

# Lecture Notes in Networks and Systems

Volume 326

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# Methodologies and Intelligent Systems for Technology Enhanced Learning, 11th International Conference

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# Preface

Education is the cornerstone of any society, and it serves as one of the foundations for many of its social values and characteristics. State-of-the-art and novel methodologies and technologies allow researchers, designers, and domain experts to pursue Technology Enhanced Learning (TEL) solutions targeting not only cognitive processes but also motivational, personality, or emotional factors. Nowadays, we can identify two main legs, providing necessary and complementary strengths to a TEL-oriented design process: Appropriate technologies should be applied, and appropriate methods should guide such application. Technologies in TEL can deliver smart, personalized, tailored, and motivating learning solutions. Methods come from different fields, such as psychology, medicine, computer science, and from diverse communities, where collaboration and co-working are used, such as maker communities and participatory design communities. In addition, learning analytics can help manage (big) data to augment learning opportunities for learners and educators alike, for instance, by supporting self-regulated learning or adaptation of the learning material.

As to these topics, the annual appointment of MIS4TEL established itself as a consolidated fertile forum where scholars and professionals from the international community, with a broad range of expertise in the TEL field, share results and compare experiences. The calls for papers of the 11th edition of the conference welcomed novel research in TEL and expand on the topics of the previous editions: It solicited work from new research fields (ranging from artificial intelligence and agent-based systems to robotics, virtual reality, Internet of Things, and wearable solutions, among others) concerning methods and technological opportunities, and how they serve to create novel approaches to TEL, innovative TEL solutions, and valuable TEL experiences.

The result of the call for papers is that both the main track of MIS4TEL 2021 and its related workshops (i.e., GaLePro, Nursing, and TEL4FC) contribute to novel research in TEL and expand on the topics of the previous editions. This volume presents the papers that were accepted for the main track of MIS4TEL 2021 and the related workshops.

The papers related to the main track discuss how diverse methods or technologies are employed to create novel approaches to TEL, valuable TEL experiences, or innovative TEL solutions. Several papers acknowledge novel challenges, e.g., due to the COVID-19 pandemic, and address them with novel TEL solutions, e.g., for assessing student's work, monitoring group dynamics, or engaging children in learning at a distance. Other papers include in the TEL process participatory research methods, such as action research, or novel technological approaches, such as gamification, augmented reality, or virtual reality. Finally, several papers take a critical stance toward technology (e.g., by considering age and gender issues) or aim at promoting critical reflections in TEL (e.g., by soliciting students' reflections). All papers underwent a peer-review selection: Each paper was assessed by three different reviewers, from an international panel composed of about 50 members from 18 countries. The program of mis4TEL 2021 counts 12 contributions from diverse countries. The quality of submissions was on average good, with an acceptance rate of approximately 70%.

The conference program also features three selected workshops, which aim to provide participants with the opportunity to present and discuss novel research ideas on emerging topics complementing the main conference. In particular, the workshops focus on multi-disciplinary and transversal aspects such as TEL in nursing education programs, social and personal computing for Web-supported learning communities, interactive environments, and emerging technologies for eLearning, besides TEL for future citizens. A total of 15 quality papers, with authors coming from various countries from Europe, Asia, and America, have been selected for the workshops and included in the present volume.

We would like to thank all the contributing authors, the members of the Program Committee, the reviewers, the sponsors (IBM, AEPIA, APPIA, and AIR Institute) and the Organizing Committee for their hard and highly valuable work. Thanks for your help—MIS4TEL 2021 would not exist without your contribution.

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