



An African GIFT Experience

This year the EGU embarked on a new journey into Africa to deliver its renowned [Geosciences Information for Teachers \(GIFT\)](#) programme to teachers in South Africa and neighbouring countries in collaboration with UNESCO and the European Space Agency (ESA). The topic: [Climate Change and Human Adaptation](#). Representatives of the organising team report on the activities...

Set in 'the windy city' of Port Elizabeth (or PE if you're local), in stunning 28°C sun, complimentary blue skies and a dash of wind, we made our way to the Nelson Mandela Metropolitan University's (NMMU) Missionvale Campus to begin the proceedings. The Missionvale Campus is situated just outside Port Elizabeth, in the heart of surrounding communities. The campus is intricately connected to these communities, with a commitment to supporting the development of those local to Port Elizabeth through school education and lifelong learning – making it the ideal location for the workshop.

We were welcomed by Thoko Mayekiso, the Deputy Vice-Chancellor for Research and Engagement at NMMU, followed by a short introduction given by the co-organisers Sarah Gaines from UNESCO and Carlo Laj from the EGU, and from our host Mactar Doucouré (from NMMU's Africa Earth Observation Network – Earth Stewardship Science Research Institute, better known as AEON-ESSRI).

To open the workshop, we had Maarten de Wit (from AEON-ESSRI) discuss the importance of geology in understanding climate change. De Wit put geology and climate change into a South African, and broader African, political and social context. He focused on the African concept of 'observing the present and considering the past to ponder the future' – a notion that is summed up in the isiXhosa word *lphakade*. De Wit introduced *lphakade* in the context of Earth stewardship: scientifically informed, ethical and democratic management of both the physical and living systems of our planet. The Earth is a system, but so is our society. Because our society is reliant on the Earth, it has a responsibility to manage it. Therefore, we need to apply our appreciation of our culture and how it will change in the next 50 years to our understanding of how to manage the Earth system.

Echoing the need for systems thinking in managing climate change, Rob O'Donoghue spoke about the South African school curriculum on climate change. O'Donoghue highlighted the need for systems thinking to be integrated as a learning enhancement tool. He also echoed the usefulness of the past in learning about the present, not only in a geological context, but in a social one. Africans have lived through climate variability in the past and have met these challenges with innovative solutions in agriculture, animal husbandry, cooking, sanitation and more. Both applied their perspectives on the importance of understanding the socio-cultural aspects of climate change to teaching. They emphasised the need to help relate climate change to children, and stop it seeming scary and



Participants and organisers outside NMMU's Missionvale Campus. (Credit: Jane Robb)



Sally Dengg, an EGU Committee on Education member, explains an experiment about thermohaline circulation to the teachers. For some of the practicals, the organisers had to improvise with materials commonly available to teachers – instead of test tubes, they used plastic bottles. (Credit: Jane Robb)

impossible to manage. By using stories, art, music and other culturally informed methods we can make understanding and responding to climate change more manageable for future generations.

During lunch (with amazing live local music providing the background to our delicious South African cuisine) we discussed what the teachers thought of the workshop so far. What concerned the teachers most was the need to make climate change accessible to their children without forcing an impossible change on them. In many African countries, including South Africa, people are aware that their daily practices are harming the environment. However, unlike developed countries, these practices are essential to survival on a daily basis. The teachers simplified the issue: environment is directly linked to survival in this part of the world. These people do not have the luxury to change their daily practices. If anything,



The World Challenge Game in action. 'Families' had to colour in sheets to make money for their countries within a time limit. (Credit: Jane Robb)

this highlighted the need for workshops like this, which help teachers find different ways to engage the next generation with climate change in a way that means they can continue to develop.

Carl Palmer from the South African based Applied Centre for Climate and Earth System Science reiterated this point in his talk on how climate change affects us. He highlighted the fact that poor communities cannot deal with climate change in the way developed countries can. And yet, Africa is a large continent, rich in unique landscapes and biodiversity, with an incredible diversity of people too. As Guy Midgely from the South African Biodiversity Institute also discussed, Africa contains a wealth of natural resources as well as a wealth of variable climates and people. Palmer emphasised the need to excite and inspire our children about what Africa has to offer, encouraging them to choose science. Not just geoscience however: we need them to address the issues of sanitation, malnutrition, health and politics in tandem with climate to make a real difference. In other words, rather than a threat, climate change is an opportunity to engage kids with science.

To compliment these insightful approaches to climate change education, the workshop integrated several presentations on the science behind climate change and areas where climate change impacts are being felt, including agriculture (Bernard Seguin), water (Roland Schulze), ocean changes (Jean-Pierre Gattuso), as well as remote sensing of the atmosphere (Michael Verstraete). These presentations opened up the discussion for how to teach children specifically about the scientific aspects of climate change: what happens to these different Earth systems in a changing climate, and how can we transfer this knowledge to children in the classroom? For the teachers, although there was a lot of information packed into a tight curriculum, this was incredibly valuable as it catered directly to the GIFT workshop mantra: reducing the time from research to textbook. These presentations gave teachers the opportunity to hear about the science directly from the scientists.

In addition to these presentations (now [available online](#)), we were also treated to demonstrations and practical exercises by Ian McKay, from the University of the Witwatersrand and the International Geoscience Education Organisation, Sally Dengg from GEO-MAR Helmholtz Centre for Ocean Research and Carl Palmer. We experienced interactive discussions, marshmallows and chemical structures, solar cookers, production of carbon dioxide, acidifying oceans and exploding hydrogen balloons. To finish up the workshop, we watched the film *Thin Ice* and ended with a critical discussion on how the teachers will disseminate what they have learnt to their colleagues, students, communities and councils.

What we were able to take away from the workshop was the need for a paradigm shift in the way we think and educate about climate change in an African context, where the participants helped us understand how to make the global local. Climate change isn't just a scientific issue: it is implicitly related to people, politics and survival. To engage children with climate change science, we need to develop a systems thinking approach, balancing global responsibilities while maintaining healthy lifestyles and valuing the cultures and perspectives of the very people we are trying to engage.

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An earlier version of this article was [published on the EGU blog](#)

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Check out the new website of the EGU
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New educational activities at the EGU

In the past few months, the EGU worked particularly hard on its educational activities. The Committee on Education organised no less than three GIFT workshops and, with the help of Jane Robb, who took part in EGU's Educational Fellowship, the Union has expanded its education portfolio. Here Robb shares these new and exciting EGU educational initiatives.

Planet Press

If you like engaging children with science through up-to-date news then this is the place for you! Inspired by [UNAWA's Space Scoop](#) stories for kids, the EGU have developed [Planet Press](#) – engaging geoscience news stories for kids. Aimed primarily at 7–11 year olds, these are EGU press releases 'translated' into kids' language, but they can also be useful if you want more digestible geoscience news. Each Planet Press is written in-house and reviewed by one of the Union's scientist members, as well as an educator to ensure their science content is accurate and the writing is appropriate for the target age group. In addition, fun printable versions have been made for classroom use. So far, all Planet Presses are in English but, in the future, we hope to make them available in other European languages.

Teacher's Corner

There are many resources out there for teaching geoscience, but, with so many to choose from, sometimes it is difficult to find exactly what you need. [Teacher's Corner](#) is a database of teaching resources spanning all geoscience subjects, specifically aimed at teachers. The database is searchable by age range, type of activity and subject area, making it easier for you to find teaching inspiration. Teacher's Corner will also showcase some of the work that GIFT teachers have produced from Geosciences Information For Teachers (GIFT) workshops and while engaging with real scientists. In addition, if you're a GIFT teacher or have a great resource of your own, [you can upload your teaching ideas and resources](#) to Teacher's Corner for other teachers to use and share.

I'm a Geoscientist – Get me out of here!

Some of you will have heard of I'm a Scientist – Get Me Out of Here!, which runs in the UK and engages school children with scientists. The EGU has now developed their own version of this event in collaboration with the UK company Gallomanor, called [I'm a Geoscientist – Get Me Out of Here!](#). I'm a Geoscientist focuses on the geosciences, with scientists from across the EGU's broad subject areas chatting online to 500 school students from across Europe and South Africa. Although registration to take part in our first June (17th to 26th) 2014 event has closed, you can still join in by visiting the I'm a Geoscientist website (imageoscientist.eu) and watching the event take place – live! There you will be able to see the questions students are asking the scientists and the scientists' responses. [If you're a teacher](#), you can use this event to engage



Planet Press and I'm a Geoscientist are two of the educational initiatives targeted at school kids the EGU has been working on this year.

your own classes with science or just have a look at what goes on to see if you'd like to take part in a future event. [If you're a scientist](#), you can take this opportunity to practice engaging with the public about your research, see your research in new light, gain wider recognition for your work and fulfil the public engagement requirements of your funding proposal.

Geolocations Database

If you like taking your family or class on field trips to explain geological phenomena, or just like to get out in the wild, our [Geolocations Database](#) could be a great place to find out about some of the best locations near you. The database is designed for teachers or parents wanting to find exciting geological locations nearby, and is searchable by country, type of location and whether it is suitable (and safe) for children. In addition, you can also [upload](#) your own favourite geological locations to the database!

That's all for now, but we'd like to keep these initiatives going strong in the future. We need help in writing Planet Press releases, ideas for Teacher's Corner resources and sites for the Geolocations Database. We also hope to continue to run I'm a Geoscientist in the future, to help more school children chat directly to scientists about their research and provide scientists with the opportunity to practice communicating their work. If you would like to help with any of these initiatives then please get in touch with EGU Media and Communications Manager Bárbara Ferreira at media@egu.eu.

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