Supporting Digital Infrastructures with Learning Analytics

Daniele Di Mitri
DIPF | Leibniz Institute for Research and Information in Education
dimitri@dipf.de

ABSTRACT: With the spread of the COVID-19 pandemic, the majority of educational institutions have had to move their courses online. In most institutions, emergency teams have been established to cope with the unprecedented mission of moving most of the education online. Online learning, however, does not equal emergency distance teaching. Robust digital infrastructures must be set in place when online teaching is blended with a physical presence. Video conferencing tools have become a wide-spread practice for online communication and collaboration. However, many small and medium educational institutions still lack adequate digital infrastructures to support their online learning initiatives including hardware, learning management, safe cloud storage, intranet channels for internal communication, netiquettes and privacy-preserving policies. In this challenge, we will investigate the role of Learning Analytics in supporting the development of renewed Digital Infrastructure.

Keywords: multimodal learning analytics, wearables, smartwatches, sensor-based learning

BACKGROUND

The Covid-19 pandemics has affected every educational institution worldwide. The distance teaching model introduced with the effects of the school closures is likely to continue in the following months. Hybrid forms of teaching and learning which mix both classroom learning and home learning is considered to continue in the future. The emergency led to the opportunity for many educational providers to reimagine the classical teaching methods and introduce digital technologies in the educational process. In a recent report, Educational International has warned how the global education industry, composed of large technology companies and private investors, is capitalising on the education crisis proposing long-term solutions to education providers (Williamson & Hogan, 2020). The school closures and the introduction of distance teaching are also considered to magnify the digital divide, especially among the minority groups which do not have equitable access to digital equipment (Ong, Paul, 2020). Such a digital divide is caused not only by the lack of digital devices or poor internet access but also by the lack of digital skills, for example by parents that are unable to help their children in accessing online education (Fleming, Nic, 2021). Only a small fraction of well-established educational institutions, especially higher education institutions, were technologically prepared for a disruption of this size in education. The vast majority of institutes, schools and smaller educational providers were not prepared with adequate digital infrastructure. Such digital infrastructure includes for example dedicated ICT departments at disposal for students and teachers, digital devices to land to the families in need; centralised learning management systems for facilitating the course content and interaction; secure cloud storage for the educational content, assignments and digital artefacts; institutional emails for every teacher and student and privacy-preserving channels for communicating and for video conferencing; etc. These tools can be considered as the

digital structure of the modern classroom. In most cases, this structure has been missing or has been improvised.

2. RESEARCH QUESTIONS

By proposing this challenge to the 7th Learning Analytics Hackathon, we aim to collectively find an answer to the following research question.

How can the Learning Analytics research community support the educational providers to improve their digital infrastructure for the provision of high-quality education?

3. EXPECTED OUTCOME

We want to create an online laboratory for discussion and for brainstorming how the scientific community can support current educational endeavours. The expectation is to come up with a research agenda for Learning Analytics research, which can better tackle the more disadvantage groups and institutions to support them with the provision of high-quality education.

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