Challenges and Recommendations When Increasing the Realism of Controlled Software Engineering Experiments

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Abstract

An important goal of most empirical software engineering experiments is the transfer of the research results to industrial applications. To convince industry about the validity and applicability of the results of controlled software engineering experiments, the tasks, subjects and the environments should be as realistic as practically possible. Such experiments are, however, more demanding and expensive than experiments involving students, small tasks and pen-and-paper environments. This chapter describes challenges of increasing the realism of controlled experiments and lessons learned from the experiments that have been conducted at Simula Research Laboratory.