Learning Analytics

Learning Analytics is defined as the measurement, collection, analysis and reporting of data pertaining to learners and learning contexts, to understand and optimize learning and the environments in which learning occurs.

Recent technological innovations have allowed learning analytics researchers to capture the digital footprint of learning activities in unconventional classrooms – which may include, but not limited to Hybrid and Hyflex methods of teaching. This rich and fine-grained data about actual behaviour of learners are claimed to offer the faculty with potentially valuable insights into how the learners react to different learning designs and how 'at-risk' students could be supported to complete their learning activities.

Objectives of learning analytics
Process of learning analytics
Uses of learning analytics

Objectives of learning analytics

Historically, some of the most common uses of learning analytics is prediction of academic success. It is the identification of students who are at risk of falling behind or dropping out.

Learning analytics can provide learners with:

- An opportunity to take control of their own learning
- A better idea of their current performance in real-time
- Assistance to make informed choices about what to study

Some of the most popular objectives of learning analytics include:

1. Supporting student development of lifelong learning skills and strategies
2. Provision of personalised and timely feedback to students regarding their learning
3. Supporting development of important skills such as collaboration, critical thinking, communication and creativity
4. Develop student awareness by supporting self-reflection
5. Support quality learning and teaching by providing empirical evidence on the success of pedagogical innovations

Process of analytics

Descriptive analytics	Diagnostic Analytics	Predictive Analytics	Prescriptive Analytics
What happened in the past?	*why* did it happen? (in the past)	*What* is most likely to happen in the future?	What actions can be taken to bring positive learning outcomes?
Tasks include: Collection and organization of historical data, producing visualizations such as line graphs, bar charts, pie charts.	Tasks include: Analysing the data collected.	Tasks include: Analysing the past trends and statistically make correct predictions	Tasks include: Identify the corrective actions to be included to ensure maximum learning

Note that data is collected from a broad range of sources including behavioural data taken from online learning systems (discussion forums activity completion assessments) and functional data taken from student admissions systems and progress reports.

Uses of learning analytics

1. Identify target courses which closely align with learners' needs and preferences for their program of study
2. Allows instructors to make changes and adjustments to improve curriculum development in the educational system
3. Help faculty understand the student learning experience through learner interactions with technology tools such as e learning and mobile learning
4. Personalized learning – Review / feedback given in real time
5. Identify post-education employment opportunities for graduates and help target education that more closely aligns with employment market needs