



Pulse and the performing arts

Powerful performance

The energy and colour of the performing arts are being harnessed to engage young people in biomedical science.

The performing arts can offer new perspectives on science and its impact on our lives. They can demonstrate biological processes through movement and dance, use visual metaphors to convey concepts, and dramatize social implications of science in highly charged human contexts.

The Wellcome Trust launched Pulse to exploit the possibilities of dance and drama in engaging young people in biomedical science. The initiative encouraged youth theatre and dance companies and other organizations that work with young people to use the rich source of inspiration offered by biomedical science and its wider social and ethical implications as material for new performance arts projects.

The projects funded – which received between £3000 and £25 000 – embrace a huge spectrum of scientific themes, including the bioscience of light, neuroscience, cloning, eugenics, the polio epidemics of the 1940s and 1950s, ageing, vaccination programmes, and the harvesting of African cherry from the African mountain forests. This article

looks at three Pulse projects with a striking diversity of scientific content and artistic and educational approaches.

Rice in a trice

“To give people some idea of the size of the universe, the Victorians used to say there are as many stars in the sky as there are grains of sand on the beach. This device helps give a perspective on numbers that are too big to comprehend,” says James Yarker, Artistic Director of Stan’s Cafe theatre company (“As in caff, not café,” he cautions).

Stan’s Cafe aim to use a similar technique to the Victorians – with rice instead of grains of sand – to encourage

Key Stage 3 students (11–13 year olds) to explore the history of epidemics and the impact of vaccination programmes. The installation, Plague Nation, will be performed on open days in the school hall. Students will measure out piles of rice, representing different groups of people – each grain denoting one individual – to create a shifting landscape of rice hills throughout the day.

“One pile may represent the number of people in the world with TB 100 years ago, and another the number with TB now, so that you can see what vaccinations have achieved – and how much there still is to do. Or one pile could be the number of people in the world with HIV, and the



Above: ‘What became of the witch?’, Theatre and Beyond’s Pulse project, explores society’s obsession with youth.

Below: Rice is the main ingredient of Stan’s Cafe’s project, ‘Plague Nation’.

Ed Dimsdale

Above right: The Hampshire Youth Dance Company’s project expresses their response to brain cell communication through dance.

Below right: Double Vision’s project is a dance piece called ‘Left’, which explores handedness.

pile next to it could be the population of London – so you imagine all of London being wiped out by HIV. It gives you some sense of the scale and impact of epidemics. The juxtaposition of the powerful and moving alongside the less serious – for example the number of people who died of smallpox in 1800, 1900, 2000, the population of their town, and the capacity of their football stadium – will create a compelling piece of art with integrity and resonance.”

Students will be able to decide what statistics to include, research the figures using the school library and internet, and calculate how much rice to use. “They’ll count out how many grains of rice there are in a gramme, then measure the piles in weight, rather than counting out individual grains of rice. That gives the students a tangible reason for doing algebra. They’ll also learn about the biology of vaccination and the historical impact of vaccination programmes, which will help them understand biology in a real-world context.”

Dance on the brain

Young people in the Hampshire Youth Dance Company will be exploring the complexities of the brain through dance and images. The project will be kickstarted by a series of highly visual workshops by Dr Matt Cuttle from the University of Southampton Neuroscience Group, to introduce young dancers to the basic scientific principles of brain cell communication. “Students will look at the cellular mechanisms involved in learning and memory, and those underlying neurological disorders such as epilepsy, stroke and autism,” explains Leanne Webb, Education and Youth Dance Coordinator for Hampshire Dance.

The workshops will be supplemented by a visit to the School of Biological Sciences’ microscope facility, where students will experiment with high-tech microscopes to produce images in the same way that researchers visualize brain cells. Students will be encouraged to respond artistically to the neuroscience by creating drawings and paintings representing brain cells, neural networks, or aspects of brain function. They will also work with a professional digital artist to create 3D images of objects they associate with memories, and with professional choreographer Lizzie Swinford to express their response through dance.

A performance of the work will take place during Brain Awareness Week in March 2004, and then sections of the

work will be performed in local shopping centres and other venues.

The project will raise young people’s awareness about the importance of biomedical research in the fight against neurological disorders. Learning about how the brain learns and remembers things will also teach students how to use their memories effectively, thus impacting on all aspects of their education.

Enlightened

The bioscience of light is the theme of a play to be developed and performed by members of the Youth Theatre at The Theatre in Chipping Norton. “Light touches our lives in so many ways,” says Caroline Sharman, Director of The Theatre. “The light-switch has given us a 24-hour society celebrating the dark. We can have laser surgery, and solar energy. We crave light and become depressed and ill without it. It plays a central role in many religions, which assert that the world was created when light was separated from darkness. But the light we crave can also destroy us: skin cancer rates are rising, global warming is leading to devastating floods and laser weapons are being developed.”

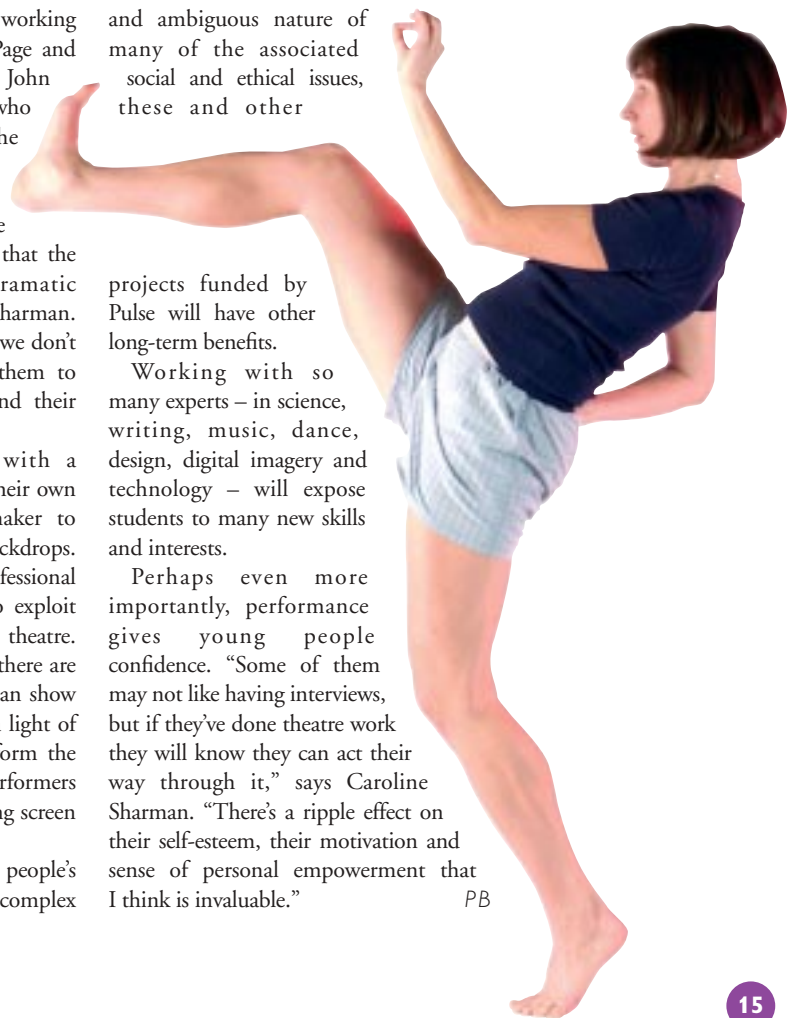
Members of the Youth Theatre will explore these and many other contradictory aspects of light, working closely with playwright Louise Page and her father, Emeritus Professor John Page, a specialist in solar energy, who will explain and advise on the science. “We want to create a proper piece of drama. Enlightened will be a complete play with a proper storyline, so that the students will learn about dramatic structure,” explains Caroline Sharman. “We also went to make sure that we don’t spoon-feed students. We want them to explore the issues themselves, and their ideas will feed into the script.”

Students will also work with a professional composer to create their own electronic music, and a filmmaker to create films or videos to use as backdrops. They will also work with professional theatre and lighting designers to exploit the technical possibilities of the theatre. “Light is vital to the theatre and there are so many different ways that we can show that. We might use the effects on light of crystal, glass and water to transform the space, for example, or dress the performers in white and use them as a moving screen to project images on.”

As well as deepening young people’s appreciation of science and the complex



and ambiguous nature of many of the associated social and ethical issues, these and other



projects funded by Pulse will have other long-term benefits.

Working with so many experts – in science, writing, music, dance, design, digital imagery and technology – will expose students to many new skills and interests.

Perhaps even more importantly, performance gives young people confidence. “Some of them may not like having interviews, but if they’ve done theatre work they will know they can act their way through it,” says Caroline Sharman. “There’s a ripple effect on their self-esteem, their motivation and sense of personal empowerment that I think is invaluable.”

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