

Involving Industry Professionals in Empirical Studies with Students

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Empirical studies are often carried out with students because they are viewed as inexpensive subjects for pilot studies. Though the literature has mostly focused on their external validity, we believe that there are a number of other issues that need to be investigated in empirical studies with students. In our past research, we have identified four viewpoints, each of which needs to be taken into account when carrying out successful empirical studies with students: researchers, teachers, students, and industry professionals. Each viewpoint can be seen as a stakeholder of an empirical study with students, with specific and possibly conflicting goals. The stakeholders also have risks from participating in empirical studies, which need to be identified and minimized.

At any rate, the final goal of carrying out empirical studies with students is carrying out empirical studies in industrial organizations and establishing collaborations with them. It is therefore useful to involve industry professionals in empirical studies with students, and they should actually play all of the stakeholders' roles.

- Professionals as students. This is the case of industrial training or continuous education, and it may be the case of the participation of industrial professionals in university software engineering classes. This could help establish a strong communication channel between academia and industry by showing empirical software engineering may provide value added to them.
- Professionals as customers. Professionals can play the role of the customers for the empirical studies with students in software engineering classes. This may not entail any direct or deep involvement with the empirical study itself. Showing interesting results may help establish a good collaboration.
- Professionals as researchers. Empirical investigations may be at least partially designed and run in the context of software engineering courses by industrial professionals who are interested in the research results. Here, the degree of involvement is certainly higher than in the previous case, as is the interest in cooperating with academia.
- Professionals as teachers. Professionals may be invited by academic institutions to share their expertise with students, for a few lessons in a class or teaching entire classes. In this context, professionals may be willing to carry out studies with students and even be the main driving force behind them. Being both teachers and researchers, professionals will have to find an optimal trade-off between the conflicting goals of either role. Carrying out empirical studies with students is a learning experience for professionals (as well as for professors). The experience that professionals and teachers gather by running empirical studies with college students can be used when running empirical studies with professionals in industrial settings.