2nd Workshop on Innovative Software Engineering Education

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Abstract: This workshop aims at presenting and discussing innovative teaching approaches in software engineering education, which are highly relevant for teaching at universities, colleges, and in online courses. The workshop focuses on three main topics: (1) project courses with industry, (2) active learning in large courses, and (3) digital teaching and online courses.

Keywords: Project Courses, Active Learning, Large Courses, Digital Teaching, Online Courses

1   Introduction

Software engineering instructors face more and more challenges due to the growing number of students. Motivating students to actively participate in a course is especially difficult in large classes. Even though practice-oriented and project-based training becomes increasingly important, such project courses in cooperation with industry come along with high effort. To compensate this situation, digital teaching, online courses, and other new teaching concepts complement the curriculum. They offer a wide range of possibilities for modern and attractive teaching, yet introduce further methodical, technical and organizational challenges to be considered by the teachers.

2   Goals

The aim of the *2nd Workshop on Innovative Software Engineering Education* is to bring software engineering instructors together to actively work and discuss the most important topics, challenges, and solution approaches. The goal is to create a platform for sharing experiences and identifying common topics of interest to foster collaboration. The workshop discusses which specific challenges have not yet been solved, so that an agenda for the improvement of software engineering education can be developed taking into account changing social, economic and political conditions.

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The workshop provides an interactive forum with paper and poster presentations, and room for discussion. Authors give short talks about their contributions, which are followed by intensive discussions. Discussions are moderated by selected supporters, who prepare (critical) questions thus stimulating and guiding the discussion. The overall goal is to use the presented papers as starting point to enter the plenary discussion and shape the topics for interactive group discussions.

3 Contributions

The workshop received 9 submissions covering different topics in the field of software engineering education of which 6 submissions (1 full paper, 4 short papers, 1 poster) have been accepted and selected for presentation. The accepted papers address topics such as tool-support for automating parts of the education thus reducing effort, e.g. the automatic assessment of text exercises, and tool support for face-to-face teaching. Other topics are the use of essence in a software development course and teaching wearable device development with a dedicated toolkit. Furthermore, code process metrics in programming education and interdisciplinary system courses to teach agile systems engineering are discussed.

Marcus Deininger (HFT Stuttgart) starts the workshop with his keynote on approaches and experiences in higher education for software project practice. He discusses the aims of computer science education, which only partially meet the requirements of real life software development. Following the keynote, the authors present their papers and posters briefly to initiate the discussion. All authors additionally present their paper as posters in a dedicated poster session, which allows for building small groups discussing topics of interest.

4 Conclusion

The contributions to the workshop highlight innovative approaches in software engineering education and emphasize that education is an important research topic. This motivates for additional workshops in the future.

Acknowledgements