

The 4th LAK InnovateDesign Workshop: Evaluating the Quality of Learning Design of Courses and Curricula

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ABSTRACT: This workshop is fourth in the series of InnovateDesign workshops, which have introduced the LAK community to the innovative concept of learning design (LD) and a complimentary tool for creating and analyzing LD, provided a platform to discuss AI's role in LD, as well as the intersection of learning analytics (LA) and AI-supported LD. To provide a background for a further discussion on LD, LA and AI, editors of the special issue of the International Journal of Educational Technology in Higher Education will give an overview of the research presented in the special issue. After that, examples of LDs of courses and a study program will be presented to demonstrate and encourage discussion on the possible use of LD data. The discussion will include, for example, the use of LD data to analyse learning paths and patterns, and recognize the quality of LD, both on the level of a course and a study program (curriculum analytics). Finally, participants will do some hands-on work in the LD tool and provide their feedback. This half-day, in-person workshop is a collaborative effort by four esteemed universities from Europe, Australia and USA.

Keywords: learning design, learning analytics, curriculum analytics, artificial intelligence, quality of learning design

1 INTRODUCTION AND BACKGROUND

There are different definitions of learning design (LD), defining it as “the documented design and sequencing of teaching practice” (Lockyer et al., 2013, p. 1439), describing the order of learning tasks, resources and related support. Moreover, it is explained as a methodology helping teachers and designers in making informed decisions pertaining to the design of learning activities (Conole, 2013), that is “pedagogically informed” and effectively uses resources and technologies.

While the quality of LD encompasses various aspects, a crucial one is its pedagogical soundness and validity of assessment. To ensure this, it is essential to develop LDs abiding by the principle of constructive alignment (Biggs, 1996) between intended learning outcomes (LOs), teaching and learning activities (TLAs), and assessment (Divjak et al., 2024) and pay attention to the respective student workload. This is also crucial if we want to develop and conduct learning analytics (LA) that make pedagogical sense, otherwise methodologically sound analyses, which are based on pedagogically unsound LD, can lead to results of doubtful usefulness. To achieve this pedagogical soundness of LD, we can use insights from design analytics (Divjak et al., 2022; Divjak et al., 2023). So, LD and LA are connected on different levels: sound LD is a prerequisite for meaningful LA, and LA (design analytics) can contribute to the soundness of LD. LA has therefore been increasingly used to support LD (Rienties

et al., 2017), and the emergence of Generative AI has brought new opportunities and challenges. To provide a background to the discussion on LD and LA in the AI era, as part of the workshop, editors of the dedicated special issue of the International Journal of Educational Technology in Higher Education (ETHE) will present the research included in the special issue.

Dedicated to the principles of sound LD and aiming to exploit the potentials of LA, since 2020, an LD concept and a web-based tool have been developed, presented to the LAK community as part of preceding InnovateDesign workshops. The Balanced Learning Design Planning (BDP) concept and tool build on the current research, theory and practice related to LD, and the existing LD concepts, primarily the OULDI approach by the Open University UK (Conole, 2013; Rienties et al., 2017), and the ABC LD approach by the University College London (Laurillard et al., 2013). It also introduces a great amount of innovation, with continuous updates reflecting state-of-the-art technological advancements, introduced in the design cycle process.

The BDP concept and tool enable linking course LOs with the study program LOs, providing an institutional perspective, which is valuable as research has indicated that students benefit from long-term study program-level planning (Raković et al., 2022). The BDP tool focuses strongly on ensuring constructive alignment between LOs, types of TLAs, assessment, feedback and student workload, supporting a student-directed approach (Divjak et al., 2024). It provides rich analytics of course LD which can be used to further improve LD, in line with the intended - preferably innovative - pedagogical approaches (e.g., problem-based learning, flipped classroom, AI-related). In particular, it offers detailed analyses and visualizations of assessment, minding its alignment with the prioritization, level and weights of LOs. The analytics are provided in real-time, through a dedicated dashboard, and can be used as a valuable input directing the LD process. Furthermore, the tool enables collaborative work and sharing of LDs, as well as the export of LDs. Here, one of the latest and most advanced export functionalities enables the scaffolding of a course designed in the BDP tool automatically in the Moodle LMS, providing a high practical value in course preparation. Finally, the latest developments are related to an AI assistant in LD (Divjak et al., 2025) and extended functionalities for curriculum analytics. So far, the BDP tool has been used in the design of more than 2600 courses and MOOCs, by over 2500 users from more than 50 countries. The ample data collected in the system has motivated further research based on the LD data, extending LA beyond the current possibilities of the tool, and opened the question of how LD data can be further used to improve teaching in learning.

In this vein, some of the current research will be presented, relating to learning paths and patterns in LD. There is a distinction between designed and enacted learning paths. On the one hand, designed learning paths are developed during LD, supported by the use of tools such as the BDP. They represent ideal or recommended sequences of TLAs, grounded in pedagogical theory (Divjak et al., 2022). On the other hand, enacted learning paths appear during implementation, while learners interact with their digital environments. They emerge from LMS data and can deviate from LD, reflecting learners' needs and strategies (Raj & Renumol, 2024). Comparing designed and enacted learning paths can have useful implications on the quality assurance of LD, on both course and study program level. Repeated sequences in learning paths can highlight learning patterns in LD, providing insights into common teaching and learning practices.

Furthermore, LD data can provide actionable insights related to curriculum analytics, as a subfield of LA. Curriculum analytics involves the systematic collection, analysis and visualization of curricular data

to inform study-program level decision-making and continuous improvement. It provides scalable methods to track and visualize development of students' competences and their acquisition of learning outcomes across the study program (Barthakur et al., 2024; Divjak et al., 2025). Curriculum analytics can be used to identify gaps, redundancies, and misalignments in curricular content, improve curriculum mapping and alignment with program-level outcomes, monitor student progression and performance across courses, support evidence-based curriculum learning redesign, quality assurance and reaccreditations and strategic-level KPI monitoring.

As part of the workshop, concrete examples of courses and study program LDs developed in the BDP tool will be presented, and hands-on experience enabled, to foster discussion on the possible uses of LD data to improve different aspects of LD quality.

2 LEARNING OUTCOMES, WORKSHOP STRUCTURE AND WEBSITE

In the workshop, the participants will (1) be presented with the research included in the ETHE special issue on LD, LA, AI and decision-making, as the background for further discussion; (2) get insight into examples of course and study program LDs developed in the BDP tool; (3) discuss the possible further uses of LD data in LA; and (4) take part in hands-on activities. The half-day workshop, organized in cooperation of four universities, will be held face-to-face, consisting of the parts presented in the table. The expected number of participants is between 12 and 30. Participation in previous workshops is not a prerequisite for this year's session.

Table 1. The proposed agenda of the workshop

Duration	Description	Responsible
10 min	Introduction	Organizer 1
30 min	Overview of the ETHE special issue	Organizer 1, 3
20 min	Showcasing: good examples of LD	Organizer 1, 3
30 min	Discussion: use of LD data (part 1)	Organizer 1, 2, 3, 4
30 min	<i>Coffee break</i>	
30 min	Current research using LD data	Organizer 1, 2, 3, 4
50 min	Discussion: use of LD data (part 2) & hands-on activities	Organizer 1, 2, 3, 4
10 min	Feedback, future steps and conclusions	Organizer 1, 2, 3, 4

The workshop will be supported by a dedicated website, where all related information will be shared, and which will support pre-workshop data gathering and planning, including the application of participants. To advertise the workshop to participants, we will use the workshop and SoLAR websites, and social media. After the workshop, the website and the social media will be used to support ongoing dissemination. The website will include the following sections: About, Background, Literature and Material, Workshop Agenda, and Submission Area.

3 SHARING OF RESEARCH AND HANDS-ON ACTIVITIES

The workshop will start with a few short presentations by the workshop organizers and ETHE editors, focusing on the current research, practices and experiences in the use of LD, complemented by interactive showcases of selected course and study program LDs. The following part of the workshop will be focused on the discussion about how we can use LD data to gain further insights and improve

teaching and learning, with a presentation of examples related to analysis of learning paths and curriculum analytics. Participants will also get an opportunity to do some hand-on activities related to course and study program LD and share their experiences and research results.

4 FUTURE STEPS AND CONCLUSIONS

Finally, the participants will be asked to take part in the evaluation of the concept and the workshop, prepared in line with the approved research protocol (ethically approved by one of the workshop organizers' universities). The conclusions of the workshop will be shared with the participants after the workshop. There will be a possibility to establish further collaboration to work on a project and/or a publication. All participants will be able to continue using the BDP tool, as well as share it with their colleagues, free of charge.

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