


MICHAEL LITTLEDYKE PROMOTES THE USE OF
DRAMA FOR MEANINGFUL LEARNING IN SCIENCE

Drama and Science



The essential purpose of primary science should be to help children make meaningful sense of the world around them. This will enable them to develop into scientifically literate adults who have a critical understanding of the ideas of science, but who also have respect, care and sensitivity for the world they live in and their impact on it. If that goal is held central to teaching, then motivation, enjoyment and a sense of fun in learning become integral to planning, as meaningful learning only occurs when children engage fully in the process. Drama is an excellent medium for harnessing these features of learning, because it can simulate real-life experience and address issues in a way that may not be possible with other approaches to learning.

The demise of drama in the curriculum

Before the introduction of the National Curriculum in England and Wales, drama had equivalent

status to art and music in most initial teacher education courses and was, as a result, more prevalent in classrooms. Unfortunately, it has since become a relatively minor presence because it was not given foundation subject status in the National Curriculum along with art and music, and was relegated to a subset of English. Reasons for this were put forward by Somers when discussing the 80s political debate concerning the content of the National Curriculum:

Drama was characterised by the Right as a creature of the 'progressive sixties', child-centred and without a body of knowledge to be transmitted. A subject which was responsive to students' concerns, which aimed to provide a forum for some of the most important issues of our time, but which had no concern with the world of work. (Somers, 1994, p. 3)

As a result the use of drama as a

learning medium in schools has significantly diminished since the introduction of the National Curriculum, although there has been more recent recognition of its potential and growing interest in using it to enhance learning.

The value of drama in science

Drama can be a very powerful teaching strategy for enhancing meaningful learning in science.

Active, participatory learning that draws directly on children's resources as social beings is central to drama. This provides strong motivation for learning and is particularly useful to help develop skills in communication and collaboration and in expressing ideas, values and opinions.

Many of the ideas presented here are most appropriate for key stage 2 (ages 7-11), but there is also rich opportunity for

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development of key stage 1 (ages 5–7) and foundation stage (ages 4–5) drama and science through role-play in topics such as materials in the home or building site, health and the dentist or doctor, and so on. Many books and stories lend themselves to dramatisation to develop scientific ideas. For example, ideas about forces can be developed through dramatisation of *Mr Gumpy's Outing* or nursery rhymes such as *Jack and Jill* and *The Grand Old Duke of York*. Whole environments, such as the sea, a coalmine or stone age cave, can also be simulated in the classroom to provide a medium for dramatising and learning about science.

Although drama can take many forms, two are particularly relevant to providing a focus for reporting science: scientific models involving pupils; and real-life simulations that provide a medium for presenting scientific ideas and their social implications.

Scientific models through drama

Drama can be used to model scientific ideas under the teacher's instruction or children can be challenged to create their own dramatised models to demonstrate their understanding. It is likely that this will involve some form of mime, but an accompanying narrative by the children explaining what the model represents enables them to show just how well they understand it. Examples of such models could include:

■ Food chains or webs.

Children take on 'roles' (with picture labels attached to them) of producers and consumers in an ecosystem (for example pond, grassland, woodland or garden) and link up with string to show the relationships.

■ **Minibeasts.** Groups of children make human models of various minibeasts to demonstrate how they move

and other features they have found out about, for example feeding, life cycle.

■ **Pollination.** Children dress up as bees and flowers showing the flower parts (or attach pictures to themselves) and transfer pollen (for example Velcro-covered ball) via the bee to another flower. A fruit carton with straw can represent nectar.

■ **Digestion.** Groups of children take on roles of different parts of the digestive system to show what happens to food as it passes through.

■ **Forces.** Children illustrate actively pushes, pulls, balanced and unbalanced forces, and the effects of gravity and friction. They can do this through their own bodies through PE-type activity or by simulating other activities, such as driving a car, ice-skating or parachuting, to illustrate particular concepts.

There is scope for any scientific model to be represented in a creative way using children themselves. Imagination is all that is required to generate some creative and interesting approaches to learning that children will find highly memorable.

Real-life simulations

Real-life simulations can provide a context for the presentation and application of scientific ideas, as well as discussion about attitudes and values where this is relevant. Contexts based on communication provide an opportunity to present ideas in as clear a way as possible, for example:

■ **Role of the expert.** Explain to an audience that knows very little about the concepts, for example: younger children, people with little English, or aliens with no knowledge of life on Earth. Children take on roles as presenters and/or audience.

This could also be done through interview format with the expert answering questions from the audience.

■ **TV or radio documentary programme.** Present the concepts in as clear and as interesting a way as possible. This could be video or audio-recorded and involves the construction of the structure of the programme, as well as the content.

■ **Magazine or newspaper.** Children take the roles of editorial team members or journalists to present a written account based on simulated

interviews and journalistic reports. The end-products are reports that can be collated into a magazine or newspaper that can be displayed or distributed (around the

school, to parents, governors, etc.).

Contentious issues, for which scientific understanding is needed to reach decisions, involve persuasion through clear presentation of the ideas and exploration of different points of view. Contexts for exploring such issues could include:

■ **Petition.** Children in pairs take turns to try to persuade someone to sign a petition about an issue.

■ **Public meeting or TV discussion show.** Children take on roles of panellists presenting different points of view and members of an audience who ask questions. An empty chair can represent a panellist with several children answering questions on behalf of the 'panellist' to remove undue pressure on individual children.

■ **Governmental meeting.** Children in roles as members of a governing body (for example local council or national

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government, depending on the issues), with decisions taken by vote.

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■ **Law court.**

Where issues are presented by 'barristers' and decisions made by a 'jury' and 'judge'.

Examples of issues and associated drama contexts that can be addressed using the above strategies could include children

being in role as members of a local community who are faced with:

■ **Waste disposal problems.**

Through illegal dumping in the area.

■ **Pollution.** Through a proposed factory that has a

history of polluting the local environment.

■ **Threats to endangered species.** For example, species in a pond or woodland being threatened by a local development building plan.

■ **Public health issues.** Court action against a tobacco or fast-food company, which has been charged with damaging people's health.

In each case there is opportunity for taking on various roles to explore and present the issues so that a decision can be reached. The teacher can also take on roles in the drama to challenge, extend and facilitate the children's learning during the process. This is an exciting way to work with children and can provide some of the most memorable and significant experiences of a child's time at school. It will also facilitate meaningful learning, which is the primary goal of science teaching.

See Littleddyke (1998) for details of how to instigate and manage approaches to learning through drama, and Littleddyke, Ross and Lakin (2000) for examples of suitable approaches to science and environmental education.

References

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It isn't difficult to get your words into print. You can help by following a few simple guidelines:

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■ **Use straightforward language and an economical style, avoiding jargon.**

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