

Call For Papers

Data Capture and Analysis to Support Learning Engagement

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Description:

Data capturing is one of the fastest growing segments in many different fields and Education is no exception. In this context, learning experiences lend themselves to a wide spectrum of techniques and approaches ranging from technologies to track online behavior to technologies to track physical behavior and biosignals such as eye and gaze tracking, location-based tracking, galvanic skin response, heart rate, electroencephalograms, etc. Moreover, the ubiquitous use of smartphones and wearable devices equipped with sensors and trackers open an unprecedented number of possibilities to collect data while students participate in a learning experience.

Besides the well-established log-based tracking and video screen capture, the explosion of these new tracking technologies and quantified self-devices requires the exploration of new perspectives for research on the design of learning support systems. In principle, capturing and analyzing what learners do may derive into knowledge that designers and instructors can use to increase their understanding of the learning process and use it to better support learning in its different aspects. However, the area still needs to explore how to translate large amounts of data into meaningful and actionable knowledge.

This special issue is focused specifically on learner engagement, one of the most relevant topics in the field of technology-enhanced learning and educational psychology. Despite the different ways of conceptualizing and measuring engagement, research shows that several benefits arise when students are engaged in their own learning. This special issue aims to investigate how to connect these two contexts: the potentially comprehensive data capture with methods and approaches to support engagement, including methods to characterize engaged and disengaged behaviors, determine levels of engagement, understand what triggers and promotes student interest and engagement, explore the effect of engagement on short term and long term student success, study the effect of instructional design on engagement, and the effect of conceptual and social engagement to sense making and learning.

The unique challenges and opportunities associated with the use of available tracking technologies in the educational domain make this topic deserving of a special issue in the IEEE TLT journal. Although past special issues covered learning analytics, tracking technologies and even engagement, the specific theme of how to use insights from captured data to support and enhance learning engagement is still uncovered and an open question. Thus, in this special issue, we solicit papers covering recent trends and proposing new foundations to improve learning engagement in the presence of a wide diversity of data obtained with novel tracking technologies. The topics of interest include, but are not limited to:

- How to exploit tracking technologies to increase user engagement in learning processes
- Adaptation strategies to boost engagement
- Learning analytics and information visualization of captured data to take decisions aimed to foster engagement
- Measuring and monitoring student engagement to support effective interventions
- Combining quantitative and qualitative analysis to evaluate engagement
- Impact of the physicality (embodied cognition, improving motor skills...) in learning engagement
- Combination of different tracking technologies and sensorial modalities to detect and improve learning engagement
- Impact of personalization based on data from tracking technologies in learning engagement
- Self-tracking technologies and lifelogging for reflexive learning and engagement

Contributions to this special issue are encouraged from both academia and industry to provide a theoretical and practical view of challenging perspectives on tracking and learning technologies aimed to improve engagement. Both design/development and test/evaluation can be well-addressed by the special issue topic. We also look for a theoretical/psychological paper focused on the human side of the topics addressed. In addition, we would like to have a survey or tutorial paper that introduces the field. Authors interested should contact the editors in order to agree upon and distribute the work.

Submission and Review Process:

1. Authors must send an initial proposal of paper (title, authors and abstract) directly to the editors of the special issue by e-mail (ilaria.torre@unige.it; ocsantos@dia.uned.es; abelardo.pardo@unisa.edu.au). The editors will pre-screen the proposals for relevance.
2. After receiving an initial acceptance from the editors, a full paper should be submitted to the IEEE TLT manuscript system (<https://mc.manuscriptcentral.com/tlt-cs>, by selecting the proper special issue name) to experience a regular peer review process.

Full manuscripts should be prepared in accordance with the IEEE Transactions on Learning Technologies guidelines (<http://www.computer.org/portal/web/tlt/author>) and they should not be published or currently submitted for publication elsewhere.

Schedule:

- Proposal submission (abstract): October 1, 2018
- Initial notification to authors: October 30, 2018
- Full manuscripts: February 1, 2019
- Completion of first review round: May 1, 2019
- Revised manuscripts: July 1, 2019
- Final decision notification: September 1, 2019