

Science Communication from Undergraduate Students to Children: Activities, Opportunities and Challenges

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Abstract. Science is the engine of society's development and the promotion of scientific literacy is very important not only to engage new generations in the world of science but also to make scientific concepts more clear, accessible and appealing to non-expert citizens. Science education should start as early as possible, awakening children to critical observation of the surrounded environment and the scientific thought. The most effective and successful way seems to be through experimental activities, which in turn should be provided as soon as possible.

To encourage a closer connection between science contents and children and youth, helping them blooming to science, the Experiment@Ciência project designed and implemented several scientific and interdisciplinary hands-on activities.

"Experiment@Ciência", which involves three teachers from the Departments of Biology and Mathematics of the Sciences School of University of Minho, invited the "Núcleo de Estudantes de Biologia Aplicada da Universidade do Minho" (NEBAUM) to be their partners in several initiatives related with the communication of science to young people, challenging the students enrolled in the degree of Applied Biology (AB) at Universidade do Minho to be science communication agents in such activities. From this partnership several activities have been promoted for different publics. For instance, the "BA-LAB-DAY", a laboratory session to high school students and "Ciência p'ra que te quero", a set of experimental lab hands-on activities designed for children between 6 and 10 years old.

The development of teaching and learning strategies is a permanent challenge, especially if you are someone without any knowledge in pedagogic issues and if you are still an undergraduate biology student. However, this fact did not make NEBAUM to give up this

challenge, which was instead taken with enthusiasm and passion, with several NEBAUM students engaging actively with Experiment@Ciência in such outreach projects. “BA-LAB DAY” had the purpose to provide high school students with the opportunity to experience the university’s atmosphere, as well as the kind of work performed at a molecular biology research laboratory, enabling students to try and perform a set of experimental techniques of the field.

The ‘Ciência p’ra que te quero’ initiatives aim is to get children of a young age (6-10 years old) excited about science. This multidisciplinary initiative approaches matters of biology, mathematics, chemistry and even sociology and some others less represented sciences/subjects. The initiative is composed by nine sessions, running from February to December 2015, with each one having a different theme, but all with a similar structure. Firstly, a small introduction on the theme is made. Then children are divided in smaller groups of similar age in order to allow a more close interaction. At each station children are normally presented with a more interactive activity or an experiment where specific properties or details of the studied subject are explained and/or discussed. Once all the groups experienced all the activities, they were challenged with a small quiz about what they had learnt and a questionnaire related with the activities, trying to assess which they liked most and the reasons behind such preferences.

The present communication intends to present the activities in which Experiment@Ciência and NEBAUM worked as a team, testifying the challenges, the difficulties and the successes lived at NEBAUM during this collaboration.