



ECSEE

European Conference
Software Engineering Education 2016

Georg Hagel, Jürgen Mottok (Editors)

Seeon Monastery

Germany

30th June and 1st July 2016

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**European Conference
on
Software Engineering Education

ECSEE 2016**

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**Organizer
Learning of Software Engineering - Registered Association**

**Research Partner
EVELIN Project
(Experimental Improvement of Software Engineering Education)**

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Preamble of the editors

Software Engineering (SE) is an important discipline and core part of almost all Computer Science curricula of universities. Challenges in today's software development include increasing system complexity, short development cycles, shorter time to market, continuous change, and expected high quality of the software. The rapid and continuing growth of the software industry creates challenges for software engineering education. The emergence of software engineering as a relevant term in the discipline of computer and engineering education programs created significant challenges for educators.

The European Conference on Software Engineering Education 2016 (ECSEE 2016) will give place and time for discussions on the following questions:

- Software engineering education has to deal with these challenges. How can students or employees be prepared to master these challenges?
- What are best practices to help them to work in different domains, ranging from app development for mobile devices to the development of really big applications for mainframe systems, from game development to working on highly secure systems?
- How can we support students in their student life-cycle and how can we prepare them for lifelong learning?
- How can we ensure that future software engineers meet industrial needs, with respect to technical as well as soft skills?

The conference will be rounded off by three keynote contributions:

- “On the Future of Educational Programming Environments – Ideas and Speculations”, Prof. Dr. Michael Kölling, School of Computing, University of Kent, in Canterbury, UK.
- “What can we learn from Software Engineering for Courseware Production”, Prof. Dr. Carlos Delgado Kloos, Universidad Carlos III de Madrid, Spain.
- “There is a System Out There! Software Education from Programming to Engineering”, Prof. Dr. Amir Tomer, Kinneret College on the Sea of Galilee, Israel.

The first ECSEE 2016 conference day will be completed by a conference dinner where we have the opportunity within a relaxed ambience to get together, exchange ideas, discuss and reflect on students work. Tobi Ostermeier and Tom Ditz will present a dinner speech in the form of impro-theater. They will analyse which conference topics of the ECSEE 2016 can form the basis for the improvised stories.

In conclusion we would like to express our gratitude to all partners and supporters of the conference. We want to express especial thanks to the involved colleagues who have undertaken to support the organisation of this conference and who have done a convincing review work. A collection of fruits in the academic work in software engineering education is given in this conference proceeding.

Kempton and Regensburg, May 2016

Prof. Dr. Georg Hagel, Prof. Dr. Jürgen Mottok
ECSEE 2016 General Chairs

Preamble from an educational perspective

Looking back at developments in “Experimental Improvements of Learning in Software Engineering” within the past two years and the many emerging contributions, as well as the discussion outside the project, which, inter alia, takes place at the “European Conference Software Engineering Education”, the perspective has focused on teaching and learning. At the first “European Conference Software Engineering Education” in 2014, a rather large number of papers addressed the question on how quickly changing requirements in an agile environment can be intercepted and taken into account in specialized higher education, to “produce” “on-demand graduates”. Meanwhile, the issue tends to concentrate more on didactics, as can be seen in the following developments:

- 1) The authors for the most part are not expecting direct casual effects or chain effects from their didactic preparations, changes and reflections anymore. There is an increased awareness towards the complexity of factors and aspects regarding interactions between personal, situational und attitudinal factors in higher education didactics.
- 2) Different monitoring and survey procedures, including the corresponding instruments, to assess the teaching-learning scenario (reflexive processes, competence assessments) during higher education lectures were developed to some degree. On one hand qualitative and quantitative oriented methods of different ranges evolved, on the other hand results are being interpreted more carefully.
- 3) It is clearly visible that Software Engineering Education involves a change of perspective in several regards. A didactic of software engineering includes a systematic handling of didactic questions, considering at least the students, the teachers, the contents, social forms, temporal and local conditions as well as methods and media equipment. The contents is – as shown – only one amongst many important aspects. Furthermore, the singular design of a teaching-learning arrangement on the meso level is neither a didactic concept nor a teaching methodology or a theoretical approach. As of today, the described tendency towards pedagogic-didactical facets is only selectively existent, but
- 4) nevertheless experts in software engineering do not consider this a loss of image but rather a gain and a necessary step. General didactic impulses as well as inter- and transdisciplinary discourses are regarded as an advancement.

While the itinerary of the conference in 2014 mentioned „a collection of fruits in the academic work in software engineering education is given in this conference proceeding“, it evolved into a fruit basket or a fruit still live in the meantime.

Without doubt, further steps were taken to improve software engineering lectures. The challenge for future years is the systematic review of singular “field trials” and their evaluations, the merging of results and the establishment of a theoretical reconnection and foundation. Only this allows a derivation of specific didactics for software engineering.

Regensburg, May 2016

Prof. Dr. Irmgard Schroll-Decker

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EVELIN (Experimental Improvement of Software Engineering Education)

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More information under www.evelinprojekt.de and www.qualitätspakt-lehre.de.



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Content I/II

Article	Page
Gamified Just-in-Time Teaching - A Conceptual Approach Based on Best Practice Alexander Bartel and Georg Hagel	1-17
Application of a Reflective Learning Approach in Software Engineering Magdalena Beslmeisl, Irmgard Schroll-Decker, and Juergen Mottok	19-33
JASM.IN – A Notional Machine for Novice Java Programmers Axel Boettcher, Anne Brueggemann-Klein, Raphaela Palenta, Veronika Thurner, and Daniela Zehetmeier	35-45
Project Oriented Learning within an Agile Atmosphere: An Emerging Pedagogical Development Hadas Chassidim, Dani Almog, and Shlomo Mark	47-54
What Makes a Good Task? Empirical Insights into Students' Point of View Paula Figas and Georg Hagel	55-60
Teaching Big Data Software Engineering: An Experience Report Ian Gorton, Matthew Bass, and Len Bass	61-74
The Benefits of Computer-Aided Simulation for Learning Enterprise-Resource-Planning Dominik Gruedl and Juergen Terpin	75-86
Research-Based Learning in an Advanced Software Engineering Course Andreas Kaemper, Axel Boettcher, and Thomas Koehler	87-99
CORE: An Intelligent Repository for Improving Software Engineering Education Michael Koch and Dieter Landes	101-113
ClickyEvaluation: A Step-by-Step Evaluator for Functional Programming Expressions Stefan Koegel, Joscha Cueppers, and Matthias Tichy	115-129
A Software Modelling Course at the Age of Three - An Application of Competence-Oriented Didactics Dieter Landes and Yvonne Sedelmaier	131-142

Content II/II

Article	Page
Teaching Model Driven Architecture Approach with the Sirius Project Ralph Maschotta, Sven Jaeger, and Armin Zimmermann	143-156
Extending the Family of Inductive Teaching and Learning Methods - Agile Teaching and Learning as Feature or Method? Rebecca Reuter and Juergen Mottok	157-167
Implementation and Evaluation of Teaching Strategies based on Learning Research in an Introductory Computer Science Course Stefan Rohr, Thomas Koehler, Andreas Kaemper, and Claudia Walter	169-184
Teaching Mutation Testing using Gamification José Miguel Rojas and Gordon Fraser	185-189
Teaching Scrum with Minecraft Ulrich Schaefer	191-195
Automatic Generation of Competency Profiles for Information Technology Jobs Based on Online Job Advertisements Using Text Mining and Statistical Analysis Andreas Schneider	197-207
A Study on Cognitive Deficits in Learning to Program Alexander Soska, Juergen Mottok, and Christian Wolff	209-214
Utilization and Effect of Narrative Art in Advanced Software Engineering Education Ramin Tavakoli Kolagari and Katja Auernhammer	215-229
A Metric-Based Point System for Grading Individual Performance in Software Engineering Projects Karsten Weicker	231-244
Do They Miss the Lectures? – Flipped Classroom Perception by Software Engineering Students from Australia and Germany Erica Weilemann and Philipp Brune	245-249
How Many Likes Can We Get for Logic? Exploring the Potential of Facebook for Enhancing Core Software Engineering Courses Anna Zamansky, Kiril Rogachevsky, Meira Levy, and Michal Kogan	251-255