

Filling black holes

Ken Okona-Mensah examines our lack of black scientists

In April this year, the young black urban musician Ms Dynamite signed a £1m deal with Pepsi to encourage kids from tough backgrounds to break into the music business and become stars of the future.

Last year, during an interview with The Observer, the Mercury Music Award prize-winner was asked about role models, and replied: 'I would have liked to have chosen someone who was important as a scientist. I think that's very important. You don't get to see many black scientists, especially in this day and age.'

Despite turning down the chance to study a BSc in social anthropology, Ms Dynamite stressed the importance of encouraging black kids. 'When I was at school we did only one week of black history', she said. 'I was never told black people contributed anything important to Earth. This gives you a sense of inferiority. I think lots of black kids would want to be scientists but they never get examples of someone who has done it before.'

According to a report from the UK Commons Science & Technology Committee, all children (irrespective of their ethnic origin) have switched off from science. But this is particularly evident with African-Caribbean pupils. Science has a 'black hole' which we urgently need to fill.

Few black SET students

The African-Caribbean Network for Science & Technology (ACNST) is a UK educational charity set up to advance the educational achievements and career aspirations of black youth in science, engineering and technology (SET). Work conducted by its director, Dr Liz Rasekoala, found that, of all African-Caribbean students studying at UK universities, only 3 per cent are doing SET. This compares with 98 per cent of Chinese students and 75 per cent of students of South Asian origin.

Coupled with the highest level of graduate unemployment (with Chinese students

exhibiting the lowest), it is apparent that there is a direct correlation with having a scientific background and being employable. 'They are coming out in droves with qualifications in the arts and humanities for which there are no jobs', exclaims Rasekoala. 'With science and numeric skills, the City of London wants you, Proctor & Gamble wants you and Hewlett Packard wants you. They have got degrees that the market doesn't want!'

School failures

So why are black pupils not achieving in science and engineering? A 1996 Ofsted report² found that the achievement gap between 16 year-old white pupils and their African-Caribbean classmates had doubled since the late 1980s. It argued that teachers underrate the abilities of black youngsters. The issue was recently explored in a Channel Four documentary series entitled 'Second Chance'.

According to series creator Trevor Phillips (OBE), chairman of the Commission for Racial Equality (CRE), black boys especially are being failed by schools. 'They would come into school at five with reading scores perhaps 20 per cent above average and leave at 16 21 points below average', says Phillips in an interview excerpted from the forthcoming book 'Black Success Stories'. 'So school is doing something with these children.'

Cultural factors

Dr Rasekoala thinks there are three factors which explain why black children achieve less than other ethnic minority groups. Asian children, she finds, have a strong sense of cultural cohesion, which provides a positive alternative and empowering reference point. Indeed Phillips, who studied biochemistry at Imperial College, believes he was saved from an almost bleak future simply by being sent to the Caribbean as a teenager. This provided him with an alternative reference point where he had no sense of inferiority because he was black, and allowed him to challenge the limited images of what a black person can be in mainstream society. 'Mainstream seems to want it both ways', explains Rasekoala. 'They criticise the Asians for not integrating and assimilating, and yet the black community who have done all those things have no benefits.'

The second factor is what Rasekoala terms a loss of cultural integrity, which means that the meaning of success has different cultural implications. A successful Asian is still regarded as a member of the community; a successful black person is seen as being outside the community or a 'sellout'. This mindset has developed particularly amongst black boys, and means the price of success is too high.

The third factor relates to questioning one's place in society. 'Asian kids have a strong sense of, "I'm here, I can build myself up and be successful and move on to India or Pakistan"', explains Rasekoala, 'but black kids don't think they can move on and so given the present situation ask themselves: "Is that it? Why bother?"'

'Racism impacts on all children equally', says Dr Rasekoala, 'just as on a rainy day the rain falls on all of us equally. But it makes a difference if I have those great big golf umbrellas, a raincoat and a pair of wellington boots and you don't. So Asian children have that golf broly, they've got that raincoat and wellington boots, but most of our kids don't. Of course Asians experience the same extent of racism as black people, but they have the cultural cohesion, cultural integrity and the sense of what success buys in society as a stepping stone to moving on.'

Parents

According to Tony Sewell, an educational consultant, peer group pressure and the fact that 'black parents do not value education enough' are bigger threats. This Rasekoala feels is completely wrong because it blames the victim: 'I don't think there is any African-Caribbean parent who wants any less for their child,' she says. 'You can never aspire to what you have never seen and you can never take someone to where you have never been!' This she feels explains why the success of middleclass children seems automatic because those two imperatives are in place. 'For black and working class children there is no automaticity to success,' she says. 'What we should be talking about is how we provide those tools to enable those parents to take their children to where they have never been.'

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Ms Dynamite

@ a glance...

Very few African-Caribbean university students, compared with other ethnic minority students, study science, engineering and technology

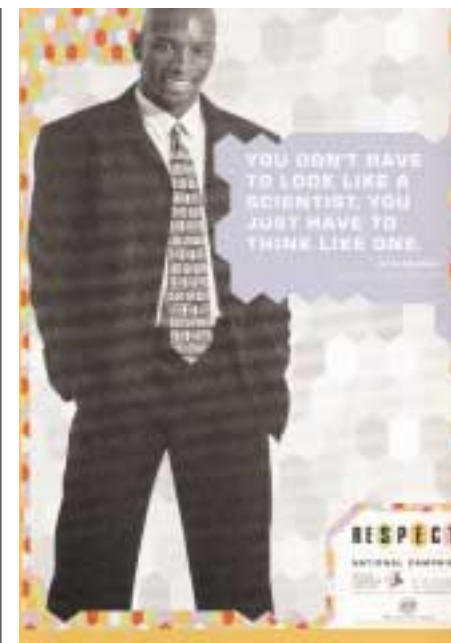
Some argue that teachers underrate the abilities of black youngsters

African-Caribbean students may be discouraged because, relative to Asian students, they lack cultural cohesion, cultural integrity and the sense of what success buys in society as a stepping stone to moving on

It is hard for African-Caribbean parents to enable their children to aspire to what they themselves have not seen

Measures taken to help women in science should be applied to African-Caribbean children

In November, a high-profile national campaign will begin to raise awareness of these issues



Posters for the Respect national campaign: Ken George, Science Teacher and Joyce Trail, Dental Surgeon African Caribbean Network for Science & Technology



Gender model

In May 2003, nine women out of 42 scientists became Fellows of the Royal Society. This new record underscored a government initiative to reflect the number of female scientists in senior academic posts. Today, more girls than ever before are opting to continue studying science at higher levels as a direct result of strategic policies set up 10-15 years ago to address the low numbers of women entering the science and engineering fields.

Parallels have always existed between gender and race, given the issues of under-representation, the lack of role models, public expectations and negative stereotyping are pertinent to both. 'As a black woman engineer I don't know when I am

suffering racism or when I am suffering sexism!' exclaims Rasekoala. 'If they have done all these things on gender then why not on race, as the patterns are the same?'

One of the first ways of addressing the gender issue was to make gender monitoring mandatory. This enabled educationalists to quantify the extent of the problem and devise serious policies and strategies to address it. After much struggle and campaigning by the CRE, this year the government finally agreed to make ethnic monitoring of exam results compulsory.

In November, the House of Commons will host the launch of a high-profile national campaign spearheaded by Dr Rasekoala to raise awareness of these issues. Prime Minister Tony Blair, Treasurer Paul Boateng, and the Secretary of State for Education Charles Clarke will be present. It is hoped Ms Dynamite will also participate, to help it reach and appeal to more young people and lay the foundations for a new generation of prominent black scientists.

Links

- 1 African Caribbean Network for Science & Technology – <http://www.ishangohouse.com/index.htm>
- 2 Osted 1996 Report: Educational Inequality: Mapping Race, Class and Gender – <http://www.ofsted.gov.uk/publications/docs/447.pdf>
- 3 Festival of Science & Culture 2003 – <http://www.festivalofscienceandculture.co.uk/>

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Black holes are objects in the universe with so much mass trapped inside their boundaries that they have incredibly strong gravitational fields. In fact, the gravitational force of a black hole is so strong that nothing can escape once it has gone inside. Not even light can escape a black hole, it is trapped inside along with stars, gas, and dust. Most black holes contain many times the mass of our Sun and the heaviest ones can have millions of solar masses. This rustic knotty alder entry door is brought to life with black epoxy filling apply to the cracks and knots. Here's how to do it yourself. When you're building a project out of a Probably other substances, too. For this demonstration, we're working with clear two-part liquid epoxy, which is easy enough to buy at your nearest hardware store. And the sample boards you see in these pictures are knotty alder. But, as stated above, the process works just fine in other woods with knots or splits. Black holes are generally defined as "a place in space where gravity pulls so much that even light cannot get out. The gravity is so strong because [the] matter has been squeezed into a tiny space." - NASA. Black holes can, however, be 'seen' with some special analysis of data collected from a wide range of telescopes (more on this later). Source: Kristof Wesely/Wikimedia Commons. How are black holes made and what different kinds of them are there? How black holes' form depends on their type and origin.