Preface

With great pleasure, we publish the Proceedings of the 2nd Systems of Assessments for Computational Thinking Learning workshop (TACKLE 2019), co-located with the 14th European Conference on Technology Enhanced Learning, which took place 16-19 September 2019 in Delft, Netherlands.

Computational Thinking is considered a set of skills that are to be acquired and developed by everybody, both in the context of STEM and other subjects. In terms of learning assessment and evaluation, the fact of being a combination of skills represents a significant challenge to construct a precise definition of an effective strategy, which is of paramount importance to incorporate Computational Thinking in curricula.

There is general agreement that systems of assessments are instrumental to obtain a comprehensive assessment of Computational Thinking learning. These systems shall combine different types of complementary tools to integrate multiple approaches and measure cognitive, social, and programming skills and attitudes. Besides technical skills, other skills need to be evaluated, for instance critical thinking, creativity, communication, and collaboration.

The Second Workshop on Systems of Assessments for Computational Thinking Learning (TACKLE 2019) aimed at providing the opportunity to the Technology-Enhanced Learning (TEL) researchers to discuss and share their ideas on Computational Thinking assessment. Moreover, the workshop wanted to facilitate interdisciplinary collaboration among the participant researchers: Computational Thinking assessment needs to include not only technical and domain-specific skills but also domain-independent meta-skills.

The papers included in this volume explore this subject from different perspectives. They introduce different approaches to collect and combine pieces of evidence about the development of Computational Thinking skills. In particular, the presented papers analyze the results of the Bebras challenge and the presence of bad smells in Scratch projects. Moreover, an automated system and a Software Engineering approach are discussed in two separate contributions. To provide the reader with a pedagogical point of view on the topic, we also include an invited paper, the focus of which is on how to assess Computational Thinking in primary school first year by considering the specific pedagogical aspects of this context.

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