World Academy of Science, Engineering and Technology
International Journal of Educational and Pedagogical Sciences
Vol:9, No:09, 2015

Pibid and Experimentation: A High School Case Study

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Abstract : PIBID-Institutional Program of Scholarships to Encourage Teaching - is a Brazilian government program that counts today with 48.000 students. It's goal is to motivate the students to stay in the teaching undergraduate programs and to help fill the gap of 100.000 teachers that are needed today in the under graduated schools. The major lack of teachers today is in physics, chemistry, mathematics, and biology. At IFSP-Itapetininga we formatted our physics PIBID based on practical activities. Our students are divided in two São Paulo state government high schools in the same city. The project proposes class activities based on experimentation, observation and understanding of physical phenomena. The didactical experiments are always in relation with the content that the teacher is working, he is the supervisor of the program in the school. Always before an experiment is proposed a little questionnaire to learn about the students preconceptions and one is filled latter to evaluate if now concepts have been created. This procedure is made in order to compare their previous knowledge and how it changed after the experiment is developed. The primary goal of our project is to make the Physics class more attractive to the students and to develop in high school students the interest in learning physics and to show the relation of Physics to the day by day and to the technological world. The objective of the experimental activities is to facilitate the understanding of the concepts that are worked on classes because under experimentation the PIBID scholarship student stimulate the curiosity of the high school student and with this he can develop the capacity to understand and identify the physical phenomena with concrete examples. Knowing how to identify this phenomena and where they are present at the high school student life makes the learning process more significant and pleasant. This proposal make achievable to the students to practice science, to appropriate of complex, in the traditional classes, concepts and overcoming the common preconception that physics is something distant and that is present only on books. This preconception is extremely harmful in the process of scientific knowledge construction. This kind of learning – through experimentation – make the students not only accumulate knowledge but also appropriate it, also to appropriate experimental procedures and even the space that is provided by the school. The PIBID scholarship students, as future teachers also have the opportunity to try experimentation classes, to intervene in the classes and to have contact with their future career. This opportunity allows the students to make important reflection about the practices realized and consequently about the learning methods. Due to this project, we found out that the high school students stay more time focused in the experiment compared to the traditional explanation teachers´ class. As a result in a class, as a participative activity, the students got more involved and participative. We also found out that the physics under graduated students drop out percentage is smaller in our Institute than before the PIBID program started.

Keywords : innovation, projects, PIBID, physics, pre-service teacher experiences
Conference Title : ICPE 2015 : International Conference on Physics Education
Conference Location : Singapore, Singapore
Conference Dates : September 10-11, 2015