Special Session
Learning Analytics in Engineering Education (LAEE)

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Abstract*—Learning Analytics is the measurement, collection, analysis, and reporting of education data with the goal to understand and optimize learning as well as the learning environments. Whenever learners interact with digital educational systems (meta-)data is generated, e. g. Moodle quizzes, assessment tools, retrieval of materials, or submission of solutions. This data is often not systematically used. By employing Learning Analytics techniques teachers and learners can get a deeper insight into their teaching and learning. This way students can monitor their own learning progress, personalized systems can be built, teachers can detect students that need special attention, and decision-making can be supported on different educational levels. The listed examples are not exhaustive. The goal of this special session is to provide a suitable forum for presenting and exchanging ideas, research questions and methods, results, and experiences with a special focus on engineering education.

***Keywords*—Technology-Enhanced Learning, Learning Analytics, Personalization, Recommendation, Assessment Analytics**

I. Overview

Not only since Corona, teaching and learning systems are used to present learning materials, to conduct quizzes, to collect and assess learners' solutions or, more generally, to support various teaching and learning activities. Every interaction with (educational) systems generates (meta-)data. Especially in the engineering education often different digital tools, simulations and, project work are used for practical and collaborative activities. The driving question here is how to systematically measure, collect, analyze, and report the results of these data to understand and optimize learning and teaching. Based on Learning Analytics it is possible to recommend personalized learning materials, detect students at risk, to conduct specific interventions, or to help students to make their progress in learning visible.

This Special Session (LAEE) within WEEF IFEES GEDC conference (https://weefgedc2021.org/), November 2021, Madrid, Spain, aims to cover all aspects of Learning Analytics with a special focus on engineering education. Contributions such as original research, practice reports, work-in-progress descriptions, and papers on completed student work and projects are welcome.

II. Target Group

This Special Session addresses interested stakeholders from academia, practice, and industry who develop, use, or research approaches and systems for Learning Analytics. People who plan to use learning Analytics and would like to inform themselves about the state of research are also invited to participate. With presentations and subsequent discussions, the Special Session provides a suitable forum for presenting and exchanging ideas, research questions and methods, results, and experiences.

III. Topics

Authors are invited to submit full papers for the LAEE special session (max. 10 pages in the IEEE style (A4) of the conference, https://weefgedc2021.org/index.php/conference/authors-and-call-for-papers). The topics cover all aspects of *Learning Analytics* including but not limited to

- Personalization approaches, adaptive learning
- Student diversity
- Assessment Analytics
- Recommendation of e.g. learning materials or learning partners
- Detecting students at risk
- Predicting learning success
- Dashboards and visualizations
- Technical Architectures
- Standards
- Legal privacy, social and legal aspects
- Ethics

IV. Important Dates

- Deadline for complete paper submissions:
  June 30, 2021 using
  https://www.conftool.org/weefgedc2021/
- Notification of paper acceptance:
  September 10, 2021
- Submissions final camera-ready papers:
  September 20, 2021
- Online authors and early registration deadline
  September 20, 2021
- Conference:
  November 15-18, 2021

V. PROGRAM COMMITTEE

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