Conceptual Developments in Science Communication

Two cultures - an uneasy alliance between science education and communication
Why two cultures of science?

- Worlds of formal science education, from a UK perspective, and the 'discipline' of science communication.
- Contrasting styles, professional cultures, social practices, underlying assumption, dealing with different forms of science.
- Contrast between adult and pupil experience of science leads to disjunction and conflict - a public science 'crisis'.
Uncomfortable differences

- Formal science learning is still the world of undisputed ‘hard and fast’ facts, with a nod towards historical accounts and a description of ‘the scientific method’.
- The communication of science to adults involves unsettling, fast-moving and uncertain science, evoking feelings and argumentation.
- Adults therefore aren’t equipped with a set of skills or views that allow an easy transition from one science culture to another.
From deficit to dialogue

- In the UK, feeling that the old ways have changed; the deficit model is (seemingly) dead and buried.
- In its place we have a new emphasis on engagement with the public - on new forms of dialogue.
- In the past this has meant consultative panels, stakeholder dialogues, internet forums, citizen juries, etc.
What type of science curriculum might be needed to support dialogue?

- One that is rich in argumentation, an appreciation of ‘being in somebody else’s shoes’ via role play, an awareness of the diversity and uncertainty of science how science is mediated by print, TV - e.g. news values the rules by which the scientific community functions, e.g. peer review.

- In other words ‘problematic’ science.
Pockets of educational radicalism

- Interest in science curricula more geared to the notion of scientific literacy.
- Beyond 2000, science education for the future... choosing significant explanatory stories, some through historical case studies, with a general overview, not the details.
- Plus some key 'ideas about science', about uncertainty, relationship between theory and observation, what models do.
But what problems remain?

- A fast moving body of knowledge - e.g. with current debates on GM technology.
- Problems of describing the genuine nature of science - uncertainty, yet not discredit science’s capacity to explain.
- The problem of curriculum overload.
- What about education for participation?
- Science’s place within citizenship?
One road for two cultures

- Official emphasis (e.g. House of Lords report on Science and Society) that...

Science in schools must equip all students with ‘science for citizenship’ ......but it must also maintain its traditional and vital focus on preparing the most interested pupils for science courses at university.

- But strong arguments from science educationalists for separation of these streams.
What would science communicators ask for?

- Knowledge of the institutional structures of science, science policy.
- Awareness of news values and mediation.
- Biological emphasis, e.g. health issues.
- Team working skills, i.e. learners speaking together.
- Critical appraisal, discussion argument.
- Influence of non-scientific aspects.
- Value and limitations of 'lay perspectives'.