# Learning Analytics

**Category: Artificial Intelligence in Education**

Learning analytics is the collection, analysis, interpretation and communication of data about learners and learning to produce theoretically relevant, actionable insights that enhance learning and teaching. It may use descriptive, diagnostic, predictive or other methods; it is not necessarily based on AI.

The field connects data with educational theory and purposeful action. Dashboard activity, assessment results or interaction records become meaningful only when interpreted in context, and institutional use must address privacy, validity, fairness and the rights of learners (SoLAR, 2025).

## Analytics Cycle

1. **Question:** Define the educational purpose, intended users and decision the analysis should inform.
2. **Collect:** Use relevant, proportionate and well-governed data with known limitations.
3. **Analyse:** Apply suitable methods and examine uncertainty, missingness and unequal patterns.
4. **Interpret:** Combine results with theory, local context and the perspectives of affected learners.
5. **Act and evaluate:** Take a proportionate action and test whether it improves learning or teaching.

## Examples in Practice

A course team notices that many students pause at the same segment of an online laboratory guide. Staff compare the pattern with questions and assessment evidence, consult students and revise the explanation. They then evaluate whether completion and understanding improve, rather than treating clicks as learning.

## Why It Matters

Learning analytics can make patterns visible and support timely inquiry across complex learning environments. Data are partial representations, however, and poorly framed metrics may direct attention away from meaningful learning or generate unjustified surveillance and intervention. Learners should have appropriate information, voice and routes to challenge significant interpretations before and after implementation (Ferguson, 2012).

## Further Reading


6. Society for Learning Analytics Research. (2025). Learning analytics definition taskforce report. SoLAR.
7. Ferguson, R. (2012). Learning analytics: Drivers, developments and challenges. International Journal of Technology Enhanced Learning, 4, 304–317.
8. Ifenthaler, D., & Yau, J. Y.-K. (2020). Utilising learning analytics to support study success in higher education. Educational Technology Research and Development, 68, 1961–1990.


**Related Terms:** Predictive Analytics in Education | Educational Data Mining | Learner Modelling | Data Ethics