

SPACE EDUCATION AND OUTREACH SYMPOSIUM (E1)
Lift-Off - Secondary Space Education (2)

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FROM PEER LEARNING TO SELF LEARNING: COMPETITION TEAMS.

Abstract

We are a group of students that have been learning through Self Learning for the past five years, 2009-2014. We have participated as teams in:

- Zero Robotics 2012, 2013 and 2014: finalists in those three editions, First Prize 2013 and fourth Global Award in 2014.
- European Cansat Competition 2012: Spanish representatives.
- International Cansat Competition 2012: Gold Scientific Award.
- Volare Space Robotics Competition 2012.
- Physics Brawl 2011, 2012 and 2013.
- Individually: International Physics Olympiad (Astana 2014), Spanish Physics Olympiad (Bilbao 2012, Lleida 2013, Coruña 2014), Honorable Mention in the First Step to Nobel Prize 2012, National Contest for Young Scientists (First Prize 2012, Second Prize 2014).

In order to achieve these goals, the students improve or acquire mathematics, physics engineering and programming skills. The students participate in teams of 4 to 10 people depending on the competition. This along with the fact that there is an age difference of up to 4 years between the members, allow them to peer learn among the members of the team. José Francisco Romero introduced us into these competitions. During these years we have participated and have had a first-hand experience with this method of learning, first as students and the last year as mentors.

We defend that students learn better when involved directly with the subject of study and organized into teams. Teamwork and team achievements are supported in an environment where students are

evaluated through exams and personal achievements..The student becomes part of a team that has higher goals than a mere individual. This way of working is very similar to the one required on technology, research or engineering careers. With our teacher as reference and ourselves as a team we have been able to learn more than we would have ever imagined. We have made real progress in our learning skills from programming to applying Physics and Mathematics into real problems. Although it was hard at first since we were inexperienced, overcoming that difficulty meant becoming a self-learning group. With this method we have learned to learn, which is, in our opinion, of utmost importance.