

Introduction to the Minitrack on Learning Analytics at HICCS 2022

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Learning analytics (LA) has made a substantial and lasting impact on research and practice in learning and teaching. Because of the vast amounts of data that is generated and gathered through the use of interactive learning environments and learning management systems within educational settings, there is an opportunity to develop data driven understandings of learning and teaching processes [1, 2, 3]. More recently, the need for direct involvement of educational research in learning analytic has been acknowledged as a first fundamental pillar of learning analytics to scaffold the research, i.e. to determine which learning theories should be investigated so that appropriate data can be collected and analyzed. The second pillar, capturing, refers to finding evidence of learning, by identifying and explaining useful data for analysing and understanding teaching, learning, and developing methods that capture and model learning. Then, understanding is associated with how learning theory is informed by large-scaled data analysis, as well as the use of data science techniques to understand specific aspects of teaching and learning. The final pillar is the impact on learning and teaching by providing decision support and feedback based on LA, such as through dashboards and early-alert systems and personalised and adaptive learning.

However, some things cannot be planned. During the past two years, we have witnessed a rapid shift towards blended and distance learning, involving an almost overnight adoption of the necessary technology as the pandemic forced academic institutions to close their doors and move activities online. The consequences of this transformation are still unknown both in the short and the long term, such as the effects on learning and teaching strategies in e.g. (partially) online settings. Only time will tell what the true impact will be, what the real benefits and serious pitfalls are, as well as the difficulties we must overcome. Although little is yet known about the implications of emergency remote teaching (ERT) during the pandemic, the first insights provide important implications for teachers and students

alike as the new normality manifests itself [4, 5, 6].

For this mini-track, we welcomed papers that address, reflect on, and relate to, the four pillars of learning analytics and datafication in educational settings alongside papers that reflect on changes in learning platforms, teaching practices, learning practices, and student profiling. Research on the effects of the pandemic on teaching and learning and the shift towards the new normality were particularly encouraged. In addition, we called for papers analyzing teaching and learning behaviors through learning management systems (or learning platforms) through data-driven approaches, qualitative approaches, and mixed methods. Our interest extended to papers that shed light on the type of data that is required to improve teaching and learning in different levels of education, how data can be used to better understand, and improve, the educational environment, as well as to papers discussing qualitative research on teaching and learning, where data is used to support these processes. We were interested in papers that take the point of departure from the teacher's side, or a student perspective, as well as from the intersection between the teachers' and the students' practices. In addition to that, the papers could take on challenges and benefits for management, operations, practice or research.

One paper was eventually accepted to the mini-track. In the paper *Exploring study profiles of Computer Science students with Social Network Analysis*, the authors created a student social network using 273 responses to an online survey [7]. They discovered and analyzed the biggest communities to identify the factors that characterize the learning strategy and preferences of undergraduate computer science students.

Since learning analytics has become more relevant before and we received a high number of submissions in previous years, we were surprised by a greatly reduced number of contributions to our track. We believe that the low number of submissions we received might partly be due to the immense workload that educators are experiencing as a consequence of the pandemic and

ERT. The impact is not yet fully understood, but remains an open research direction for the mini-track in the coming years. There is so much more exciting to discover linked to learning analytics!

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