogue' with young people might be different from 'Doing Dialogue' with adults and trainers shared their experiences (good and not so good) freely with participants.

The trainers complemented each other's styles and they worked well together as a team. They all quickly and easily established a rapport with the group and 'modelled' the facilitator style they were training.

Course Structure and Content

Before the course I compiled an evaluation checklist (see page 11) and I have used this to structure the report.

General comments on course structure and flow

Please note that the trainers did most of the things I mention here – I'm saying 'great – keep doing them!'

- There are many ways the elements of the course can be put together – and this way worked well (apart from one query I have). I see all these elements as pieces of a jigsaw puzzle, that all come together in the Forum Theatre session when participants are asked to integrate their learnings.

- Some links (backwards and forwards) at the beginning of each new session are useful for participants to understand how all the jigsaw pieces fit together.

- Equally, it is useful to bring each session to an end, leaving a session 'hanging' can leave participants feeling unsatisfied and not ready to take on the next topic. Pulling the key learnings together, integrating all the main comments from the group discussion, reviewing the flipchart notes can all round off what has been said and done. (A metaphor is to weave all the strands together into a plait – and then put the bow on!)

I used the Honey and Mumford Learning Styles to check that all 4 learning styles (activist, reflector, theorist and pragmatist) were integrated into the course – and they are. (*I've sent Savita a paper copy of a handout on these learning styles, sorry, I don't have an electronic copy.)*

- I also checked for the 7 intelligences described by Howard Gardner and now widely used in schools and accelerated learning courses. These intelligences are: logical, visual/spatial,

interpersonal, intrapersonal, physical, linguistic, and musical. The course offers a good spread of all intelligences with the exception of musical and visual/spatial.

Suggestions to strengthen and develop the overall course structure and flow

Now you have a list of objectives, I would suggest that you list the key learning points for each session. I know that you know what these are – and it would be useful to have them written down as a checklist – and also to support any new trainers.

It would also be worth taking the time to note down the steps in each session – again as a checklist for you and for new trainers. A suggested way to do this is given on page 10.

The sessions on 'Blocking roles' and 'Difficult participants' still feel quite similar to me. Maybe when you have some clear objectives and key learning points for these two sessions, you can decide how they fit into the overall flow of the course. One idea may be to flow from 'Blocking roles' straight into 'Difficult participants' – moving from personal stories and experiences into a 'case study' scenario. Move the 'Assessing if we are facilitating' to after the 'Questioning' when participants have more experience of your three styles and a better idea of what a 'Doing Dialogue Facilitator' does. Then this session would be a useful review of the course to that point.

It would also be useful to have a list of questions that can be used in the group discussions in each session. You three know the questions that work – if you are moving into a Train the Trainers course, these trainers may not have your experience.

It is challenging to add musical intelligence into a short, fast paced course – however, you could play some appropriate music at the beginning and in the break. Music could also be used to signal the end of small group/pair work – participants soon connect a piece of music with the 'come back' call – and this can get over the 'Sorry I'm interrupting you' that sometimes needs to happen.

Visual/spatial intelligence can be included by having more flipcharts displayed around the room. For example, a 'road map' of the course could be introduced in Session 1 and then this could be put on the wall – this would also be useful resource for links backwards and forwards – and also for participants to refer to in the Forum Theatre session and at course evaluation time. Ground rules also need to be on display, in case you need to refer back to them at any point (especially when Doing Dialogue). Similarly, all notes written on flipcharts during the sessions could be displayed.

It may be better for the trainers to take flipchart notes during the sessions – at least until a good 'model' has been given. While you have 2/3 trainers one of the trainers not leading can take the notes. This way you can include a variety of ways to keep a record of the discussion – pictures, mind mapping, use of colour, size of print etc.

- Participants could have some experience of doing flipchart recording in their pair/small group discussion time in 1 or 2 sessions – have some bright coloured felt tips around. This could also offer participants another way to work with the young people when discussion in plenary is not working for some reason – or just for a change of pace. Pairs/small groups can then quickly report back – or you can set up a 'gallery walk' to review the work and then have a plenary debrief.

Comments on individual sessions

Session 1: Introduction and ground rules:

What went well

- Session flowed well
- Established the WIIFM (what's in it for me) to get participant buy in
- Gave participants the 'big picture' of the course
- Set style and pace of the course

Suggestions to do more of/add in

- Have a flipchart, giving the 'roadmap' of the course (to include visual intelligence and example of use of flipchart)
- Short discussion on how to engage young people at the beginning of a Doing Dialogue session and how to agree ground rules

Session 2: Questions about facilitators

What went well

- Getting participants up and moving about and sharing their experiences of facilitating

Suggestions to do more of/add in

- Start this session by defining what you mean by a 'A Doing Dialogue Facilitator'. This is a unique facilitation style and it would be useful to use this definition as a frame for the rest of the training. (Have definition on flipchart on wall also.) Your questions for this session can relate to this definition and link into participants experience of working in this way.
- Suggest that participants sometimes 'take a step' back from the content to notice how the trainers are facilitating as they will be reflecting on that later in the course.

Session 3: Volunteers to do recording skills

I would suggest that you do not ask for volunteers at this early stage in the course because volunteers do not know specifically why they are documenting the discussion and they do not have any useful models to follow. Also – this volunteer cannot take part in the discussion.

Session 4: Blocking roles

What went well

- Linking into personal experience
- Having worksheet to stimulate discussion.
- Questions used to draw out participant experience

Suggestions to do more of/add in

- If you intend to ask participants to share positive and negative experiences, give two handouts – one for blocking roles and one for building roles. Pull out examples of both – and how to encourage more helpful roles.

- When you have more clarity on the key learning points for this session and the session on Challenging Participants, you may just want to draw on personal experiences in this session and not use any handouts.

Session 5: Assessing if we are facilitating

What went well

- Personal reflection and catch up time

Questions asked in the discussion

Suggestions to do more of/add in

You could divide this handout into task and relationship skills – and pull out the need for both in the key learning points.

As mentioned earlier, this session could usefully go later in the course – as a review before going into theory and when the participants have had more exposure to the trainers styles and so have a much better idea of the role of a Doing Dialogue facilitator. Participants could work in pairs or small groups to share their ideas and then have the plenary debrief.

Session 6: Body Language

What went well:

Raised energy levels, complete change of pace

Probably a novel way of looking at body language for the participants

Suggestions to do more of/add in

Make sure participants are clear that they are modelling a Doing Dialogue facilitator – and that too much energy can cause as many problems as too little. One question in the discussion could be 'What could be the result of a too enthusiastic Doing Dialogue facilitator?'

Session 7: Questioning

What went well:

Raising participants' awareness of the type of questions that are useful in Doing Dialogue.

Having some useful questions modelled by trainers

Suggestions to do more of/add in

One possible variation for this session is to start by asking participants for examples of questions the trainers have been using during the group discussions. Ask participants if they remember any 'why' questions? WHY not?

Either talk about open questions and ask for some examples before the go round, or, if time allows, play a game of 20 Questions.

1. One trainer thinks of a famous person.

2. The group ask questions to establish who the famous person is. Group can only use questions that are yes or no answers. Someone counts the number of questions needed to get the correct answer.

3. Trainer thinks of a second famous person.

4. The group again ask questions to establish the name of the famous person. This time they can use open questions. Someone counts how many questions are needed to get the correct answer.

5. Debrief on what open questions were most useful and ask for other examples

Session 8: Difficult participants

I would strongly suggest changing the name to Challenging Participants. This can encourage participants to think about this behaviour in a different, more productive manner.

What went well:

Case studies as stimulus material

Useful set of questions

Trainers sharing their experiences – good for participants to know that they also experience challenges and the facilitator flexibility that is sometimes needed.

Suggestions to do more of/add in:

Clarity on objectives and key learning points for this session will indicate where it best fits in the flow of the course

In the pairs/small group work participants could document their ideas and then either feedback in plenary – or you could set up a gallery walk, followed by a short discussion. This would be a change of pace – and another example of how participants could work with young people.

Session 9: Group theory

What went well:

Brief input relating directly to Doing Dialogue sessions

Useful to have handout as back up information

Suggestions to do more of/add in

Nothing to add!

Session 10: Facilitation Styles

What went well:

Prepared sheets gave a great basis for discussion

Excellent questions to draw out participant knowledge and experience

Good group discussion – generated lots of energy.

Suggestions to do more of/add in

Link back to previous session – are different styles/strategies more appropriate at different times in the group's development?

Link back to the definition of a Doing Dialogue facilitator given in Session 2

One trainer can document as a mind map.

Session 11:Recording skills review

What went well:

Great segue given by participant!

Useful discussion about flipchart notes

Suggestions to do more of/add in

Have all these flipcharts on display – you could then do a 'gallery walk' to look at the flipcharts – this will raise the energy in the room.

I've already mentioned having a good model before you ask for volunteers – and also the problem of participants not being able to take part in discussions if they are documenting – you'll need to decide which you want to go for!

Session 12: Practice

What went well:

This session has great potential for learning and integration

Excellent set up – really key for Forum Theatre

Lots of fun and high energy in the room

Suggestions to do more of/add in

If flipcharts are around the walls, participants can use them as a reminder in this session

Other ways of setting up – especially in a small group when no-one is willing to take over the 'good' facilitator role:

1. Facilitator can clap for time out and nominate someone else to take his or her place and continue.

2. Facilitator or trainer can clap and ask for some suggestions about how to deal with the challenging participant – this can lead to a trainer led discussion or the trainer can ask a participant to try out their suggestion in the role play. Ask participates role-playing students to respond to the facilitator if they think students would.

Session 13: Review and analyse:

I suggest changing the session name to Review and Synthesise or Review and Integration – you are aiming for participants to integrate and synthesise their learnings at this point in the course.

What went well:

Pairs discussion created a lot of energy

Useful questions

Suggestions to do more of/add in

Have an A4 or half flipchart paper with the title of each session – and put these in a circle on the floor.

1. Invite participants to stand on a session that they really enjoyed. Ask some participants the reason they are standing where they are.

2. Invite participants to stand on a session that was challenging for them – and again ask the reasons from a few participants

3. Invite participants to stand on the session where they learnt most – and again draw out reasons

4. This can lead into an evaluation sheet, if you choose to use one – or some closing comments from trainers and/or participants.

Possible resources for participants to put into a small course manual:

Course overview

Short list of icebreakers/energisers

List of open ended questions

List of guidelines for flipchart notes

Definition of a DOING DIALOGUE facilitator

The 4 facilitation styles

Blocking roles and Helping roles

Tuckman's group theory

Personal action plan

Trainer Evaluation

What went well:

The three trainers worked well together and offered different facilitation styles.

All easily gained rapport with the group, had a gentle sense of humour and modelled a DOING DIALOGUE facilitator.

All shared personal stories of facilitating with young people.

All 'took control' of the group when they were 'in charge'.

All gave clear instructions in setting up activities.

Handouts etc were always 'to hand'.

All good at 'praising' the group for their efforts and at being aware of and maintaining the energy and motivation levels.

All the trainers can learn from each other as they have different strengths. For example:

Josh – excellent at linking sessions and pulling the threads of discussion together at the end of sessions,

Savita – excellent flow of questions in group discussions

Lucinda – excellent at raising the energy in the room, getting participants to engage in the first role-play when just taking on the trainer role.

Suggestions to do more of/add in

Make sure that participants know when you are a trainer and when you are a participant.

When you are a participant, hold back a little and see if your suggestions can come from a participant – if not, then offer them.

Remember to introduce the sessions by linking to other sessions and to bring the session to a timely close – don't leave discussions hanging.

Use more visuals

Use 'Yes and……..' rather than 'Yes, but……'

Think of how you will manage time in a larger group – when everything tends to take longer.

I had written a set of questions for trainer self-evaluation at the end of the course. There is a copy of these questions – you may find them useful – they are based on an Appreciative Inquiry way of working.

Final Comments

A stimulating and well thought out course. Congratulations to all of you for the design and delivery – and good luck with the roll out.

Marilyn A Doyle

February 2006

Example of a session plan format

Session Number: Time:

Session Title:

Timing	
Aim	
Objectives	
Key Learning Points	
Establish links	
Resources	
Outline	

Step by step procedure for the session

Session Review Sheet

Session Title:	Session Content:	
Led by:	Course Objectives:	
Timings	Planned:	Actual:

Introduction to session & links	
Session flow overall	
Presentation of information & set-up of activities	
Responding to CPs input/questions	
Synthesise & close	
Modelling facilitation skills	
Establishing rapport & motivation	
Managing Group Dynamics	
Ensuring participation	
Flexibility	
Did the session work?	

Activist (What?)		Reflector (Why?)		Theorist (What if?)		Pragmatist (How?)
Logical	Visual/ spatial	Inter-personal	Physical	Linguistic	Intra-personal	Musical

Trainer self evaluation

Reviewing the sessions that you led this afternoon:

1. What words/phrases do you remember?
2. What pictures are there in your mind?
3. How did the participants respond?

4. What did you do well?
5. What did you really enjoy?
6. What was a 'stretch' for you?

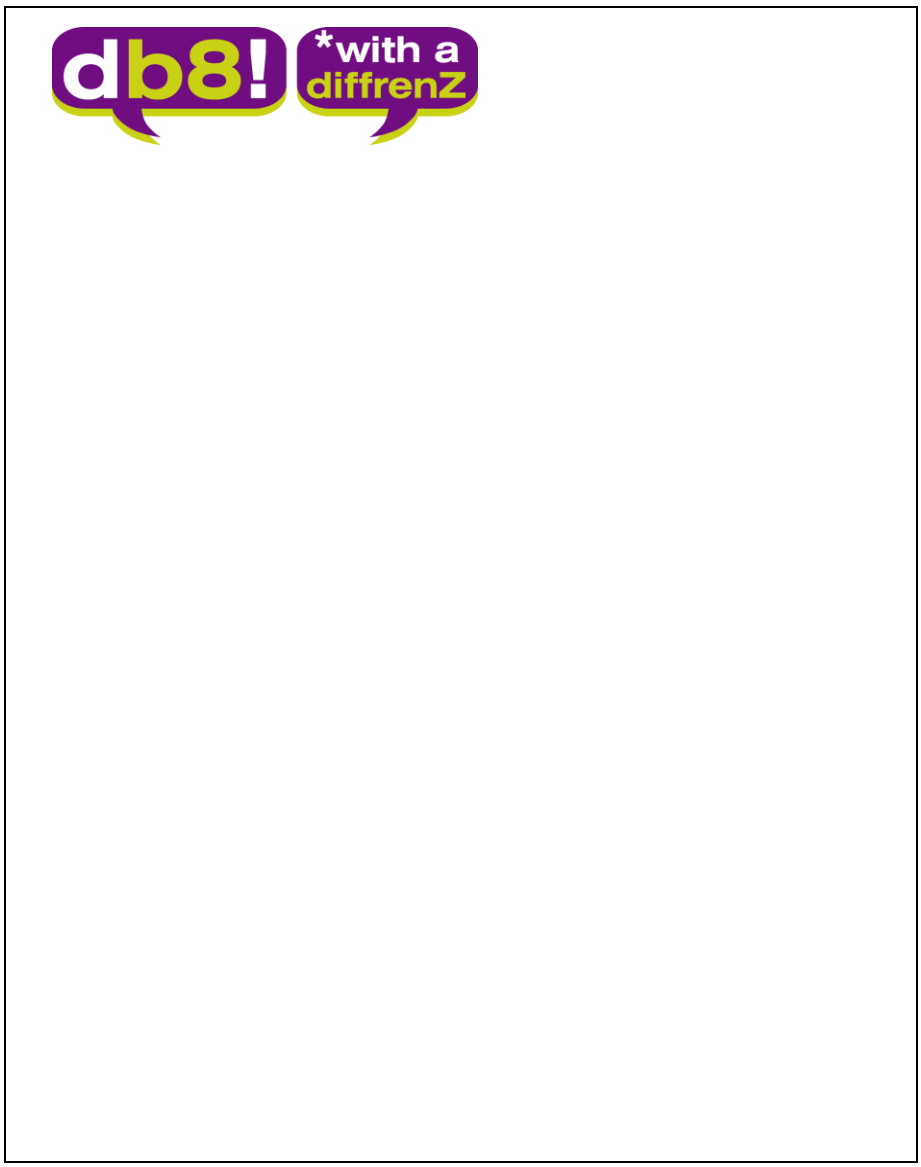
7. What are your main strengths as a trainer?
8. What are your main strengths as a facilitator?
9. How can you use these strengths more the next time you train?
10. What abilities and skills would you like to develop more? What do you already do that will help you to develop these abilities and skills?

11. What will you do more of/ do differently next time you train on this course?

Appendix I Doing Dialogue task information (use 1 per task)

Task name	
Summary of task	
Facilitation/Instructions required	
Resource cards/other printed material required	
Photos/Illustrations required	
Learning styles used	
Consumable resources required	
Follow up research required	
Other	

Create the task card here:



Word count =

Learning Styles

Debates with a Difference are designed to employ as many different learning styles as possible. Use this checklist to evaluate which styles are covered with each of the tasks:

Gardner – 8 Intelligence Theory

- Kinaesthetic – active, movement, using body to express ideas, tactile
- Linguistic – using and playing with words, languages, expressing ideas through discussion
- Logical – number applications and problem solving
- Interpersonal – building and using relationships between people, working together
- Intrapersonal – reflecting, self-analysing, understanding our opinions and motivations
- Musical – using music to inspire or express ideas
- Visual/Spatial - object and image oriented, show and demonstrate ideas
- Naturalistic – using nature and the surroundings, creating new spaces for ideas

Kolb – 4 learning style theory

Activists

- Enjoy new experiences, taking risks
- Open minded, approach problems by brainstorming
- Not strong at implementation or long term considerations

Reflectors

- Enjoy observe experiences from many different perspectives
- Methodical, approach problems through logical data collection and conclusions
- Not strong at direct participation and committing to one standpoint

Theorists

- Enjoy integrating observations into complex but logical theories
- Logical, approach problems in step by step fashion using coherent theories
- Not strong at subjective or intuitive thinking

Pragmatists

- Enjoy testing out new ideas, theories and techniques to see if they work
- Practical, approach problems through experimentation
- Not strong at accepting ideas or points without immediate application

Appendix J Visiting speaker briefs

Dear Angus

Re: db8! with a diffrenZ on 'Vaccinations'.

Thank you for agreeing to attend our debate entitled 'Vaccination'. We would like you to be available to be interviewed by the students attending the event.

During the day, students will work in groups of 8-10 on a number of tasks to find out about vaccinations and the immune response. They will also look at issues surrounding MMR and flu vaccines in more detail. At the end of the day each group will discuss the question 'Should any vaccinations be compulsory?' They will create a policy to represent their views and present this to the whole group.

The aim of the event is for each group to reach a consensus. Their policies will be fed into the Nuffield Council of Bioethics consultation on Public Health (See www.nuffieldbioethics.org. for more info).

At the beginning of the day we would like you to introduce yourself. The following questions could be used to outline your expertise.

- What is your background?
- What is your speciality and how did you get into this area of study?
- What do you enjoy most about your work?
- What are your predictions for the next 5-10 years in terms of vaccination development?

We would like to take the opportunity to thank you for your involvement in this programme and for spend the time with these young people. Hopefully it will be an inspirational and educational day of activities for all involved.

Yours sincerely

Josh Phillips
Science Communication Officer

Premature Babies: Decisions at the Edge of Life

Aim of the event

The Nuffield Council on Bioethics (http://www.nuffieldbioethics.org/) examines ethical issues raised by new developments in biology and medicine. It started in 1991, and is an independent group of people, funded by the Nuffield Foundation, the Medical Research Council and the Wellcome Trust.

The Council has achieved an international reputation for addressing public concerns, and providing independent advice to assist policy makers and stimulate debate in bioethics.

Earlier this year they published a report about the ethics of research involving animals. This report clarifies the debate and aims to help people think through the ethical issues that are raised. It also makes practical recommendations for future policy and practice

Next year they will write a report about prolonging life of the newborn. This report will include information from doctors, lawyers, religious groups and young people. This debate aims to collect views from young people which will be fed back to the Nuffield council of bioethics who want to know what young people think.

We hope that as an invited guest you can give credibility to the topic and reinforce the idea that science impacts on people in the real world. It can also introduce pupils to careers available in the sciences.

Visiting Guest Brief

Your audience will be 14-19 year old students studying biology, religious education or civics (ethics). They will probably have some biology experience but unlikely to have any specific knowledge about the topic of prolonging life of the newborn.

One of the major objectives of the day is to get the opinions of the students on some of the controversial issues surrounding the treatment of extremely premature babies. We are aiming to give unbiased information so the students can discuss and debate the issues amongst themselves. They will be encouraged to discuss issues with you and the other guests. We would like you to be a 'floating' expert who will move between groups and answer their questions and stimulate discussion. You could also discuss questions about your career in general and how you got to the position you are in now.

Please try not to influence their opinions, of course you are free to voice your opinion but please be clear to state when you are talking about your opinion versus what is a fact or research-based evidence. It may be useful to use examples from different viewpoints if appropriate.

At the beginning of the day, all the students will be gathered together for an introduction by the organiser. During this time you will be invited to introduce yourself.

During this slot please speak about the following for about 5 minutes:

1) Tell the students your name and where you work

2) Briefly describe your job title and what you do on a day to day basis

3) Tell the students what knowledge you have about the topic of prolonging the life of the newborn and what types of questions you'd be happy to answer/discuss.

After the main session, the students will split into groups of about ten. We will schedule each group to spend time with you and ask any questions they have. The students will be learning the background info and understanding some of the issues involved in treating extremely premature babies.

Timetable for the Day

Science centre timetable goes here

Please note this timetable is flexible and exact timings may change. However the start and end times will remain fixed.

The Centre for Life adds: in our cover letter, we also let them know where the debate is going to be held and how to get into the venue (e.g. which entrance should they use, are there any security doors, who should they ask for etc) and if any refreshments and/or lunch will be provided.

Appendix K Content options grid

Activity	Learning style: Visual Auditory Kinaesthetic	Purpose	Example
Introduction	v	Overview of day	
Input: specific knowledge			
Group Brainstorm	k	Establishes starting point. Ice breaker	Stem cells: brainstorm
Fact library	v	Builds up store of knowledge throughout day	Stem cells: fact library
Focus activity	k	Generates team work by sharing prior knowledge	Stem cells: draw different cells
Headlines	v	Shows subject is topical and relevant	Vaccinations: headlines
Opinion Line	k	Establishes area for fruitful discussion	Genetic testing: what would you allow
Time scale	k	Establishes current understanding	Vaccination: time line
Ranking	k	Places events in temporal context	Stem Cells: therapeutic cloning flowchart
Interview	a	Gives real science a personal face	Vaccinations/Prem babies: Meet the expert
Cuttings	v	Separates truth and supposition.	Stem cells: media opinions task
Play	k/a/v	Enables each group to contribute a part to a valuable whole	Vaccination - Jenner Story
Mapping	v	Explores differences between practices in different countries	Stem cells: flags / Prem Babies: The country you're born in
Talks	a	Gives examples opposing views	Stem cells: Opposing speakers
Make	k	Explores how something works.	Nanotech: surface area cubes

Matching	k/v	Links different areas of knowledge. Promotes discussion	Vaccinations :link disease to patient
Web research	v	Uses web resources to support knowledge base	Nanotech / Nuclear
Ordering	v/k	Uses data to establish hierarchy of problems/effects	Waste: which is the worst problem
Case Studies	a	Establishes facts from real cases	Prem Babies: Problems arising
Experiment	k	Real testing	Waste: plastic identification
Visualization	v/k	Establish scale of problem	Nuclear: amounts of waste at different levels
Sorting	k	Places real objects into categories	Waste: 3 Rs hoops
Pub Quiz	a	Establishes what groups know in a fun way	Waste: pub quiz
Process: Develop opinion			
Cuttings	v	Separates fact from opinion	Nuclear energy articles
Opinions in the Press	v	Explores differing opinions	Vaccinations cuttings
Write headline	v	Makes students consider different spins on same information	Genetic testing; headlines
Role play	k/a/v	Differences arising from background	Stem cells: US Celebrities /Waste: council
Cartoons	v	Develops appreciation of different viewpoints	Waste
Sorting	v/k	Establishes differences of opinions	Genetic testing: to test or not
Classifying opinions	k	Establishes type of opinion	Premature Babies: personal viewpoints
Advertising Campaign	v/a	Prioritises points of view and allows creativity in a variety of forms	Waste: advertising campaign
Case Study	a	Uses real situations to promote discussion	Vaccinations: MMR Case Study
Critique	v	Meta-analysis to identify successful features	Waste: Campaign critique

Barriers	v/a	Identify problems posed to others by proposed solutions	Waste: barriers
Budgets	a	Prioritises actions within a limited budget	Nanotech: research proposals
Output: share opinion, be creative, gain ownership			
Public service announcement	a/v/k	Very structured output	Nuclear
Policy statements	a/k/v	Reaching consensus	Vaccination/Prem babies/ Stem Cells
Show	a/v/k	Uses variety of skills, can accommodate diversity of opinion	Stem Cells (some)
Recommendation	a/v	Easy to do. Not all need to contribute at same level	Premature Babies presentation
Formal feedback	v	Opinion valued at higher level	Nuclear / Vaccination/ Premature Babies
Newspaper	v	Orders opinions - headline, back page, body text , etc	Waste: newspaper

Appendix L Marketing Toolkit

About the Toolkit

The purpose of this Toolkit is to highlight the most effective ways of publicising dialogue events for young people. This Toolkit is based on the outcomes of the Doing Dialogue project.

Doing Dialogue

'Doing Dialogue' was a two year project run by Ecsite-uk that incorporated biomedical discussion into the programme of four science centres and science museums throughout the UK. Senior pupils attended dialogue events in the partner organisations where they were actively involved in discussing contemporary science issues.

Choosing a topic

Choose a topic that appeals to high school teachers. It can be complicated and time consuming for teachers to organise a school trip. In order to be a worthwhile use of a teacher's time and a school's money the content of your dialogue event must be relevant to the curriculum. When designing your event make sure that there are clear links to the national curriculum and highlight these in your marketing materials.

The topic you choose should also be controversial in some way. If it is not controversial it may become difficult to maintain pupil interest and participation.

As with any booked event, you are unlikely to reach your capacity for each event you run. In the table below are the percentage bookings (compared to capacity) for dialogue events run in MOSI (Museum of Science and Industry) in Manchester, GSC (Glasgow Science Centre), The Centre for Life in Newcastle and TT (Think Tank) Science Museum in Birmingham.***

	MOSI	GSC	LIFE	TT
Newborns	60%	80%	84%	50%
Vaccinations	55%	50%	92%	50%

Choosing a date for your event

It is clearly worth consulting with teachers when you are planning your dialogue events. The Doing Dialogue team also suggest that you consider the following factors:

- Space in the science centre calendar. For example, it is advisable to avoid running debates in the summer term when the science centre/museum will be busy running other activities.
- Space in the school calendar. Senior pupils will be unlikely to be able to attend an event in the weeks preceding exams and preliminary exams. It is worthwhile researching exam times in your area.
- Market your dialogue event at the beginning of the school year and also at the start of the relevant school term

Charging for dialogue events

Glasgow Science Centre sometimes offers free debates and sometimes charge £3/4 depending upon demand and initial bookings.

GSC has received general transport funding for underprivileged schools to visit. Look out for similar funding in your area.

Thinktank, Birmingham science museum, and the Museum of Science and Industry (Manchester) charge £8 and £3 per pupil respectively. The Centre for Life runs free dialogue events.

Whether you charge (or not) for you event will probably depend on the conditions of your funding, and the policy of your organisation. During the Doing Dialogue project, centres experimented with both options.

It can be the case that charging for an event adds more value to it and as a result schools are less likely to cancel. The cost of travel is prohibitive for some schools. Seeking funding which covers, or contributes to, transport costs can address this.

Museum of Science and Industry (Manchester) find that schools are more likely to attend dialogue events at the beginning or end of the school week. Because of this, and staffing reasons, MOSI choose to run events on Mondays.

Thinktank, Birmingham science museum, find that February, March, June and July give the best uptake for their dialogue events.

Marketing your event to schools

In order to market target your event marketing effectively it is useful to think about the following:

- If the centre produces a teacher guide, include a section on your dialogue event detailing curriculum links, age group suitability and cost.
- Include teacher quotes on marketing materials to add professional credibility.
- Consider circulating a more specific 'secondary event' or 'senior event' flyer advertising your dialogue event alongside other activities that will appeal to high school teachers.
- Use the internet by advertising on the centre website. A flavour of the debate experience can be offered via interactive voting games. See www.smm.org/buzz/ for an example.
- Build up a contact list of interested teachers who can be contacted about your event directly or consider using an e-newsletter.

Targeting pupils

Think about your pupil audience and target marketing towards their teachers. It is useful to send marketing materials directly to your target teachers or departments.

A level and AS level courses to target in England, Wales and Northern Ireland are:

- Science, Citizenship and General studies

Standard Grade, Higher and Advanced Higher courses to target in Scotland are:

- Biology, Human Biology, Modern studies, Personal and Social Development and Religious, Moral and Philosophical Studies

Thinktank target KS 3 and 4 science and citizenship

The Centre for Life target all ages and subjects

Museum of Science and Industry targets KS 4 science

Working in partnership

If you are working with a group of science centres, or with an external organisation, you may find it useful to prepare some common materials. During the Doing Dialogue project, we found that common text for flyers and well-prepared curriculum links were the most useful things to share. We also had a common 'logo strip', and shared teacher comments for marketing materials.

Other tips and tricks

- Other things tried by the centres involved in Doing Dialogue project include:
- Showcasing events at teacher preview events (Raising the profile of your dialogue event will boost bookings. Speaking to teachers in person is often more effective than mass marketing.)
- Inviting a journalist to dialogue events (This is a good profile-raising activity. If the story is covered it will add credibility to your event.)
- Incorporating a CPD (Continuing professional development) element into debate days (Teachers undergo training as part of their professional development – this is a great opportunity to train teachers in discussion techniques while adding value to your dialogue event.)
- Commissioning photographs (Marketing can rely on a good photograph – it makes an event look more appealing. Photographs of a dialogue events are good to add to your stock photographs – they can be harder to take than for a hands-on workshop or show.)
- Consult teachers on the best time to release senior pupils from school.
- Launch a series of events at a national level e.g. in the Times Educational Supplement or at the BA festival of Science.
- Offer incentives. A free coach, free lunches or money off subsequent events will encourage uptake.
- Brand your dialogue event using screens and banners in order to give a professional look.

Appendix M Student questionnaire

'INSERT TITLE OF EVENT'

This questionnaire is to help us understand what works and what doesn't in 'INSERT TITLE OF EVENT'. It is not a test, but your answers are important to us and will help us improve the event, so please do take a few minutes to think about them. We have not asked you to fill in your name and no individual replies will be given back to your teachers.

Q1 Please write in the name of your school

Q2 Which year group are you in?

9 or S2	☐	12 or S5	☐
10 or S3	☐	13 or S6	☐
11 or S4	☐		

Q3 Are you male or female?

Male	☐	Female	☐

Q4 Did you enjoy 'INSERT TITLE OF EVENT'?

Yes	☐	No	☐

Q5 What did you think was the best bit?

Session 1	☐	Session 6	☐
Session 2	☐	Session 7	☐
Session 3	☐	Session 8	☐
Session 4	☐	Session 9	☐
Session 5	☐	Session 10	☐

Q6 Why was this the best bit?

_

Q7 What did you think was the worst bit

Session 1	☐	Session 6	☐
Session 2	☐	Session 7	☐

Session 3	☐	Session 8	☐
Session 4	☐	Session 9	☐
Session 5	☐	Session 10	☐

Q8 Why was this the worst bit?

Q9 Was ' INSERT TITLE OF EVENT ' useful for any of these school subjects?

Art	☐	Drama	☐	Maths	☐	Science	☐
Biology	☐	English	☐	Physics	☐	Other	☐
Chemistry	☐	History	☐	PSHE/ Citizenship	☐	None	☐
D & T	☐	ICT	☐	RE/RS	☐		

Other (please write in)

Q10 Which subject do you think ' INSERT TITLE OF EVENT ' was most useful for?

Art	☐	Drama	☐	Maths	☐	Science	☐
Biology	☐	English	☐	Physics	☐	Other	☐
Chemistry	☐	History	☐	PSHE/ Citizenship	☐	None	☐
D & T	☐	ICT	☐	RE/RS	☐		

Other (please write in)

Q11 Which bit of ' INSERT TITLE OF EVENT ' did you learn most from?

Session 1	☐	Session 6	☐
Session 2	☐	Session 7	☐
Session 3	☐	Session 8	☐
Session 4	☐	Session 9	☐
Session 5	☐	Session 10	☐

Q12 Which bit of ' INSERT TITLE OF EVENT ' did you learn least from?

Session 1	☐	Session 6	☐
Session 2	☐	Session 7	☐
Session 3	☐	Session 8	☐
Session 4	☐	Session 9	☐
Session 5	☐	Session 10	☐

How would you describe your ethnic origin?

Black African	☐	Indian	☐	White UK	☐
Black Caribbean	☐	Pakistani	☐	White European (non-UK)	☐
Black UK	☐	Bangladeshi	☐	White, other	☐
Chinese	☐	Other Asian	☐	Other	☐

Thank you very much for your time. Please hand this in before you leave.

Appendix N Teacher telephone interviews

Hello my name is … from … I'm calling with regard to the 'Premature babies: decisions at the edge of life' event that your students took part in recently. I'd like to ask you a few questions about the event as part of our process of understanding how this and similar events can be improved. This should take about 10 minutes, do you have time to talk to me now?

Could you explain your responsibilities?	
How did you find out about the event?	
Were you responsible for making the booking?	
How easy was this process and was there anything we could do to improve it?	

What were you hoping your students would get out of the day?	
Why was this?	
Did you think that the event successfully delivered what you had hoped?	
Yes- How	No- Why not?

What were you hoping your students would get out of the day?	
Why was this?	
Did you think that the event successfully delivered what you had hoped?	
Yes- How	No- Why not?

We are keen to know how we can improve events like these, so were there any parts of the day that were weaker?	
Why do you think this was the case?	
Have you got any suggestions as to how we might improve?	

On a more positive note, do you think that there were any elements that were particularly good, that we should build on for this or future events?	
Do you think that these events will help students with their studies?	
Yes- Which subjects will it help with?	
And of these, for which subject do you think that it has the most relevance?	

Would you bring a party of students to the same event again?	
No- Why not?	Yes- Would you recommend this event to colleagues in your (or another) school?
	Yes- Why?

Are there any other topics, on which you think we should develop similar events?	

Thank you very much for your time so far. I'd just like to finish by asking if there is anything else at all that you'd like to say about the event?

Appendix O Teachers' interview guide

[Briefing for interviewers]

The purpose of interviewing teachers is to gain a further perspective on the value of the Doing Dialogue project for schools and students. This is formative evaluation and the data is qualitative in nature. You are trying to build an understanding of why and how things work or not, rather than collect data that will enable you to say '95% of teachers said…'.

You will need to record the conversation in some way. This is most likely to by making notes during the conversation, using a hands-free telephone will help with this. If you do make notes, it is good practice to write them up quickly, whilst their meaning is still clear. Some telephone systems offer the capacity to record the conversation, which allows you to listen back later and make comprehensive notes. If you have these facilities and wish to use them, you must gain the interviewee's permission to record the conversation.

Introduction

Hello my name is …… from …….. I'm calling with regard to the 'Premature Babies: Decisions at the edge of life' event that your students took part in recently.

I'd like to ask you a few questions about the event as part of our process of understanding how this and similar events can be improved. This should take about ten minutes, do you have the time to talk to me now?

[Note to interviewers. If it is not convenient, try to confirm a time that will be suitable for the teacher. However, teachers' schedules are subject to change at little or no notice and calling back will not always be successful, so whenever possible try to complete the interview when contact is first made.]

Responsibilities

Firstly it would be very helpful if you could explain your responsibilities to me.

What is the main subject that you teach?

Do you hold any sort of management position within the school?

Did you attend the event at ….?

If not, check whether it would be more appropriate to speak to someone else.

Were you responsible for arranging the booking?

If yes, how easy was this process for you?

Is there anything we could do to improve the process?

Objectives

What were you hoping that your students would get out of the day?

[Note to interviewers. Record each response and follow-up each point with]

Why was this?

Do you think that the event successfully delivered what you had hoped?

If yes, how did it do this?

If not, follow up with why not?

Weaknesses

We're keen to know how we can improve events like this, so were there any parts of the day that were weaker?

[Note to interviewers. Record each response and follow-up each point with]

Why do you think this was the case?

Have you got any suggestions as to how we might improve ***[each specified element]***?

Strengths

On a more positive note, do you think that there were any elements that were particularly good, that we should build on for this of future events?

[Note to interviewers. Record each response]

Do you think that the event will help your students with their studies?

If yes, Which subjects will it help with?

[Note to interviewers. Record each response]

and of these, for which subject do you think that it has the most relevance?

Future interest/recommendation

Would you bring a party of students to the same event again?

If not, follow up with 'why not'?

If yes, follow up with 'would you recommend this event to colleagues in your (or another) school?'

If yes, follow up with 'why?'

Are there any other topics, where you think we should develop similar events?

Final comments

Thank you very much for your time so far. I'd just like to finish by asking if there is anything else at all that you'd like to say about the event?.

Appendix P Sample teacher responses

	Person A	Person B	Person C	Person D
Could you explain your responsibilities?	*Science teacher*	*Deputy head, responsible for citizenship and a biologist.*	*Head of RE*	*Head of Science*
How did you find out about the event?	*Head of Science gave her an MSIM produced leaflet*	*Flyer- could have been faxed to school.*	*The Head of Science had a flyer. Could we send one to both of them next time?*	*Received a flyer through the post*
Were you responsible for making the booking?	*Yes*	*Yes*	*Yes*	*No*
How easy was this process and was there anything we could do to improve it?	*She didn't realise she had to download a booking form from the website. Could we make this clearer on leaflet, and note where to find it. She didn't find it hard to find on the internet.*	*Fine however, the booking form didn't fit with the event.*	*They were not sure a few days before if their booking had been confirmed they thought it had but they had an email from Caroline about it only being provisional.*	*They didn't know that they needed a booking form after they had emailed through numbers.*
What were you hoping your students would get out of the day?	*Social skills, debate skills.*	*Year 11 biology students. Help with their curriculum but more for her benefit to help to plan for the new curriculum. Also lends itself to citizenship.*	A good insight into the issue. For their pupils to be involved in group activities. To be presented with up to date information.	*Ability to think for themselves- independent thought. Wider issues in Science and to meet current people in the field.*
Why was this?	*They don't debate in schools. Here they can develop skills, which they can't get in school.*	*Relevant to the current cohort but also more relevant for the new curriculum. Meets curriculum not just in Science but 'right across the board'.*	*They were looking at IVF treatment but their text books were not so good. They were not up to date.*	*At their school they teach 'this is how it is' but this was more relevant to the curriculum.*
Did you think that the event successfully delivered what you had hoped?	Yes	*I think so*	*Certainly did*	*Yes*

Yes- How: No- Why not?	*They enjoyed the day. It is hard for her girls to listen so she was impressed they had taken turns and listened to others. They were sharing what other participants had done.*	*It focussed the students. They were interested in the chronology of the pregnancy and abortion times. But she had not intended them to look at this.*	*It was so successful that she has since delivered a sixth form general studies lesson out of it.* *It enabled her to 'see the kids in a different light.'* *Margot Brazier was a brilliant speaker.*	*Well organised, Built up learning. Kept students focussed. The use of facilitators was good.*
We are keen to know how we can improve events like these, so were there any parts of the day that were weaker?	*She didn't watch debate, however pupils commented on how well organised it was, and at break time they were keen to get back in.*	*Not from the students but from her point of view. She felt like a spare part, hadn't realised she wouldn't be in the room. Her time could have been better spent.*	*Run an Inset for teacher's to share resources. Did enjoy walking around the Museum though.*	*Not particularly. It would have been useful to know they were not staying in the room. The organisation needs to be made much more obvious.*
Why do you think this was the case?	*They enjoyed it.*	*She didn't realise she wouldn't be involved and she could have brought something with her, not that there were any quiet spaces in the Museum anyway. She felt she wasted time, she did look round but was frustrated that she could have been doing something else.*		
Have you got any suggestions as to how we might improve?	*Only the booking form.*	*A general point. She arrived early. It was snowing and she had to wait outside.* *Highlight which year group we are aiming at. She felt it was appropriate for year 11's or older but they wouldn't like to come if there were year 7's or 8's there, even though the content was suitable for them both. Pupils would think it was babyish if they saw younger pupils there. Perhaps hold an older and younger day.*	*'No, the whole day was fab.' The facilitators were great.* *Open it up to 6th form.*	See above

On a more positive note, do you think that there were any elements that were particularly good, that we should build on for this or future events?	*She was impressed with the overall organisation of the day. Liked the breaks, and group arrangements. In the future she would like to see a half-day inset and not a full day as suggested, so she can look around the museum and see how she could link the curriculum to future trips.*	*It was really good that the students were mixing. Especially when they had different ideas for cultural or religious reasons. In her school the ethnic mix is minimal.*	*She loved the teamwork and presentation at the end. It was good to be working against the clock in a positive way.*	*Liked the fact pupils got to talk to real people in the field. Liked the experts and the fact pupils got time to talk to them. More blurb about the day would have been useful- e.g. pupils would be in groups across different schools.*
Do you think that these events will help students with their studies?	*Not this particular topic. When the new curriculum comes in pupils look at up to date issues. Vaccinations will be 'very appropriate to the curriculum'.*	*In a wider context yes but not this particular topic. It develops pupil's life long skills not just their studies.*	*Definitely not just academically but socially.*	*Makes them think more, but not necessarily. They might now be more interested in the subject beyond GCSE.*
Yes- Which subjects will it help with?	*Science, drama, presentational skill and English. It can be linked to the History of Science and Science across the world.*	*R.E – Moral dilemmas with modern medicine. New curriculum.*	*Science, and RE with ethics. She would like RE to be more represented in the future.*	*Ethics. There was a lot of science in it but most of the day was about issues.*
And of these, for which subject do you think that it has the most relevance?	*Science*		*Science*	

Would you bring a party of students to the same event again?	*Yes, this was her second time.*	Yes. This time brought year 11's but it would be more successful at another time of year, at the moment they are under pressure. Autumn term is best for older students.	*Certainly would*	*Yes*
Yes: Would you recommend this event to colleagues in your (or another) school?	*Yes*	*Yes*	*Yes*	*Yes*
Why?	*Pupils gained a lot, plus it was*	She has already mentioned this	*For all sorts of reasons. It was good they were not talked at.*	*Useful experience. Good to be taught by other people and not*

	a chance to socialise.	to the Head of RE.	*There was a good range of activities. There were some good challenges, They were in a team but not of their choosing. They had confidence to take this on. They were put in charge of the debate and she liked the fact there was a purpose behind the debate. It was a hot potato subject.*	*just teachers.*
Are there any other topics, on which you think we should develop similar events?	Genetics, modification and engineering.	*As they teach General Studies at A level it would be useful to do a debate on Assisted reproduction and embryo technology*	*IVF*	*Stem cells. Anything linked to genetics e.g. sex selection. Nuclear energy. Anything linked to the new GCSE specifications*

Appendix Q Experts' interview guide

[Briefing for interviewers]

The Doing Dialogue relies on the input of various experts and stakeholders. Understanding their views will be an important factor in knowing how best to engage experts and stakeholders in future events on different topics. This data is qualitative in nature. You are trying to build an understanding of why and how things work or not, rather than collect data that will enable you to say '95% of experts said…'.

You will need to record the conversation in some way. This is most likely to by making notes during the conversation, using a hands-free telephone will help with this. If you do make notes, it is good practice to write them up quickly, whilst their meaning is still clear. Some telephone systems offer the capacity to record the conversation, which allows you to listen back later and make comprehensive notes. If you have these facilities and wish to use them, you must gain the interviewee's permission to record the conversation.

Introduction

Hello my name is …… from ……. I'm calling with regard to the 'Premature Babies: Decisions at the edge of life' event that you took part in recently.

I'd like to ask you a few questions about the event as part of our process of understanding how this and similar events can be improved. This should take about ten minutes, do you have the time to talk to me now?

[Note to interviewers. If it is not convenient, try to confirm a time that will be suitable.]

Background

Firstly how did you originally get involved in the project?

Have you taken part in this sort of thing before?

If yes, explore how often and whether it is as a volunteer or part of a job?

Objectives

What if anything were you hoping to get anything out of the day at a personal level?

[Note to interviewers. Record each response and follow-up each point with]

Why was this?

Do you think that the event successfully delivered what you had hoped?

If yes, follow up with 'how did it achieve this?'

If not, follow up with 'why not?'

In particular probe for whether the respondent feels that in hindsight their objectives were unrealistic or whether flaws in the event that could be remedied.

[Note to interviewers. Both causes of dissatisfaction can be addressed, either by clarity during the process of recruiting experts or by the actual delivery of events. It is important that the respondent appreciates that knowing the causes of any dissatisfaction will help to improve the experience of other participants in the future]

Do you think that the event was successful for the young people involved?

If yes, follow up with 'what do you think that they got out of it?'

If not, follow up with 'why not?'

Weaknesses

We're keen to know how we can improve events like this, so were there any parts of the day that were weaker than others?

[Note to interviewers. Record each response and follow-up each point with]

Why do you think this was the case?

Have you got any suggestions as to how we might improve [each specified element]?

Strengths

On a more positive note, do you think that there were any elements that were particularly good, that we should build on for this of future events?

[Note to interviewers. Record each response and follow up with]

What was it that was particularly good about [each specified element]?

Future interest/recommendation

Would you take part in this event again?

If not, follow up with 'why not'?

If yes, follow up with 'would you recommend that your colleagues or peers get involved with this or similar events?'

Are there any other topics, where you think we should develop similar events?

Final comments

Thank you very much for your time so far. I'd just like to finish by asking if there is anything else at all that you'd like to say about the event?

Thank you again for your time.

Appendix R CIPAST: ID Card

2nd CIPAST Training Workshop
17 – 21 June 2007
Procida, Italy

ID card of case study: Doing Dialogue

Title

To design a participative process for a consortium of UK science centres (based in Scotland and England) aimed at young people aged between 14-19 years old to feed into a national public consultation.

Short description of the case

Participants will address the objectives set by a consortium of UK science centres to create a participatory process using scientists that will engage and provide the views of school students aged between 14-19 years old for a public consultation to examine ethical issues raised by new developments in biology and medicine called The ethics of prolonging the life of fetuses and the newborn.

This case study is based on a project run by Escite uk in partnership with Thinktank Birmingham Science Museum, Glasgow Science Centre, Centre for Life, Newcastle and Museum of Science and Industry, Manchester which ran from 2005-2007 called 'Doing Dialogue'

Training objectives

Participants will learn:

- To take into account the importance of issue framing when designing a participatory process for school children (14-19years old) in terms of linking to the statutory curriculum and the needs of the consulting body
- To take into account the need to engage a young audience when reframing questions
- Strategies for choosing a participative process that will engage young people who are unfamiliar with them
- To design a participatory process for young people (including choice of method, how to feed back results to consultation body, how to involve scientists and science centre staff in the process and methods of dissemination)
- This case study is specifically of interest to those who are involved in science centre or museums. It will also interest those who are interested in consulting with young people on ethical issues relating to biology and medicine.

Training method

Participants will work in small facilitated groups to complete a series of tasks leading to discussion and design of a participatory method to involve young people. Results will be fed back to the whole group after the completion of some of the sessions. These results will inform further tasks.

This case study is based on an actual project so a background context will be given to all participants. So we will be working to the objectives of the project which include:

Provide Nuffield Council on Bioethics with the views of 14-19 year old school students in response to their public consultation called 'The ethics of prolonging the life of fetuses and the newborn'

To be carried out within several UK science centres

Involve scientists

Targets 14-19 year old school students and their teachers and enables them to attend a science centre for at least 5 hours

Participants will need to consider the restrictions the actual project worked with for example working within a science centre and using their staff, how do you involve scientists? They will be asked to bear in mind a number of planning steps when framing the questions and

	choosing the final methodology being sensitive to the needs of the audience and the venues. They will need to give a rationale for their choice. The final stages of the session participants will be asked to consider methods of dissemination that could be used and how to achieve good media and PR coverage for the project. This case study requires 5 hours with a 30 minute introduction to set the context and clarify any questions; approximately 4 hours on tasks and discussion in small groups; 30 minutes feedback.
Previous knowledge required	To gain the most from this case study a good knowledge of participatory methods and working with young people is an advantage.
M**aterials**	Necessary • A room large enough for all participants to accommodate dividing into smaller groups for discussion • Flip charts/pens and stands -one for each group • Pens and paper for participants to make notes • POST IT notes • Pack of 'Blu Tac' • Equipment to show a power point introduction
Resources and further reading	For further information on this case: sciZmic is a part of Ecsite uk which hosts the Debates with a Difference materials that have been developed as part of the case study www.scizmic.net Completed report on Critical care decisions in fetal and neonatal medicine: ethical issues www.nuffieldbioethics.org Guidance on the English National Curriculum www.direct.gov.uk/en/EducationAndLearning/Schools/ExamsTestsAndTheCurriculum Guidance on the Scottish National Curriculum http://www.ltscotland.org.uk/5to14/curriculararеas/science.asp Project partners www.Ecsite-uk.net www.glasgowsciencecentre.org www.thinktank.ac
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