Use of Learner Engagement Analytics to empower medical educators to make data-informed decisions

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Presentation abstract

Learner Engagement Analytics (LEA) has enabled Higher Education Institutions (HEIs) to identify learners who are not engaging with their studies and provide targeted support and help (Naeem and Bosman, 2023). It has also allowed educators to make data-informed decisions to inform their curriculum design and classroom practice (Cogliano et al., 2022). The LEA data is captured from a wide range of sources related to teaching and learning which offer meaningful insights into a learner's learning habits (Eady et al., 2021). Previous research suggests that providing learning analytics to educators in Higher Education Institutions can improve learning outcomes for students (Aslan et al., 2019).

At Queen Mary University of London, a multidisciplinary team was formed of medical educators, LEA experts, learning technologists, and learning innovation professionals to investigate how LEA can inform curriculum redesign in the early phase of the medical curriculum. Through a series of scholarship meetings on LEA using data dashboards from the Virtual Learning Environment (VLE), the team analysed learners' engagement with the virtual pre-sessional resources. The VLE interactive resources were designed to allow medical learners to develop clinical interpretation skills during practical sessions, as recommended by the General Medical Council (GMC, 2018). However, medical educators lacked the metrics to evaluate learners' interaction with these virtual resources. Therefore,

it was inevitable to train educators on how to use LEA to optimise students' learning. The team assessed the learners' engagement on the VLE, quantified engagement scores, and evaluated the results against key outcomes, including the learners' performance. The LEA data offered further insights into virtual engagement across multiple modules in the medical curriculum. Effectively, the outcome of this work empowered medical educators to make informed decisions regarding the future use of VLE resources in curriculum design and develop virtual resources to increase students' engagement and enhance their learning.

Keywords: learner engagement analytics; student engagement; virtual learning environment; medical education; curriculum design.

Community response

Post-pandemic higher education has arguably undergone significant changes to its mode and focus, with much greater use made of the online space and a recognition that student engagement, however conceptualised, is a vital factor for retention and achievement (see, for example, Brown et al., 2022; Veluvali and Sarusetti, 2022; Li and Xue, 2023). However, new issues arise when those two factors are combined: how should we best direct our energies? Are we having the impact on student learning we hope to? Are we working in a void?

This presentation was valuable because it provided a route to answering some of these questions via 'data-informed decision-making' and, maybe even more importantly, by bringing together all the key people involved in curriculum design and delivery. By tracking learning analytics through a VLE, it becomes possible to describe students' engagement with different resources, highlighting which ones are preferred, ignored, or uncompleted. This can inform educators' curriculum design decisions for the VLE to maximise engagement, empowering staff as it dispels the fear of the void.

There are other benefits to using LEA. One delegate noted that:

> LEA also has the capacity to support educators in keeping students motivated and on-track with engaging with online learning. I've known of one academic sending

positively phrased emails to their students with some LEA data summary and encouraging them to keep going.

The presenters confirmed that the LEA data triggers contact with the student should their engagement drop below a certain level, and the course leader may follow up with an email or a meeting to ensure that there are no underlying issues and provide reassurance where necessary. Some might be surprised by this contact, but for most it is not unexpected. Hence, it is vital in these circumstances that the qualitative and the quantitative work hand in hand so the educator can make the best use of all the information available. Although it might seem sometimes that higher education is run exclusively according to 'metrics', using this data to create opportunities for some human contact is the most valuable approach to take.

Next steps and additional questions

Design thinking is becoming a significant factor in education (McLaughlin et al., 2022), and engagement needs to be designed as with any aspect of curriculum. Before doing so, the following questions must be asked: what constitutes engagement? Although that is a huge question, it is easiest to consider it in light of what might be the markers for such engagement. Partly, that will come down to what is available to act as a marker – is a quiz enough, or an H5P activity? The CRUD acronym (Shao, 2023) is a great place to start in planning what this could look like.

Authors' reflection

Educators should rethink the traditional norms often held on students' engagement in light of the complexities and new reality of post-pandemic higher education. For example, a proposed model by Whelehan (2020) invites students not only as partners but also as strategic developers to promote engagement at the institutional level. While it might be difficult to reach a definitive consensus on what constitutes true engagement, leaving this high-stake component of the curriculum without any metrics creates unfavourable outcomes for all stakeholders. In this regard, the use of Learner Engagement Analytics allows critical examination of what constitutes a signature of student engagement in the learning environment. LEA provides direct and invaluable insights to maximise academic potential, refine teaching and learning practices, and feed into quality assurance

processes. It also enables educators to invest their limited time and resources to optimise the elements of engagement that have an established impact on attainment and progression. This evidence-based and iterative approach can enrich the current debate on what constitutes authentic engagement. However, the outcomes of LEA should be critically scrutinised and coupled with qualitative data, reflective practice, and inclusion of students' voices and perspectives to ensure educators promote and curate a student-centred learning environment. The community response pointed out interesting remarks including how to consider using Design Thinking (DT) pedagogy to complement the current problem-solving framework in higher education. This pedagogy is desirable to solve a complex problem such as student engagement more sustainably and equitably. How LEA can fit into this picture is a question that has to be investigated further.

LEA can assist institutions in identifying learners who may be disengaging from their studies and providing support to help them re-engage. LEA data in the form of learner-friendly dashboards can be used by learners to reflect and self-regulate their learning. LEA is an invaluable tool for educators, empowering them to make data-driven decisions to enhance their curriculum design and classroom practice. However, many educators are unaware of where to start or how LEA can be used to improve their practice. Hence, further work needs to be done across the sector in this area to empower educators.

Acknowledgements

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