

## How to teach Science to teenage students – Fátima Gimeno-Ferrer (ESR 8)

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Teaching and sharing knowledge sometimes is a challenge, especially when the people in front of you have a completely different background or even age. This is one of my challenges during my period as ESR in UKJ. My Supervisor, Prof. Frank Richter is involved in the Science teaching program of high school students in order to show them how scientific work is conducted in a real lab. Therefore, during my period in Jena I am trying to develop and improve my scientific communicating skills with teenage students.

Before I moved to Jena, I worked as a support teacher of Math and Science in the town hall of my hometown (Riba-roja de Túria, Spain) for approximately 1 year. During this period I learnt about how to deal with young students and the different ways to communicate with them so that they could understand the meaning or significance of complex knowledge (such as Chemistry, Biology or complex Mathematical problems for their age). What became clear to me is that all young people don't have the same interests and, of course, some of them have the ability to quickly understand scientific problems but others need more time and the use of different words or examples in order to grasp what can be complex subjects.

When I started to assist Prof. Richter in the science teaching to the young girls in our lab, I realized several things:

- The difference between students is patent as I commented before, confirming my previous experience.
- Being able to see the experiment with their own eyes made the students more interested and, therefore, more willing to interact and ask questions without worrying about doubts they may have.
- It's important to choose the vocabulary carefully when teaching the students. You need to be able to present the same explanation with completely different words and try to keep it simple. In some cases, you can start with a complex explanation which some of them can get but others will need more time and to have things explained again in a different and perhaps easier way.
- A good method is to use some common examples which the students can relate to or to draw a main scheme of the problem you are exposing; it is true that sometimes an image is worth a thousand words!

Apart from the difficulties of teaching young people noted above, another important thing for me is the language barrier. So, I try to explain slowly all the concepts because English is not the mother language of the high school students we host and neither is it mine. At the same time, I highlight the importance of knowing English since the majority of accessible scientific resources are in this language. So, taking into account these tips I try to encourage them into our scientific world but sometimes it is not an easy task. However, with patience and perseverance, our two-way communication will improve and they, at least, can learn a bit about a topic we work on and get to see how a real scientific laboratory works.