

## My Earth science educator story – Frank Holzförster: What I did, why I did it and what happened



The first time I became exposed to geology was when I was very young, while I was exploring the former sand pits in the woods behind my family's home. Years later I had to make a decision on what I wanted to earn my living from. While I was thinking about other natural sciences and architecture, I browsed through a booklet published by the German government listing all the subjects that could be studied in Germany at that time. Geography and Geology caught my eye. About six months later, I enrolled for Geology with the University of Freiburg in the far Southwest of Germany. The subject turned out to be very interesting and I became more and more excited about the rocks and everything behind them. This meant all aspects of scientific questioning, investigating, interpreting and lastly problem-solving – but also knowing that any question solved in natural sciences always produces new ones. I received a broad basis of geological knowledge, whilst I specialised in the field of sedimentology. But I wanted to go deeper.

So I began a doctoral thesis (comparable to a PhD in Anglo-Saxon countries). This took me to Africa for the first time in my life and I learned a lot from my German instructors and from South African and

English colleagues collaborating in the project. My task in Namibia was to unravel uncertainties in the evolution of the early South Atlantic Ocean. So, I was researching a part of the break-up of Pangaea; I was in the middle of plate tectonics! That was a great feeling, particularly as I was able to add something substantial to the knowledge of the separation of the African and South American continental plates. Moreover this improved my English a lot; I took part in international conferences and developed personal contacts in various parts of the world. During my doctoral studies I encountered a super-interesting project going on in Switzerland, where they were building the new Gotthard-Transalpine railway tunnel and I asked my instructor if he would set up a student fieldtrip. He refused, but was willing to assist me in planning and leading the trip myself. That became my first experience of Earth Science education.

### **My first break: a new world**

After completing my doctoral thesis I was employed by Rhodes University in Grahamstown, South Africa. In this position I was responsible for the sedimentology courses at undergraduate and graduate level. It was a real challenge to me, but I loved becoming involved in a teaching system rather different to what I knew from Germany. One day I was asked to join the science week at the local natural history museum to present a course on rocks and minerals to 10 to 14 year old children. Another challenge, but I still have fond memories of that course.



"My" lecture hall at Rhodes University.



Explaining minerals to primary school kids at Albany Museum Grahamstown.

### **My second break: new surroundings**

In 2001 I was offered an assistant professorship position at Würzburg University back in Germany. Again I was teaching sedimentology and field-mapping at all university levels. The inspiring mapping courses in geologically-stunning areas of Germany and student field trips to France, Switzerland, Iran, South Africa, England etc. exposed me continuously to a range of new challenges in Geoscience education.



With undergraduates on the search for plant fossils.



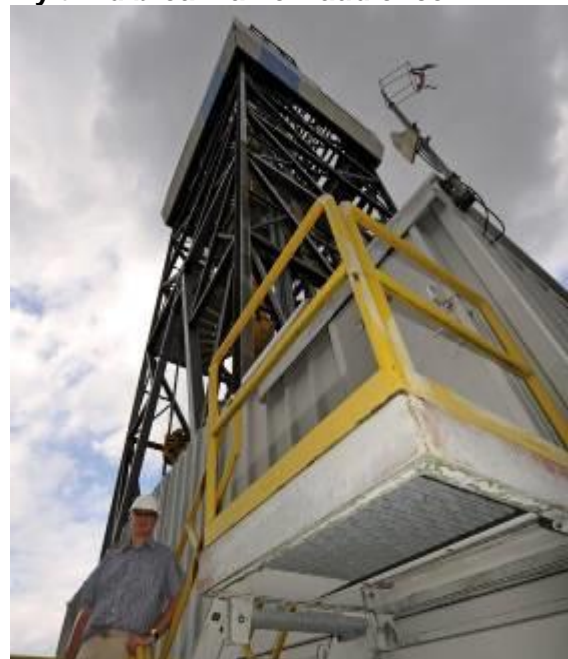
Discussion on the development of stunning ripple surfaces.



Field explanation of fluvial sedimentary structures.

I also came into contact school teachers involved in primary and further education. This was a new field, but they apparently were in need of deeper geological understanding. I assisted them by designing study programs and field trips to provide them with the fundamentals of geological understanding for their own teaching.

### **My third break: a new audience**



Me at the 83 m high KTB drilling rig.



Sorting core samples of the KTB drilling.

When my temporary employment could not be renewed due to circumstances beyond my control, I received an offer from the geoscience education center where I am currently employed. A group of enthusiastic people had found ways of preserving and using the location of the former continental deep-drilling program of the Federal Republic of Germany (in short: KTB) as a geoscience education center. I quickly became interested in this new field and started seeing opportunities for further development of the center which owns the deepest research drill hole in the world and the most powerful and highest drilling rig, whilst all the rock samples of the project are stored there too.



Explaining the geoid model in our museum.

With a growing team of geologists, biologists, geography teachers and others I developed geoscience courses for children from the age of 4 years through to retired adults. A big focus is the education and further education of both geography teachers in general geology and in specific fields like soil sciences or volcanology. I am also in charge of the associated museum, and so I am involved in developing exhibitions and special events

for the general public. I'm glad to report that numerous colleagues from universities and the administrative environment support me in many important ways. Thus the KTB Geoscience Center, of which I am glad to be the scientific director, is actually the biggest geoscience education center in Germany. Altogether this job turned out to be very challenging but very rewarding too. I love geoscience education. It has become a real passion.



Working with school students on rock identification and classification.

My geoscience education story was written at the end of 2018 shortly after I became what is supposed to be a 'wise' person of more than 50 years life experience. The story was eventually written due to Chris King's friendly but continuous nudging through the Geoscience Education Conference (GeoSciEd VIII) in Brazil in July 2018. Please feel free to contact with me by e-mail.

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