# Reimagining Learning Analytics

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The SoLAR LA Task Force invites feedback from the learning analytics community on the Draft LA Definitions and Draft Scope sections below. For background reference, the rationale for this endeavor is provided. Two possible revised definitions of LA are provided for your consideration.

## Rationale

Learning analytics is both an academic field and a field of educational practice which has taken rapid shape over the last decade. As a research and teaching field, Learning Analytics sits at the convergence of **Learning** (e.g. educational research, learning and assessment sciences, educational technology), **Analytics** (e.g. statistics, mathematics, visualization, computer/data sciences, artificial intelligence), and **Human-Centered Design** (e.g. usability, participatory design, sociotechnical systems thinking).

It was first defined in 2011 as follows:

> *Learning Analytics is the measurement, collection, analysis and reporting of data about learners and their contexts, for purposes of understanding and optimising learning and the environments in which it occurs.*

After 15 years it is timely to revisit the definition to ensure that it still holds true as the field has grown alongside other advancements. It has become increasingly difficult for authors and reviewers of the Journal of Learning Analytics (JLA) and the International Learning Analytics and Knowledge Conference (LAK) to fully determine what is in or out of scope in journal and conference submissions.

To address this, SoLAR established a Task Force to gather community input and reimagine Learning Analytics (LA) and revisit the 2011 definition of LA. Given our field's significant growth and evolution, we aim to ensure that the definition remains relevant and inclusive. This initiative responds to the increasing challenge of streamlining what falls within the scope of Learning Analytics for our journal and conference community.

# LA Proposed New Definition

The following possible definitions of learning analytics are offered for your consideration:

1. Learning analytics is a human-centered, multi-disciplinary endeavor focused on closing the loop between data and stakeholders through the collection, analysis, interpretation, and communication of data about learning processes in different contexts that provides theoretically grounded, actionable insights to enhance learning and teaching.

   **Keywords**: human-centred, multi-context, theory-informed

**OR**

2. Learning Analytics is the collection, analysis, interpretation, and communication of data about learners and their contexts, for purposes of understanding, supporting, and enhancing learning and the environments in which it takes place.

   **Keywords**: learner data, enhancement of learning, enhancement of learning environments

# Scope

The following statement of scope is intended to help people wondering whether their work falls within the learning analytics field. It is intended to be helpful for people submitting applications to either the International Learning Analytics and Knowledge (LAK) Conference or the *Journal of Learning Analytics* (JLA).

Learning analytics (LA) is a multidisciplinary field focused on the intersection of data and learning. The LA community undertakes theory-informed investigation of learning processes relevant for stakeholders (students, teachers, learning designers, advisors, and others) that informs actionable feedback to improve learning, learners' wellbeing and quality of education. LA entails a fundamentally applied nature that approaches use of data from a holistic perspective, including data collection, analysis, communication, visualization, interpretation, and closing the loop to bring insights back to stakeholders to impact action such as implementation of educational interventions. Responsibility, sustainability, and ethical and equitable use of data are key principles that underpin trust in LA and are incorporated in LA work.

LA brings a contextually-aware data-informed analysis of educational technology used to support evidence-based strategic and operational decisions that help learners, teachers, or other practitioners involved in education. Besides quantitative analysis based on mathematical approaches, machine learning and other AI-based methods, such work often entails descriptive methods for analysis, and frequently uses data visualization, dashboards, or data storytelling to communicate insights. Qualitative approaches, mixed methods, action research, and approaches from the learning sciences are also utilized when oriented toward insights enhancing learning. The LA field also frequently pushes methodological boundaries, including through advanced artificial intelligence (AI) and other statistical modeling or data science methods. In fact, AI is one of the fastest growing areas of interest within the

global LA community as of 2025. Subfields within LA dynamically emerge and evolve over time, including areas such as multimodal LA, support for self-regulated learning, human-centered LA, and analysis of teaching and learning in AI-supported learning environments. LA empowers people with insights derived from data, often using co-design processes that connect learners, researchers, and practitioners to enable responsive action that catalyzes educational imagination from a human-centered perspective.

# Appendix–In/Out of Scope

Here are examples of what would be considered in and out of scope for learning analytics. These examples may be modified going forward by LAK program chairs and JLA journal editors. The following topics of interest have been combined from the data collection during the initial community input phase and prior descriptions of what is in scope for learning analytics.

## In Scope for Learning Analytics

**Implementing Change in Learning & Teaching:**

- **Ethical issues around learning analytics**: Analysis of issues and approaches to the lawful and ethical capture, protection, and use of educational data traces, including data privacy; tackling unintended bias and value judgements in the selection of data and algorithms; perspectives and methods that empower stakeholders.
- **Equity, fairness and transparency in learning analytics:** Consideration of how certain practices of data collection, analysis and subsequent action impact particular populations and affect human well-being, specifically groups that have been previously disadvantaged. Discussions of how learning analytics may impact (positively or negatively) social change and transformative social justice.
- **Learning analytics adoption**: Discussions and evaluations of strategies to promote and embed learning analytics initiatives in educational institutions and learning organizations. Studies that examine processes of organizational change and practices of professional development that support impactful learning analytics use.
- **Learning analytics strategies for scalability**: Discussions and evaluations of strategies for scaling the capture and analysis of information in useful and ethical ways at the program, institution or national level; critical reflections on organizational structures that promote analytics innovation and impact in an institution; use of artificial intelligence to increase the scale of educational interventions using learning analytics approaches.
- **Strategic planning of learning & teaching**: Consideration and application of trustworthy learning analytics in all phases of strategic planning, including needs analysis for change, decision-making, implementation and monitoring, as well as evaluation of strategic decisions, taking into account the complexity and context of the strategic decision-making domain.

**Understanding Learning & Teaching:**

- **Data-informed learning theories**: Proposals of new learning/teaching theories or revisions/reinterpretations/support of existing theories based on or related to large-scale data analysis.
- **Insights into specific learning processes**: Studies to understand particular aspects of a learning/teaching process through a learning theory informed use of data science methods and techniques, *including negative results*.
- **Learning and teaching modeling**: Creating mathematical, statistical or computational models of a learning/teaching process, including its actors and context, when targeted toward learning analytics-oriented questions. (This is in contrast to work restricted to comparing algorithms or prediction models, which may be better targeted toward educational data mining (EDM).)
- **Understanding learning and teaching with artificial intelligence (AI)**: Studies that analyze environments that aim to enrich learning by using artificial intelligence that might change the role of teachers in all stages of the learning process, starting with learning design via facilitating learners to supporting learner-centred decision making, and the learning paths of learners.
- **Systematic reviews**: Studies that provide a systematic and methodological synthesis of the available evidence in an area of learning analytics.

**Tracing Learning & Teaching:**

- **Finding evidence of learning**: Studies that identify and explain useful data for analyzing, understanding and enhancing learning and teaching.
- **Assessing student learning**: Studies that assess learning progress through the computational analysis of learner actions or artifacts, as well as social interactions with peers and teachers that might support the acquisition of intended learning outcomes.
- **Analytical and methodological approaches**: Studies that introduce analytical techniques, methods, and tools for modeling student learning with the goal of empowering learners or other educational stakeholders and enhancing learning. Methods could include artificial intelligence, machine learning, natural language processing, social network analysis, text mining, and knowledge tracing among others when targeted toward LA-oriented questions. This also includes using multimodal learning analytics and flexible learning and teaching approaches that support learning processes, learner achievements, and learner well-being.
- **Technological infrastructures for data storage and sharing**: Proposals of technical and methodological procedures to store, share and preserve learning and teaching traces, taking appropriate ethical considerations into account and involving feedback loops to stakeholders.

**Impacting Learning & Teaching:**

- **Human-centered design processes:** Research that documents practices of giving an active voice to learners, teachers, and other educational stakeholders in the design process of learning analytics initiatives and enabling technologies.
- **Providing decision support and feedback**: Studies that evaluate the use and impact of feedback or decision-support systems based on learning analytics (dashboards, early-alert systems, automated messages, etc.). This includes data visualization and data storytelling with learning-related data.

- **Data-informed decision-making:** Studies that examine how teachers, students or other educational stakeholders come to, work with and make changes using learning analytics information. This includes use of artificial intelligence as a tool for automating analysis of learning-related data to provide insight, predictions, and recommendations that enhance decision making for stakeholders at any level. It also includes action research and qualitative investigation of how stakeholders understand and utilize data in educational contexts.
- **Personalized and adaptive learning**: Studies that evaluate the effectiveness and impact of adaptive technologies based on learning analytics.
- **Practical evaluations of learning analytics efforts**: Empirical evidence about the effectiveness of learning analytics implementations or educational initiatives guided by learning analytics.

## Out of Scope for Learning Analytics

- Work focused solely on aspects of methodology and data manipulation that does not discuss or include closing the loop to stakeholders, such as through empowering learners, teachers, or other educational stakeholders.
- Work without any data or evidence that relates to learners, educators, or learning processes.
- Work introducing analytical techniques, methods, and tools without connecting to learners or learning processes.
- Work restricted to comparisons of different approaches to predictive modelling or algorithm accuracy is more likely a better fit for educational data mining (EDM).
- Work that's all about comparing institutions and countries is probably academic analytics.
- Work about using artificial intelligence (AI) in primary classrooms may be a better fit for AI-Ed, but using analytics in effectiveness evaluations of AI-supported learning environments is in scope for learning analytics.
- Work without a sound theoretical foundation in learning theories or that does not use sound methodologies when collecting and analysing data.