

Parallel Session: 25 Proposals and initiatives for "public dialogue"

**DARWIN CENTRE LIVE – USING LIVE WEBCASTS TO CREATE
DIALOGUE BETWEEN NATURAL HISTORY MUSEUM SCIENTISTS
AND THE PUBLIC**

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Abstract

Darwin Centre Live is a daily public programme at London's Natural History Museum. Together with trained science communicators, Museum scientists openly discuss their work with Museum visitors and online audiences. The aim is to encourage dialogue between scientists and the public about current science issues and opens up public access to Museum science and the national collections. The programme uses new multimedia technology to broadcast live to the Web and events are archived on the Museum's website. Darwin Centre Live is part of the Natural History Museum's latest development, the Darwin Centre, which houses 22 million zoology specimens and provides working areas for the Museum's zoology scientists.

Key words: scientists, dialogue, webcast

Text

The Darwin Centre

The Darwin Centre is the newest building at London's Natural History Museum. Opened in September 2002, the centre was completed at a cost of over 20 million pounds. Initially it was designed as a collection and research facility to replace the outdated 'Spirit Building', housing 22 million of the Museum's zoology collections and providing laboratory and working areas for the Museum's zoology division. In its final form, the Darwin Centre also features a public floor and a public "offer" consisting of daily behind-the-scenes tours, displays of some of the Museum's historical material, a suite of information touchscreen kiosks through which Museum visitors can find out about Museum's collections and research, and Darwin Centre Live – a public programme featuring the Museum scientists themselves.

The aims of the Darwin Centre's public offer are:-

To provoke a sense of wonder at the scale, diversity and nature of the life science collections

To give visitors an understanding of the cultural and scientific importance of all the collections, including the current and future value in the UK and world-wide

To show that the collections are actively conserved, curated and managed, used and added to.

To show how museum scientists undertake research, using the collections, to investigate specific issues relating to the natural world.

To give insight into the type, scale and relevance of the research projects the Museum is undertaking

Darwin Centre Live

The public programme is a daily series of events in which Museum scientists discuss their work with the public.

Within the broader context of our Public Offer aims, the programme aims are to:-

Showcase Museum science

Provide Museum scientists with opportunities to disseminate their work beyond their peer group.

Demonstrate the daily use and active conservation of Life and Earth Sciences collections and other Museum archived materials

Promote live and on-line communication between scientists and their publics

Embrace themes of temporary relevance

Be intellectually rewarding, stimulating and scientifically credible

Darwin Centre Live is a mixture of daily 30 minutes sessions (12.00 and 14.30) and longer, monthly evening events, developed between a trained Science Communicator and one or more of the Museum's 350 scientists. The Science Communicator hosts each session to ensure clarity of content and facilitate dialogue between scientists and audience members.

All events are recorded and archived on the Museum's website www.nhm.ac.uk/darwincentre/live. Currently 3-5 events per week are webcast live.

Dialogue

The emphasis in Darwin Centre Live is on discussion and dialogue rather than presentation. In order to achieve dialogue, we aim to ensure that:-

Museum scientists and members of the public can have a conversation with one another about science and science issues in which they are interested

Everyone is seen as equal. No one at these events is seen as an expert, rather the participants are seen as a mix of different types of people with different experiences that they can bring to bear on the discussion

All participants feel comfortable with sharing their own experiences, thoughts and opinions

Everyone feels their own contributions to the discussion are as valuable as anyone else's.

Everyone gains something from the experience whether it is new factual knowledge or enlightenment about the thoughts and opinions of others

Are we achieving dialogue?

After running for 18 months, we have found that the evening events are much more successful at achieving dialogue than our day-time events. This is for two main reasons. The first is that the majority of our day-time audiences are made up of 'drop-in' visitors who come into the Darwin Centre as part of their visit to the Natural History Museum. They may not have come specifically to participate in that day's Darwin Centre Live discussion and, while they are content to sit back and listen to the event, they may feel less prepared to participate. Secondly, our 30 minute day-time slots have less capacity for in-depth conversation.

Evening events, in contrast, allow for in-depth discussions with lots of dialogue. Topics for recent events include bio-prospecting, colonising Mars, the future of Antarctica and the possibility of a future apocalypse. Rather than 'drop-in' visitors, our evening audiences consist of directed, purposeful visitors who are coming because they have an interest in the discussion topic. Often people come with friends as a social occasion. We therefore try to retain this informal feel, providing wine and refreshments and generally making visitors feel comfortable in the space and among the audience. This helps engender a lively conversational feel.

Overall

Overall the visitor's experiences of Darwin Centre Live has been positive. In preliminary evaluation studies, 88% of respondents thought that the Darwin Centre offers something different from the Museum's usual exhibitions and 74% felt they had learned something new about the Museum during their visit.

Although the day-time sessions are less successful at creating true dialogue, they are a valuable tool in communicating Museum science and people have responded positively to the opportunity to meet scientists/experts in a conversational setting.

Parallel Session 25: Proposals and initiatives for “public dialogue”

PUBLIC PARTICIPATION IN CLIMATE CHANGE KNOWLEDGE PRODUCTION. AN ASSESSMENT OF COMMUNICATION MODELS

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Abstract

Recently, there have been experiences of public participation in the debate on climate change, despite the “invisibility” and scientific complexity of this environmental problem.

The study of public participation in climate change knowledge production from primary scientific sources provides data to draw and assess a communication model based on public dialogue.

The understanding of climate change knowledge production on which the present paper builds is based on the data collected through interviews to climate change scientists and participant observation during their fieldwork at the Ny-Ålesund International Arctic Environmental Research Station.

The science-society participation mechanisms identified and studied follow a regular pattern concerning its effectiveness in terms of communication. The patterns identified have been used to test a primary model of systemic environmental communication that works as a tool to understand the role of communication, information, and public participation in governance for sustainable development.

Key Words: communication, public participation, climate change

Text

Context

Public environmental behaviour is influenced by many factors (both internal and external to the individual) and especially by cultural infrastructures. The media, the educators, policy-makers or scientists and experts are enrolled in setting the agenda of the environmental debate and they all play a decisive role in determining social behaviour towards sustainability.

Information received by the audience raises awareness but it does not necessarily involve the public in the identification and implementation of a joint solution. Public involvement in environmental problem solving goes beyond perception and awareness and it is a matter of many actors. On their side the media contribute to making environmental problems visible to the public. They contribute to setting the environmental agenda but they cannot be made accountable for social behaviour. Sustainable behaviour is the result of the interaction between the media, the audience, sources of information and the different actors of the problem.

Structured and systematic interaction of the audience with the information they receive and with the sources can influence the contents of this information. Such interaction generates a different knowledge that holds not only the vision of policy makers and scientists (primary producers of knowledge) but also that of the public in their capacity as citizens and consumers. The phenomenon of interaction of the public with information contents, and thus their participation in knowledge construction, has been studied in the field of public understanding of science and technology and especially in the environmental field. Climate change poses an additional challenge given its invisibility and scientific complexity.

Public participation in climate change knowledge production

The understanding of climate change knowledge production on which the present paper builds is based on the data collected through interviews to climate change scientists and participant observation during their fieldwork at the Ny-Ålesund International Arctic Environmental Research Station (July-August 2001, 16 climate change research projects studied, 27 interviews) Content analysis of communication materials published by these researchers has also been used as well as further research and documentation on their subjects of study and the link to communication and public participation.

Examples of direct contributions of the public to the process of knowledge production could be identified where public involvement resulted in better design and better understanding.

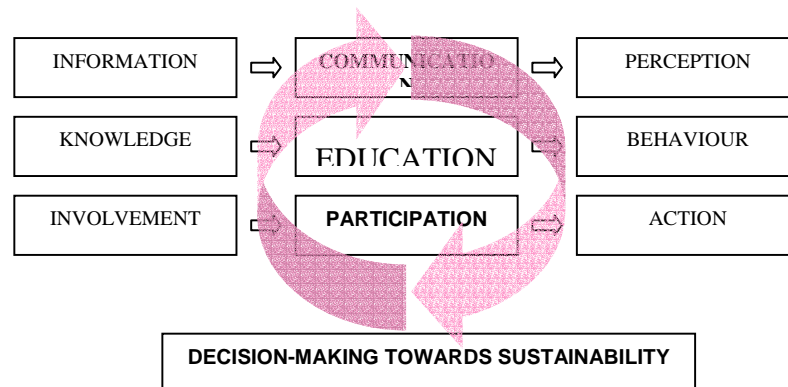
The science-society mechanisms identified and studied follow a regular pattern concerning its effectiveness in terms of communication:

- Social networks share a common understanding of climate change as an environmental problem. This understanding has been facilitated by a common identity and shared knowledge.
- The linkage to science has been built upon the idea of joint construction of climate change knowledge.
- In more mature mechanisms there is a formalisation of the means of co-operation.

- When these mechanisms are functioning they are proved to become powerful communication tools. They can also become governance systems used for policy making.
- These mechanisms define a new kind of communication professional that plays a triple role in communication, education and participation.

Changing communication models: the role of new communication actors

Environmental communication cannot be a lineal process of information transmission from the sources to the audience. Lineal communication limits the real capacity of the public to change their behaviour towards sustainable action. Effective environmental communication for sustainable decision making is an information-action cycle. Information is used not just as a tool to improve quality of what is known, but to serve to the specific objectives of an actor that can take multiple forms (a journalist, an NGO, a company, a scientist, etc). The actor modifies the contents of information to make it useful for his/her final purposes. Information is not merely representing external data. Instead, it is enriching the knowledge of the actor, thus guiding and facilitating action.



This systemic model of environmental communication defines a group of *New Communication Actors* (NCA). NCAs emerge when communication involves action-information. When dealing with another type of information the main actors are, in general, mass media. In this case, information is modified and enriched by the actor through interaction with external data. The final user is not involved in the definition of the contents, or at least not to the extent of being able to decide what contents have to be released. On the contrary, action-information is based on interactivity between supply and demand of information.

NCAs co-operate actively in the process of environmental communication. They can be producers, transmitters and receptors. There is a tacit co-responsibility between NCAs to build together the means by which decision-making is made compatible with sustainable development: the media can be both delivering and retrieving information; society can be both learning from and educating the

experts; scientists are providing knowledge that is built upon the experience of the public. There is an intricate interdependency between NCAs that results in a joint construction of knowledge.

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Parallel Session 25: Proposals and initiatives for "public dialogue".

SOCIAL PARTICIPATION FORUMS DEALING WITH SCIENTIFIC AND ENVIRONMENTAL ISSUES. PROPOSAL OF A FORUM MODEL AND OF A METHOD AND TOOLS OF ANALYSIS. THE CASE OF THE FIRST PUBLIC FORUM OF THE CATALAN ENVIRONMENTAL STRATEGY FOR ENVIRONMENTAL EDUCATION.

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Abstract

Scientific and environmental communication are facing new challenges, which demand participation in order to promote new attitudes for a democratic society. To achieve this goal, new methods and tools are a must. The participation forum, where different experts meet to discuss and contribute to the progress of science, is one of them. However, the participation model used is not enough to guarantee the true participation of society in the environmental sciences arena. This is why this study presents not only a new participation model of forum, but also an evaluation model built upon the same participation principles. The system of analysis presented is based on the ASI-TIE method. The Participation Evaluation Panel is the tool designed to ensure dialogue and participation throughout the evaluation process. From the forum design and implementation, as well as from its analysis and evaluation of the analysis, strengths and weaknesses are determined, which will be taken into account in future forum participation evaluations.

Key words

Participative forum: open participation process in which different people and/or experts meet to make specific proposals on a particular subject.

Evaluation / Participative evaluation: type of evaluation that collects the opinion of all parties involved in the process that is being evaluated and gives them the opportunity to share and discuss their different points of view.

Text

Context

Analysis is made of The First Public Forum on the Catalan Strategy for Environmental Education (ECEA). It is promoted by the Department of the Environment of the Autonomous Government of Catalonia [Generalitat de Catalunya].

The objective of the forum was to decide and prioritise activities to improve on the short- and mid-term education on the environment in Catalonia. A series of informational sessions and working groups were programmed.

Objective

The purpose of the design of the participative forum, and the analysis of it, is to establish a model of participative analysis of forums and to prepare recommendations for future participative forums.

The purpose of the evaluation of the system of analysis is to prepare recommendations for future analyses of participative forums. To do so, evaluation is made of the attainment of certain objectives for the analysis system.

Methods

System of analysis of the forum

The ASI-TIE method, is proposed. It consists of: concretion of what one wants to analyse in Aspects - concretion of the aspects in Sub-aspects / Indicators – choice of the Techniques of analysis of the certain aspects – design of the Tools - determination of the Evaluators.

Intra-method triangulation methodology is performed in this investigation, as well as the application of various techniques and evaluators to analyse some of the aspects.

Quantitative and qualitative tools are combined (questionnaires, recording of observations, analysis cards of documents, audio recording of the conference, a script of the evaluation meeting with the Technical Commission of the ECEA) and participative elements (Participative Evaluation Mural, PEM. See Figure 1).

Application procedure of the PEM

Firstly, the items to be evaluated are read out loud and participants and facilitators put up the four different coloured stickers in accordance with their level of agreement or disagreement with the items proposed. Then, the assessments made are commented on out loud and opinions and proposals are collected by using Post-it notes.

System for evaluating the system of analysis of a participative forum

The OASI-TIE method is applied, which corresponds to the ASI-TIE method. Prior to this, the Objectives of the analysis that will be evaluated are defined.

Collection of data

The analysis tools were applied at various times in the Forum. The analysis of documents was done afterwards.

Results

Data handling

Statistical treatment was performed (Excel) on the quantitative data, and the speeches given by the participants were transcribed.

Conclusions

With regard to carrying out participative forums, the proposals are: in the first place, times of training, discussion and proposals (with the appropriate dynamic tools) should be alternated to achieve total participation. Secondly, those in attendance must feel like protagonists debating and proposing, as the interchange and debates between heterogeneous participants is the most positively valued part. Thirdly, to make the participation and operability compatible is one of the main challenges. Finally, to establish commitments and ensure that the work done has importance even beyond the Forum is fundamental to maintain the confidence and motivation of the participants.

With regard to the system of analysis of participative forums, the proposals are: to incorporate participation as a fundamental aspect; to analyse the operation and the participation of the forum; to be consistent with the process that is analyzed; that the results represent opinions and proposals of the participants; that it is perceived positively; to prepare novel and participative tools that facilitate dialogue and joint reflection and that are engaging and enjoyable; to facilitate the understanding of the results by displaying them in visual form. The system of analysis, the ASI-TIE method and the Participative Evaluation Mural (PEM), in this investigation, are valued positively and are presented as a model of analysis of participative forums.

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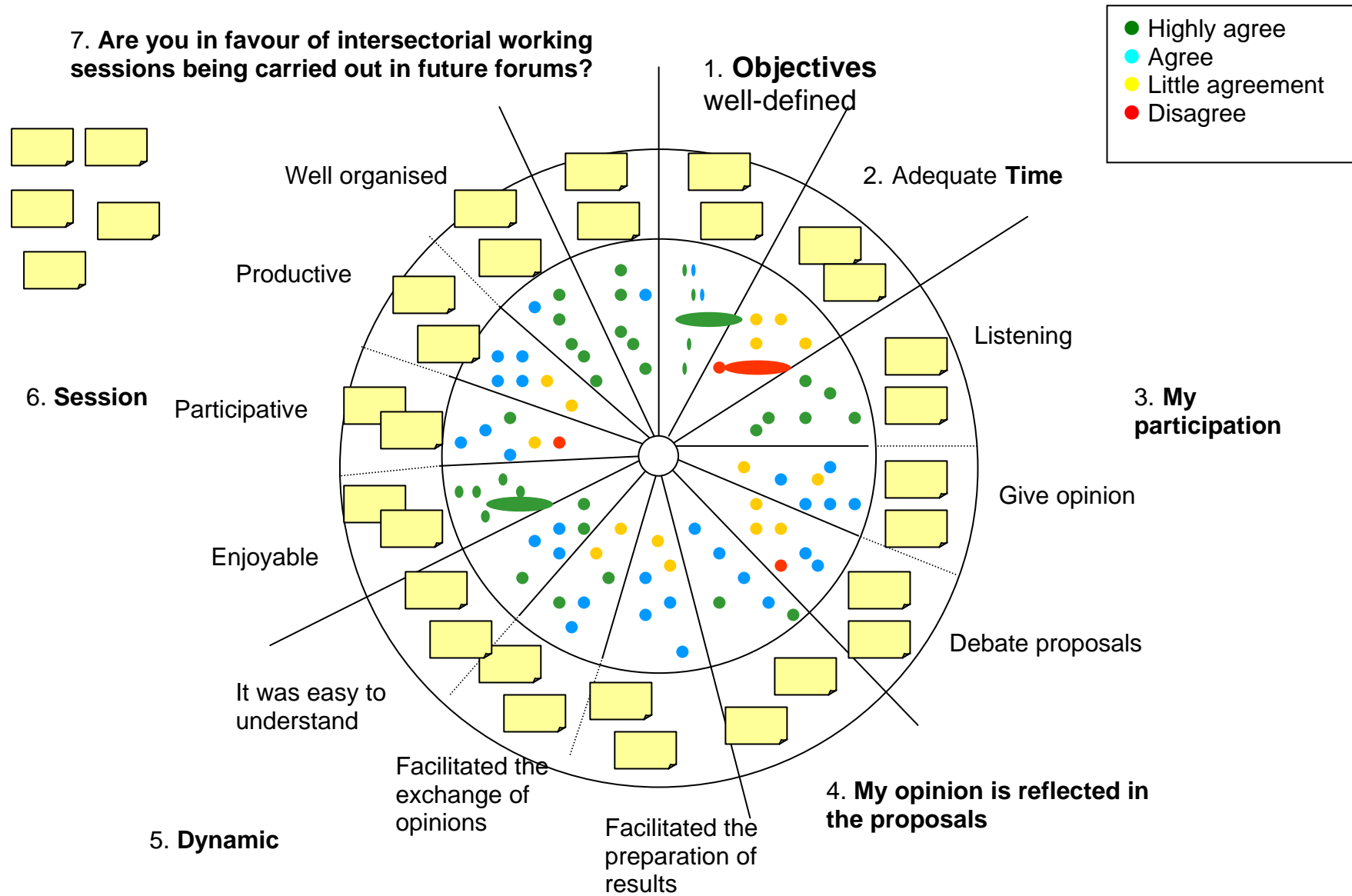
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Figures and tables

Figure 1. Participative Evaluation Mural (PEM) of the intersectorial working session (completed)



Parallel Session 25: Proposals and initiatives for "public dialogue".

DIFFUSE EXHIBITION AS A WAY OF TALKING ABOUT SCIENCE AND ENVIRONMENTAL ISSUES. DESIGN, EVALUATION AND CONCLUSIONS.

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Abstract

Building up a dialogue between municipality agents and citizens regarding issues, which affect us such as science, technology and the environment, requires new tools. This study puts forward an expository model, which works towards reaching this communication through three target objectives: informing, creating new attitudes and promoting dialogue.

The model is shown through an example of a municipality residue plan where the involvement of the community and the exchange of opinions among the participants are pursued. At the same time, the model presents the elaboration and application of an evaluation pattern, specially designed to further analyse its functioning and effectiveness.

Key words

Participative diffuse exhibition: a model for exhibition that tries to educate in knowledge, values and attitudes on a particular subject and, at the same time, collects proposals and opinions from participants. It is called diffuse because it is divided into territories according to the affinities of the territory with the subject of the various panels or parts of the exhibition.

Text

Context

The exhibition that is presented took place in the municipality of Viladecans (Barcelona), in the context of the diffusion of the Municipal Plan for residues.

Objective

General objectives

To advance in the construction of an educational exhibition model on an environmental subject.

To advance in the construction of model for evaluating educational exhibitions on an environmental subject.

Specific objectives

Propose and prepare a specific case of an educational exhibition on an environmental subject applied to a real situation following the model proposed.

Prepare the evaluation of the exhibition mentioned using the evaluation model that is proposed.

Methods

The techniques used in the interactive components are specially designed to make connections among the local community and between the community and the municipality agents. In this way, not only a mere interest in the surrounding area, but also a real collective implication is promoted. The evaluation system is conceived as a way of analysing the exhibition. The exhibition's impact as well as its overall functioning will also be taken into account in order to improve future actions. The evaluation's methodology is based on the application of both qualitative and quantitative techniques such as: recounts, inquiries, guided observations, image analysis and coherent methodological analysis.

Results

The evaluation results provide conclusions about the use and the application of the new model and have rendered possible the detection of its strengths and weaknesses, which will be key to bringing about proposals for improvement.

Conclusions

The exhibition presents two innovating characteristics:

- It is diffuse. Citizens encounter it in their itineraries.
- It contains elements geared towards a type of participation, which stimulates bi-directional communication.

Diffuse exhibitions are not only accessible to citizens, but their use is valued very highly by the local communities, especially due to two elements: on the one hand, due to the interactive aspects they entail, and on the other hand, due to the possibility they give citizens to directly discuss with the municipality agents in charge of the environmental issues in their area.

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Parallel Session 25: Proposals and initiatives for "public dialogue".

SCIENCE AND SOCIETY. TWELVE CLICHÉ QUESTIONS AND FORTY-EIGHT CONTROVERSIAL ANSWERS

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Key words: Science Communication, public participation, Public Understanding, Scientific Literacy

Abstract

At a moment when public participation is a must for the progress of science, we are faced with an open debate about new challenges, which have an impact on scientific communication. Changes, diversity and complexity have put forward new ideas leading to the adoption of different attitudes.

Scientific communication has undergone a transformation caused by the deep changes experienced by society, communication and pedagogy. In this sense, scientific communication has gone from being explanatory, to being active and, finally, to demanding participation.

Communication contains a wide range of contexts due to the fact that the scientific community participating in the different tasks goes from creating scientific knowledge and collaborating in resource management, to being critical analysts or trainers of new scientists. It also entails complexity stemming from its own nature and from the new ways of understanding the world.

The analysis of the present situation has given rise to twelve questions aimed at determining the key factors needed for the progress of scientific communication, as well as at providing the answers to each one of the set questions from different scopes. That is, preserving the level of knowledge acquired avoiding clichés, presenting knowledge in a way which is easy to understand for an audience which does not necessarily belongs to the scientific community, making people eager to get involved in science-building through different activities, favouring apparently contradictory positions and different degrees of confidence regarding the contribution of scientific discoveries to the common good, and putting forward a dialogue conceived as a site for

gathering the social perception requested to achieve the needed feedback to enhance the progress of knowledge.

Context

Nowadays, we find ourselves amidst an open debate on the new challenges to scientific communication that is due, on one hand, to abundance of knowledge and, on the other, to the need for including participation within scientific communication.

In reference to knowledge and research subjects, the increases in interdisciplinarity and the introduction of complexity have made science advance beyond compartmentalised disciplines. It is now possible to interpret, foresee and plan many of the events that occur in our world under a broad perspective. Some of these subjects such as ecosystems, genetics, exploration of the universe and many others are of great interest for society.

With regard to communication, we have reached a point of profound transformation due to the changes that relationships have experienced within society and the contributions of pedagogy and the new ways of communicating in the last few decades. Science's methods for communicating, which were initially expositive and had the objective of informing and making known, have been transformed into active methods that allowed the public to intervene in the acquisition of information and in the building up of its knowledge. There is a new challenge facing us now at the beginning of the twenty-first century: it is that dealing with participation. It requires the scientific community to make new contributions. Once again, it is necessary to renew the methodology for achieving new objectives that have made it possible for citizen's to be involved in the great project of science.

In the new scientific communication, different professionals carry out diverse tasks such as the building up of knowledge, running things, the upholding or critiquing of decisions undertaken, training of new scientists and dissemination of information within society that, with the new challenge of participation, includes the task of collecting citizen's perceptions and contributions.

Conclusions

The analysis of the situation, in this communication, has given rise to twelve questions that focus debate on the points on which we need to advance in scientific communication. The answers given to each one reflect different positions towards the subject: maintain the level of knowledge (thereby avoiding a vulgarisation), expose a more or less ignorant public to intelligible facts, make people favourable to science by using surprises and activities, stay on the sidelines of science since it is an area that pertains to specialists, maintain different positions ranging from absolute confidence all the way to distrust in regard to scientific contributions to the common good or establish a dialogue in which a way of collecting social perception is proposed so as to achieve feedback that facilitates the advance of knowledge.

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THE UK GM DEBATE: HOW TO ENGAGE THE PUBLIC IN SCIENCE POLICY MAKING

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Abstract

In the UK there has just finished an extensive public debate on genetic modification. How effective was this and what can be learned from the process? Are there differences between the responses of the public in the UK to those of the public in other countries that engage in participatory approaches to decision making? This paper will discuss the conclusions that can be drawn from the evidence available, including previous work on the effectiveness of public awareness of science initiatives and consider the future of this form of engagement with the public over issues of science policy.

Key words: Public awareness of science, policy making, science communication, public engagement in science.

Introduction

GM Nation? is the most concerted effort to take the debate to the public in the UK. Following public protests and unease with this form of scientific research and technology, this was perhaps, in part, an attempt by politicians to wrest back some form of control over proceedings. Whatever the sub-text there was a clear intention that this should be seen to be independent and open.

‘Margaret Beckett has said that the government wants a genuinely open and balanced discussion on GM.’ (1)

‘GM Nation? The Public Debate’ is a programme of public deliberation with the issues for debate framed by the public. The debate is being conducted at arm’s length from Government by an independent steering board. (2)

Overview of the process

The GM Nation? public debate was one of three information gathering strands. The Government also commissioned two reviews: an economic review, and a scientific review. In addition, the Farm-Scale Evaluations (FSEs) were expected to report during the debate.

GM Nation? began with the Foundation Discussion Workshops designed to help formulate the framework for the main debate. The public debate then

lasted 6 weeks. It consisted of three tiers of meeting where participants were self-selecting. There was also a separate ‘narrow-but-deep’ study with invited participants.

Soon after the events were announced it was realised that neither the report of the FSEs, nor the reports on the scientific and economic evaluations would be ready to inform the debate. One very curious remark is made in the Public Debate Steering Board’s (PDSB’s) report about this timing of the FSE’s report.

‘...we did not think the public should be made to wait for one more piece of evidence whose significance could not be foretold.’ p.15, (3)

Discussion

From the documentation, several reasons emerge for the perceived failure of the GM Nation? public debate.

Timing

It is widely recognised that due the debate could not be informed by the reports of the science and economic reviews and the FSE results.(4) but no allowance is made for this.

Duration

The UK debate itself lasted 6 weeks (5), compared to over a year for the New Zealand debate (6).

Budget

COI were responsible for recommending the original budget of £250,000 later described by the EFRAC as ‘paltry’ (4).

COI

In both the Defra (7) and GeneWatch (5) reports it is clear that there were tensions between the PDSB and COI. Whilst there were pragmatic reasons for selecting COI, their lack of experience and inflexibility was certainly a significant factor in the failings of the debate.

Make-up of meetings

Every report comments on the apparent imbalance of participants at meetings.

Government not committing to outcomes

The final report noted that many of those who took part believed a decision had already been taken and that this was merely an empty PR exercise. They felt the Government would ignore whatever the findings of the debate.

High levels of suspicion and mistrust

It was also noted in the final report that many were suspicious and mistrusting of the Government — BSE had raised doubts in minds that the decisions finally made would really represent the public's interest over that of producers. Many also felt that the Government had already ignored the will of the people in its action over Iraq. (3) p.43.

The Government claims the tight timeframe was due to the external constraints set down by the EU, which also determines much of the legal framework. Therefore, the UK Government is not at liberty to offer an open commitment to adopting the recommendations of the public debate (4).

Closing comments

There are positive aspects to the debate and such an activity would not pass without criticism. However, as one reflects on GM Nation? it seems only likely to increase general levels of cynicism and mistrust. Taverne in a very recent article holds up the public discussion over stem cell research as an example of an effective consultation. He describes the atmosphere as non-adversarial and notes there was no hijacking of the process by green organisations (8).

There appears to have been no attempt to learn from the experiences of public engagement in other countries.

Perhaps debates should be managed at the European level and built into the overall decision and law making processes, with a commitment to act on the outcomes as stated by the people.

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