Implementing learning analytics and learning design at scale: Lessons from the Open University UK

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All papers referred to in this presentation can be accessed via

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My aims with you today

1. How the number of student enrolments in Open University, UK, has changed before/during/after COVID-19?
2. How learning analytics has become important during/after COVID-19?
3. Research trends and future directions of learning analytics research
Largest University in Europe

38% of part-time undergraduates taught by OU in UK

196,131 formal students

No formal entry requirements

55% of students are 'disadvantaged'

33% enter with one A-level or less

66% of new undergraduates are 25+

60% FTSE 100 have sponsored staff on OU courses in 2017/8

1,300 employers use OU learning solutions to develop workforce

1 in 4 Open University students has a disability (50,408)

3 in 4 Students are already in work
What we have learned in 10 years in terms of benefits of LA?

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<tr>
<th>Learners</th>
<th>Faculty</th>
<th>Institutions</th>
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<tr>
<td>Enhance engagement of students</td>
<td>Enhance assessment services</td>
<td>Identifying target course</td>
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<td>Personalization of learning</td>
<td>Get a real-time feedback</td>
<td>Improve learning design</td>
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<td>Enrich personalized learning</td>
<td>Understand students learning</td>
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<td>environments</td>
<td>habits</td>
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<td>Increase self-reflection &amp; self-</td>
<td>Monitoring students’ activities</td>
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<td>awareness</td>
<td>Provide warning signal</td>
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<td>Parents (Monitoring students’</td>
<td>Improve instructor performance</td>
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<td>activities)</td>
<td>Get a deeper understanding</td>
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<td>Identify knowledge gaps)</td>
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Case-studies included from Arizona State University (USA), Dublin City University (IRE), Georgia State University (USA), Northern Arizona University (USA), New York Institute of Technology (USA), The Open University (UK), Open Universities Australia (AUS), Purdue University (USA), Rio Salado College (USA), Sinclair Community College (USA), Tecnológico de Monterrey (Mex), University of Alabama (USA), University in Ankara (TUR), University of Maryland (USA), University of Michigan (USA), University of Wollongong (AUS)

1. Support access and inclusion
2. EDI

1. Improved pedagogical awareness
2. Improved data literacy and confidence
3. Driver for change based upon evidence

1. Identify good practice/teachers/modules
2. Alignments between modules/qualifications
3. Indications of good practice between/across institutions

What we have learned in 10 years in terms of benefits of LA?

- Enhance engagement of students
- Personalization of learning
- Enrich personalized learning environments
- Increase self-reflection & self-awareness
- Parents (Monitoring students’ activities)
- Enhance assessment services
- Get a real-time feedback
- Understand students learning habits
- Monitoring students’ activities
- Provide warning signal
- Improve instructor performance
- Get a deeper understanding teaching/learning
- Researchers (Increase efficiency Education & serious games, Identify knowledge gaps)
- Identify target course
- Improve learning design

- Improve learning outcomes
- Increase in students adaptivity
- Make efficient interventions
- Get a real-time insight
- Modify content for students’ desire
- Predicting student performance
- Improve teaching strategy
- Sources recommendation


331 OU papers on Learning Analytics can be found here: https://tinyurl.com/2p892rf2
What we have learned in 10 years in terms of challenges of LA?

1. **Ethics and privacy.** Various questions arise here, e.g., who has access to the data and personal information, how long it is kept, how much data is safe and who owns the data.

2. **Scope and quality of data.** Questions that arise include how much data should be collected, how much data should have variety, what type of data has value for learning and how much reliable predictions can be made.

3. **Theoretical and educational foundations.** There is a lack of attention to learning and teaching theories. LA should be based on pedagogical and epistemological assumptions.

4. **Research.** More research is needed to establish the foundations of LA (Dollinger & Lodge, 2018).

5. **Practice.** There is a lack of transference of LA theory to practice (Dollinger & Lodge, 2018). A user center design methodology as well as include the final user in the design process is needed to develop LA systems and applications (Domínguez F et al., 2020).

6. **Institutions.** It is essential to align the points of view of researchers, educators, learners, educational technologists and administrators regarding LA (Leitner & Ebner, 2019).

7. **Measurement of impact.** It is well known that LA can impact students learning by supporting teaching and learning strategies (Knight, Gibson, & Shibani, 2020).

**OU #1 in Europe, #2 in world**

**Data Governance**

**Actual adoption and sense making**

**LA embedded in design and practice**

**Good evidence within a module, more needed across qualifications and diversity**

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What we have learned from large scale adoption of predictive learning analytics at the OU (2014-2023)


Amongst the factors shown to be critical to the scalable PLA implementation were: Faculty's engagement with OUA, teachers as “champions”, evidence generation and dissemination, digital literacy, and conceptions about teaching (online).
We estimate that an increase in usage of just 10 per cent a year could improve pass rates by an estimated 2 per cent.

Please do make use of it, but also give us your feedback so we can continue to improve how it works.

Prof Tim Blackman, Vice Chancellor The Open University, 11 November 2022
https://www.youtube.com/watch?v=Lir6ThLg6bM
- Eye-tracking combined with think-aloud protocol of experienced teachers using PLA
- Most teachers comfortable with main dashboard, but worried about ethics/data
- Some erroneous interpretations and sense making of actual data
- Uncertainty about what options to address identified issues

“Research on the relationship between learning design and learning analytics has also been a focus in European research in recent years. For example, in their research at the Open University UK, Toetenel and Rienties combine learning design and learning analytics where learning design provides context to empirical data about OU courses enabling the learning analytics to give insight into learning design decisions. This research is important as it attempts to close the virtuous cycle between learning design to improve courses and enhancing the quality of learning, something that has been lacking in the research literature. For example, they study the impact of learning design on pedagogical decision-making and on future course design, and the relationship between learning design and student behaviour and outcomes (Toetenel and Rienties 2016; Rienties and Toetenel 2016; Rienties et al. 2015).”
69% of what students are doing in a week is determined by us, teachers!
SOCIETY FOR LEARNING ANALYTICS RESEARCH

The Society for Learning Analytics Research (SOLAR) is an interdisciplinary network of leading international researchers who are exploring the role and impact of analytics on teaching, learning, training and development.

ABOUT KYOTO UNIVERSITY

The local host of LAK24 is Kyoto University which is the second-oldest Japanese university, one of Asia’s highest ranked universities and one of Japan’s National Seven Universities. One of Asia's leading research-oriented institutions, Kyoto University is famed for producing world-class researchers, including nine Nobel Prize laureates, two Fields medalists and one Gauss Prize winner. Kyoto University promotes itself as an academic institution harnessing a “spirit of freedom”.

LAK24 UPDATES

Dear Learning Analytics Community,

We write to inform you that the SOLAR Executive Committee has made the difficult decision to cancel the in-person component of LAK24 scheduled for March 18 - 22, 2024.

To view the formal announcement from BALL Members, SOLAR President on behalf of the SOLAR Executive Committee regarding a change in the LAK24 conference format, visit:
https://www.solaresearch.org/events/lak24/lak24-news/

https://www.solaresearch.org/
Next steps

1. How to use AI to identify common design patterns by teachers?

2. How to use AI to semi-automate some of the design and LA decisions?

3. How to use AI to provide automatic recommendations of TLA activities

Ooh yeah, and what about the role of educators and students?
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質問はメールで受け付けます
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