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ALTERNATIVES TO CLASSICAL LABORATORY ACTIVITIES

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Physical experiments are necessary for learning and practicing concepts: theoretical models are compared to actual experiences. In this work we analyze different experimental alternatives: tradicional laboratory experiments, mobile phone labs and “home made” experiences.
For classworks, we notice that students feel that experiments are not priority activities and in case they would choice, not do them. Classworks are performed after introduced the subject in the classroom, while making an evaluation and then, if passed, they go to the lab. A smallgroup, shows interest, while the rest only want the work and leaving, yet without fully understanding the key concept behind the experiment. This turns evident when reporting the experiences.
In those labs using mobile phones as measuring devices, we were able to appreciate a major involvement of the students, although of course, outcomes tend to be less accurate. In calculating inaccuracies, specific sensors for each measurement (proximity, light intensity, etc), are much more precise than mobile sensors, as spected.
Finally, in a volunteer “experimental challenge” proposal, we realize that the achievement of bonding physical theory with measuring effects are enhanced by the degree of participation and the quality in the answers.
The scope in which this work was done is in the physics chairs I, II and III of the engineering faculty of the UNLP, city of La Plata, Buenos Aires, Argentina. The university is public and students do not pay tuition. The first and second year classes, to which these subjects belong, have between 50 and 100 students.

Apply to be
 considered for a student
   award (Yes / No)?

No

Level for award
 (Hons, MSc,
   PhD, N/A)?

N/A

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