



Evaluation report

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

Earth Zone - June 2014

Funded by the European Geosciences Union

The screenshot shows the Earth Zone website interface. At the top, there is a navigation bar with 'Zone Home' and 'Geoscientists' tabs. A search bar is present. A 'Meet the Geoscientists...' section features five profile cards for Rehemat, Jesse, Denise, Daniel, and Anna. To the right, there are icons for 'Ask?', 'Chat', and 'Vote X', along with a 'Log in' button. Below the navigation, five detailed profile cards are displayed, each with a photo, name, and a 'Me and my Work' section. The profiles are for Rehemat Bhatia, Jesse Davenport, Denise De Gaetano, Daniel Lao Davila, and Anna Rabitti. Each profile includes a 'Status' field and a 'Read more about me' link. Below the profiles, there are sections for 'Latest Question' and 'Latest Comment' for each geoscientist.



Contents

1. Executive summary	3
2. Introduction and background	4
3. Activity in the zone	5
4. Questions and live chats	6
Question coding	6
Examples of good engagement	7
5. Participation	9
Scientists	9
Scientists interviews	11
Schools	13
6. Publicity	14
7. Benefits	15

1. Executive summary

The Earth Zone of *I'm a Geoscientist, Get me out of here!* in June 2014 was **successful**:

1. **The students really understood the event dynamics and got engaged in conversations with the scientists:** students read the scientists profiles and asked about the research of each individual scientist. They were also really interested in learning more about the scientists' daily lives, as well as their hobbies and their opinions on topical issues like climate change.
2. **Teachers and students valued the event.** Some of the students participating in *I'm a Geoscientist* were doing it during their summer holidays. Also, all but one of the schools showed up to all the live chats they had booked.
3. **26 EGU members applied to take part**, indicating that there is enough interest in online public engagement with schools students within the organisation. This allowed us to be selective in the scientists' recruitment process as we had over 5 scientists per *I'm a Geoscientist* position. The scientists had a wide range of research interests: from volcanoes, to past climate reconstruction and sea waves.
4. **The scientists enjoyed taking part.** Anna Rabitti said she *"really enjoyed the event. It was a nice occasion for me to play with these kinds of things. It was the first time I did something like this, and I was surprised it was so easy and that everything worked so nicely!"*
5. This was the first time we ran an event in which **English was not the first language** for most of the students and scientists. However, **no big language problems were noticed** by our team or the zone moderators. Humour might have been lost slightly, but questions and chats were mostly great.
6. This was also the first time we ran an event with **students from different countries using CEST** (Central European Summer Time), which was the local time for most of the schools and differs by one hour with our local time in the UK. This worked well and we there weren't any major problems.

This being our first *I'm a Geoscientist* event, we think we still can improve certain aspects of it:

1. We had a higher school dropout rate than usual in *I'm a Scientist*. This was mainly due to the timing of the event in mid-June, which meant that many European schools were already on summer holiday or in the middle of exams. The size of the classes that participated in *I'm a Geoscientist*, was also smaller than the usual *I'm a Scientist* class. **We will ask teachers when they would like to take part during the year, to consider running the event at a different date and invite even more schools to take part.**
2. In this event, we selected teachers and scientists weeks earlier than we normally would in *I'm a Scientist*, which left longer gaps between emailing teachers with updates, especially after they were selected when the zone wasn't built yet on our website. We will continue to **recruit as early as possible, but we will make sure we communicate better with teachers in the future**, like sending them reminder emails about the event, or asking to confirm if they are taking part, so we can offer places to reserve schools in case others drop out.

2. Introduction and background

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

I'm a Scientist (IAS) is an award-winning science engagement event that gets scientists and school students talking. The event takes place over 2 weeks online at imascientist.org.uk. The event is split into zones. Zones are either general (named after an element) or themed.



In September 2013, Gallomanor (GM) and the European Geosciences Union (EGU) teamed up to create *I'm a Geoscientist, Get me out of here* (IAG) to bring together geoscientists and students from across Europe online. The idea was for IAG to work in the same way as IAS.

Each zone consists of 5 scientists writing profiles, being questioned, taking part in live chats and facing eviction based on the votes of up to 400 students. At the end of two weeks the winning scientist in each zone receives a €500 cheque to spend on further science communication.

We started with a general zone “Earth Zone” with a broad range of 5 geoscientists. Schools were recruited primarily from the EGU network of Geosciences Information For Teachers (GIFT). Scientists were recruited from the EGU membership, invited to apply and selected through our usual process of asking students and teachers to rate a one sentence description of their work.

The event ran from 16th - 27th June 2014. 5 scientists and 174 students from 9 schools interacted in the Earth Zone.

The European Geosciences Union

The European Geosciences Union is a non-profit international union of scientists dedicated to the pursuit of excellence in the geosciences and the planetary and space sciences. The EGU runs a substantial outreach programme, in order to promote the geosciences and the solar system sciences, and this includes *I'm a Geoscientist, Get me out of here!* as well as workshops and other educational resources.



3. Activity in the zone

The Earth Zone – the first *I'm a Geoscientist* Zone – ran at the same time as 17 *I'm a Scientist* zones and 4 *I'm an Engineer* zones in June 2014. However, we need to be cautious when comparing *I'm a Geoscientist* with *I'm a Scientist*, as the latter is a very well established event which benefits from a much higher base line of activity, such as site visits.

The Earth Zone engaged students from 9 schools from 7 countries, with 5 scientists from 4 countries. The timing of the event in mid-June meant that many European schools had finished for summer or were in the middle of exams, so fewer students than expected registered. In the future, we will ask the teachers when would be a better time to run the event. Still, the level of interaction between scientists and students was excellent, with all the scientists thoroughly answering questions, giving a very high average of 3.1 answers per question. This was despite the event being held in English, which wasn't the mother tongue for the majority of students (and some of the scientists!).

Page views of various pages in the *I'm a Geoscientist* site

	Page views
<i>I'm a Geoscientist</i> site	15,819
Earth Zone	11,862
ASK page	766
CHAT page	1,217
VOTE page	579
Teacher notes PDF	22
Scientist notes PDF	9

	EARTH ZONE	<i>I'm a Scientist</i> ZONES AVERAGE
Registered students	174	282
% of active students (used ASK, CHAT, VOTE or commented)	74%	80%
Questions asked	193	488
Questions approved	147	217
% of students who asked a question	34%	43%
Questions per student	1.1	1.8
Questions answered	147	207
Answers given	460	429
Comments	45	54
Votes	132	219
Live chats	11	12
Lines of live chat	2,203	4,020
% of students who chatted	56%	69%
Schools	9	6

4. Questions and live chats

Students asked lots of questions on the theme, with, earthquakes, volcanoes and other natural disasters popular in several questions and live chats. Other popular topics, both in the CHAT and ASK sections, were the weather, global warming, floods and droughts.

The students were curious to learn more about each scientist's research. They asked Jesse about rocks, Denise about earthquakes and Anna about internal ocean waves. They also asked for career advice, and were particularly keen on the routes to becoming a geoscientist. Students commented on questions to thank the scientists for their answers.

Example questions in the Earth Zone

"What happened to the magnetic north in the last century?"

"How long does it take to predict the weather for the next day?"

"How does animal react when earthquakes occurs?"

"How was global warming first discovered?"

"What do you think is worse: flood or drought?"

"So you rely on data from other scientists? How can you be sure about the data of other scientists, to be not faked?"

"What will happen if the ozone coat will be destroyed?"

"What is the effect of a nuclear winter on Earth?"

"How do you know what it is inside of our planet, if no one has ever been there? Suppositions?"

Question coding

Questions asked through the ASK facility are moderated by the team before being approved to the scientists. Due to the large volume of questions asked there are options to mark questions as duplicates of others, refer the student to see the scientists' profile if the question has been answered there, and delete rude or offensive questions (see more about moderation policy: imascientist.org.uk/scientists/help-2#moderation).

To see what themes were popular in the ASK section we analysed the 147 questions which were approved in more detail. Each question was sorted by two measures: the type of question (whether it was asking for a fact or opinion) and the question subject.

Fact or opinion

87% of the questions asked to the scientists were asking for facts (What? Where? Why? and How?) and 13% asked for the scientists' opinions (What do you think?)

Type of question	Count	%
Fact	129	87%
Opinion	18	13%

While most questions tried to find out a factual answer to questions, students also wanted to engage with the scientists on a different level, asking their opinion about scientific topics (such as climate change), but also about other more personal themes: like their hobbies and interests.

Question topics

Moderators tag the keywords in each question so when people are browsing the website, the site can suggest 'related questions' on a similar topic that they might also want to read. Tagging the questions is fairly subjective, as some questions could fit into multiple topics. The top categories are shown below.

About 50% of the questions the students asked were about different geoscience concepts and facts. They also asked scientists about their careers (around 20% of the questions) and about their personal interests and day to day lives (30% of questions).

The variety of geoscience topics in which the students were interested (volcanoes, earthquakes, climate change, magnetism, glaciation, oceanography...) indicates out that there is definitely an opportunity for the scope of *I'm a Geoscientist* to be more specific. The zones could be themes around EGU's Divisions, ie: Atmosphere Zone, Climate Zone, Ocean Zone, Natural Hazard Zone, Soil Zone.

KEYWORDS	NUMBER OF TIMES	KEYWORDS	NUMBER OF TIMES
career	21	climate	6
choice	14	earthquake	5
volcano	13	school	5
free-time	11	discovery	4
earth	10	formation	4
preference	10	magnetic field	3
personal	10	natural disaster	3
work	9	prediction	3
eruption	6	tectonic plate	3
global-warming	6	internal wave	3

Examples of good engagement

All the scientists were really good at engaging with the students, and there was a very even participation of them all (as showed by the pie charts in the next section), this was also picked up by a teacher who email us to thank the scientists for their participation:

"we had the live chat today and the students loved chatting with the scientists. We were prepared to chat with only 2 and were pleasantly surprised to see 4 of the scientists available for the chat." – Sally Soria-Dengg, teacher


Career choices, as well whether it was hard to become a geoscientist were recurrent topics in both ASK and CHAT. Rehemat gave a very good and personal answer in one of the live chats:

“Sometimes my grades weren’t great when I left school, but I understood the theory I just struggled with exams. My GCSE grades were fine it was just my A Levels that weren’t great. So when I went to university I made sure I really worked hard and pulled them up. And now here I am doing a PhD! I don’t think anyone in my school would have predicted that” – Rehemat Bhatia, scientist

The scientists were very good at keeping conversation going during live chats, by asking the students about their favourite subject, hobbies etc.


There were also interesting conversations in the ASK section, in which students would ask a question, and keep discussing it after reading the scientists’ answers:

Q **Question: How do you know what it is inside of our planet, if noone has ever been there? Suppositions?**
Asked by danut to Anna, Daniel, Denise, Jesse, Rehemat on 24 Jun 2014.  0 Like?


A **Jesse Davenport**
answered on 24 Jun 2014: 


Hi danut, that is a really great question! There are a few ways that we know about the structure and composition of our planet. First, we do have rocks on the surface that have been collected from deep within the planet. Things such as kimberlite pipes, which are associated with diamond formation, bring up rocks from deep within the earth. Other things like ophiolite complexes do the same thing. Also, when earthquakes occur they send seismic waves throughout the layers of the Earth and these waves can be monitored by geologists at the surface. How fast these waves travel can tell us about the composition of the layers of the Earth. Waves travel differently through solids, liquids, sediments, and different densities, and we can tell what they traveled through by the time it takes for a wave to go from one part of the world to another.

(...)

danut
commented on 24 Jun 2014: 

Hi and thank you for the answer! I really appreciate!
About those waves, i dont think they travel through all the layers, do they?
And if they don't, how is it possible to know what's in there?

Reply to this comment (Edit)  0 Like?

Denise
commented on 25 Jun 2014: 

Hi Danut, You are very welcome. Surface waves would only travel through the surface layers, while body waves travel throughout. 😊

(...)

Popular used words from the Earth Zone live chats, the size of the word represents its usage and popularity



5. Participation

Scientists

28 scientists applied to take part, of which 26 were EGU members, indicating that there is sufficient interest in schools engagement within the organisation. This allowed us to be selective in the scientists' recruitment process as we had over 5 scientists per *I'm a Geoscientist* position. When the scientists apply, they write a one sentence summary of their work. This summary is sent to students and teachers, who rate the scientists based on their descriptions and how much they'd like to see them in the event. We also try to get a mix of scientists with different research interests and academic levels (from PhD students to Professors), located in a variety of institutions across the World, and a nice balance of female and male scientists. In this occasion, we excluded scientists who have participated in *I'm a Scientist* in order to provide a better chance for new geoscientists to get involved.

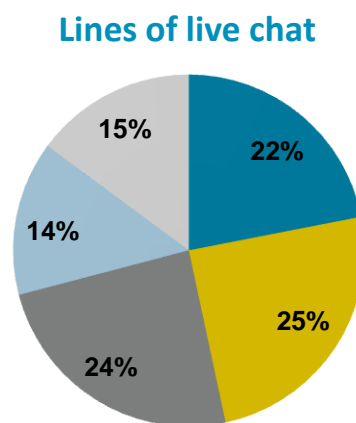
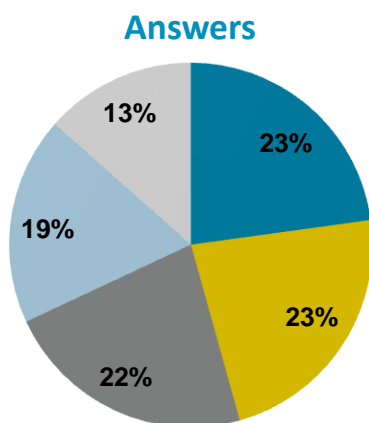


The 5 scientists in the Earth Zone were based at a range of institutions – from universities, to science institutes or museums – in 5 different countries in Europe and America. Four scientists were based in Europe, while Daniel Laó Dávila was based in the USA, which didn't stop him taking part in some live chats at 3am his time!

As most of the schools were based in continental Europe, we ran the event in CEST (Central European Summer Time) for the first time, which differs by one hour with our local time in the UK, and there weren't any major problems. There was just one chat booked by a UK based school in which the teacher had to rebook, as they had mixed up the time difference.

There were a total of 132 votes cast in the Earth Zone, with one scientist evicted each day in the 2nd week, over 4 voting rounds. Students cast their vote in every round. **Anna Rabitti** was crowned the winner of the Earth Zone.

Scientist	Institute	Brief description of their research, written by the scientist for rating by students & teachers	Result	% of votes	Number of profile views
Anna Rabitti	Royal Netherlands Institute for Sea Research and Utrecht University	I am studying waves deep inside the ocean. These waves are probably (we don't know yet!) responsible of many processes in our oceans and climate, but also in the interior of stars and far away planets, where exactly the same kind of waves exists.	1st	31%	339
Daniel Laó Dávila	Oklahoma State University	I study how mountains and earthquakes form at the boundaries of tectonic plates.	2 nd	30%	317
Denise De Gaetano	Ulster University	I am a seismologist and science communicator, who combines music and earthquakes.	3 rd	19%	300
Jesse Davenport	Centre de Recherches Pétrographiques et Géochimiques	My work deals with investigating the role of weathering and erosion of Himalayan rivers, sediments and rocks and its effects on climate change and tectonics.	4 th	13%	289
Rehemat Bhatia	University College London and the Natural History Museum	Studying tiny fossils with big climate stories to tell.	5 th	8%	320



Scientist	Position
Anna Rabitti	Winner
Daniel Lao Davila	2nd
Denise De Gaetano	3rd
Jesse Davenport	4th
Rehemat Bhatia	5th

Scientist interviews

We conducted 3 telephone interviews with Anna Rabitti, Daniel Laó Dávila and Rehemat Bhatia in the week commencing 7th July 2014. They were all very positive:

“It was fun, quite useful because I had to breakdown my understanding of what I had studied.” – Rehemat

“It was great. I enjoyed the experience, chatting with the students and the other scientists.” – Daniel

“I really enjoyed the event. It was a nice occasion for me to play with these kind of things. It was the first time I did something like this, and I was surprised it was so easy and that everything worked so nicely!” – Anna

Living up to expectations

Rehemat and Daniel knew what to expect from the event. Some of Rehemat’s friends had previously participated in *I’m a Scientist* and told her about the experience, and she had also followed some of our previous hashtags on Twitter, which she found useful. Daniel watched the video on the *I’m a Scientist* website to gain an understanding of the event. Anna, on the other hand, didn’t know what to expect whatsoever, but she decided to give it a go!

Rehemat’s and Daniel’s expectations were fulfilled, and the event turned up being what they were expecting.

“Some of the chats were very fast, with lots of students and others had fewer students, or had all the questions asked by the teacher, which made them really slow. But yes, overall it was what I was expecting.”
- Daniel

Time commitment

The three interviewed scientists seemed happy with the amount of time they devoted to the event. And actually, some of them thought it would take longer:

“Honestly I was expecting more live-chats... It was good, but I was afraid it was going to be more intense and take more of my time.” – Anna

Daniel commented that it had been relatively easy for him to find time to devote to the event because *“I had no teaching commitments (at Oklahoma State University), because university has finished, so that was fine.”* He had to wake up very early in the morning (3am, or 5am on a couple of occasions) to adjust to the chats happening in European schools, while he is based in the USA.

Comparison to other public engagement activities

There were mixed feelings on this; Rehemat had participated in other public engagement activities before and she didn’t find *I’m a Geoscientist* particularly different from her previous experiences, *“except for the live chats, which were much quicker”*.

Both Daniel and Anna, emphasized on the positive value of the international interaction. Anna said that *“it gives the students the opportunity to interact with the international scientific community, instead of just*

someone local. (...) it gives a good image of the scientific community.”

Still, they both missed the face to face interaction, but understood it wasn't possible to have it all in the same event.

“I feel like I was not a real person, but someone inside a computer, which cannot be the same as real person in the classroom (...). You communicate in a different way. At least that was my perception, it may be different for the students”. – Anna

Communicating in English when it isn't your first language

No big language problems were noticed by our team or the zone moderator. When asked during the event, the scientists only mentioned a slight delay during one of the live chats, but this was more likely due to the teacher using a single computer to ask all the students' questions.

Interestingly, Anna mentioned that the event being held in English had both a positive and negative side. On the one hand, students get to practice English while learning science, but *“it is difficult to “play” or use humour, as there is an additional language barrier.”*

The students also seemed less jokey and more serious and respectful of the event sometimes, which might be related to them communicating in a second language or their older age compared to *‘I’m a Scientist* events.

Benefits from taking part

The three interviewed scientists agreed that the event had helped them practice their Science Communication skills and get to grips with students' interests. Rehemat also said that *“If people ask what I am doing, it's nice to have premade answers. The event has helped me make solid answers to this kind of questions.”*

For Daniel it was important to communicate with students from other countries and cultures, and Anna said that she *“gained an enthusiasm in what I'd like to do after my PhD. In the scientific world, public engagement is not much valued, and sometimes it's even considered a waste of time. This event made me think that I should take some time to do this, because I like it and I realised I can do it effectively.”*

Suggestions of how to improve the event

Both Daniel and Anna would have liked to have more information about the students: age, nationality, etc. Anna also mentioned that it would have been nice to get a little bit of background of the level and concepts that each class knew already, as well as feedback from the teacher, as she kept wondering *“how much the students were getting from the event”*. She also said *“I wish more students filled their profiles, or were more encouraged to do so.”*

Daniel also mentioned he would have liked to know more about how the whole website worked; and who could see and access what.

Schools

34 schools applied to take part in the Earth Zone. We selected a group of them based on their affiliation to the Geosciences Information for Teachers network, their English level and their location, so they would all be in a similar time zone.

We gave places to 24 schools of which 9 took part in the event. Of the 15 schools who were offered a place but didn't turn up, 2 cancelled places before the event, one had technical difficulties to register students and another three emailed in to say that students were already in summer holiday. In fact, we later found out that some of the students participating in *I'm a Geoscientist* had attended to school during their first days of summer holiday especially to take part in a live chat:

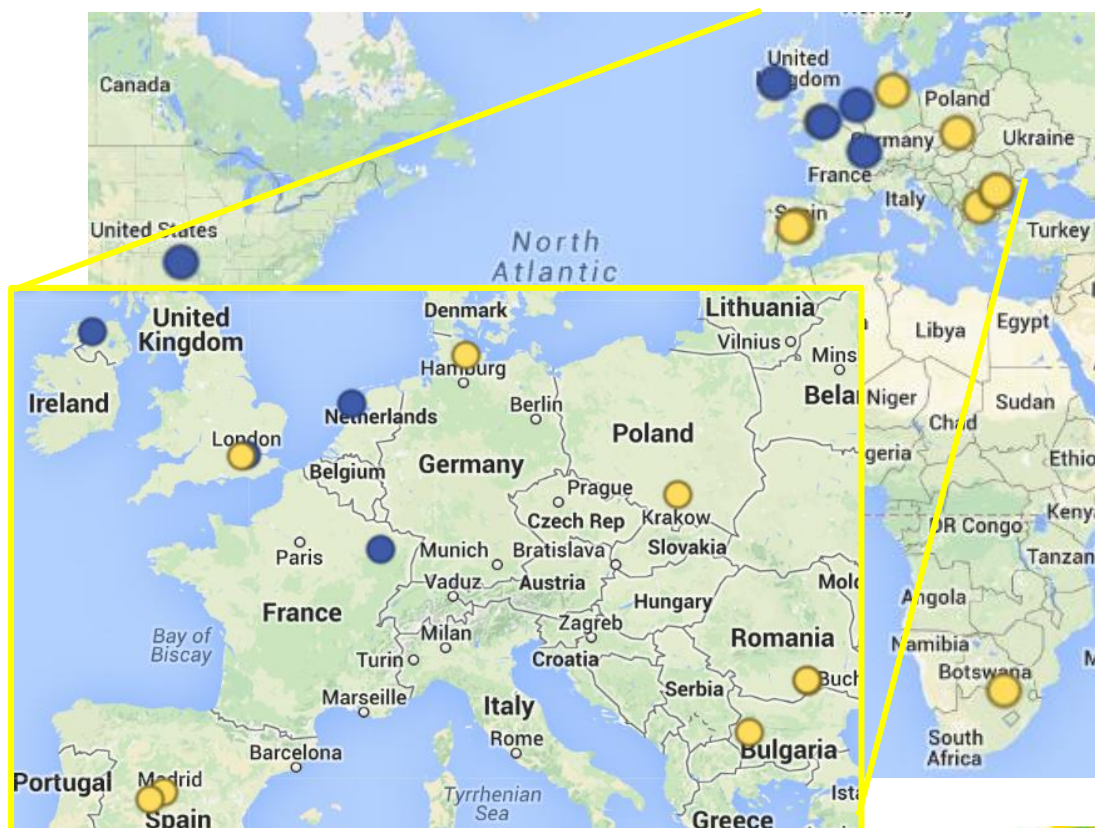
"We started the summer holidays(...). Because there were many interested in this project i gave the possibility of other students to login and ask questions. Tomorrow students are coming especially to school to chat dialogue. We worked together a few questions" – Corina Stanescu

Another teacher implied the students were participating in *I'm a Geoscientist* during their holiday time:

"The students are almost on holidays! Anyway, I am keeping in touch with the most interested ones, in order to conclude the tasks related to "I'm a geoscientist" " – Marta Perez Folgado

On top of this, there was only a no-show in live chats, which together with the teacher comments above tells us that students and teachers really valued the event.

The map shows the location of the schools (yellow) and scientists (blue) that took part in the Earth Zone.



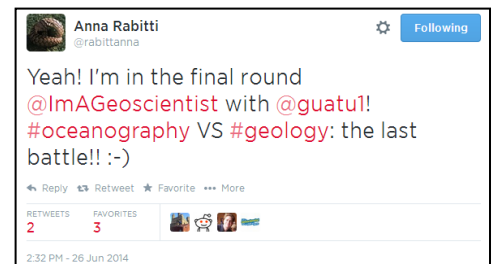
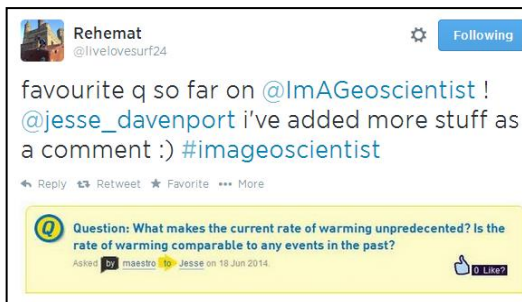
There was a good spread of schools across Europe and one in South Africa. There were two schools from Romania, two from Spain, one German School, one Polish, one from Bulgaria and another one from the UK.

The average age of the students participating in *I'm a Geoscientist* was higher than the usual *I'm a Scientist* mean student age. Most of the students in *I'm a Scientist*, are between 11 and 15 years old, whereas most of the students in the Earth Zone were between 14 to 18 years old.

6. Publicity

I'm a Geoscientist (@ImAGeoscientist) regularly tweeted event updates and popular questions asked in the Earth Zone and linked to @EuroGeosciences.

Four of the Earth Zone scientists (Anna, Daniel, Jesse and Rehemat) were on Twitter and tweeted about the event. Here are just some examples taken from the *I'm a Geoscientist* Twitter time line:



7. Benefits

Scientists

Scientists improved their communication skills, enjoyed being connected to other scientists, learned about the students interests, and often found a renewed vigour to do more science outreach:

"I embarked in this I'm a Geoscientist adventure, together with my four colleagues, and all the students and teachers that took part; what a good decision has been!" – Anna Rabitti, scientist

"Enjoying this experience!" – Denise De Gaetano, scientist

"Enjoyed today's chat of ImAGeoscientist . Looking forward to the next one." – Daniel Laó Dávila

Students and teachers

Students gained a better awareness of what geoscientists actually do and what they are like. Students engaged in debates with scientists during the live chats. Students felt empowered to ask scientists about their personal opinions and experiences. It also showed students that scientists don't know the answer to everything and that they also go through challenges in life, just like any of us.

Both students and teachers left positive comments during the event:

"The students enjoyed the chat very much. I'm very happy that I can take part in your project - I find the idea really interesting and your website is excellent." – Barbara Zaich, teacher

"It was very nice of you to answer our questions, we definitely learned a lot. Thank you" – kisi19chan, student

"We think that these chats are a great idea!" – sierravalle, student

"The students are already posting questions even at home. They enjoyed the chat today and want to have another live chat. The students did not notice the time pass during the chat and were rather sad that it was over quite soon." – Sally Soria-Dengg, teacher

"It was a wonderful experience for the students and also for me." – Corina Stanescu, teacher