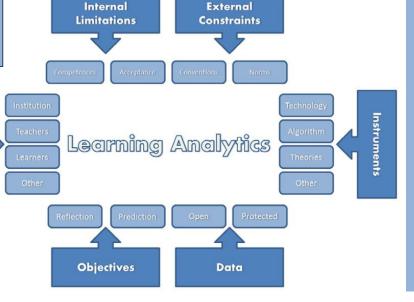
- The instruments and data sources are always used within the constraints of internal limitations such as:
 - The knowledge and analytical skills of the staff working with LA models and data.
 - Institutional culture and processes of change management operative in an institution.
 - A reluctant or slow buy-in by stakeholders can also be an internal limitation.

The Stakeholders are the focus of the workshop:

- Students
- Lecturers
- Institutional management

Handout: LA Framework

- The external constraints of LA focus on:
 - Conventions refer to ethics, personal privacy, and similar socially motivated limitations.
 - Norms are restrictions imposed by laws or specific mandated policies or standards.
 These could refer to the institutions policies, practices, programs and processes.



- The technology element refers to the analytical application of:
 - Educational data mining,
 - Classical statistical techniques,
 - Data visualisation.
- Statistical algorithms that are used by the technology applications to transform data into information.
- The theoretical constructs, such as self-regulated learning, should be operationalised appropriately and underpinned by theory.

- Reflection/ description of:
 - Students based on normative data,
 - Lecturers reflecting on the learning process of their students,

Stakeholders

- Institutions evaluating and reflecting on groups of students.
- Prediction suggests a statistical modelling of the data about the student learning process in order to provide support to students with similar characteristics to those of the target group modelled in the analysis.

- Student record data from LMS and other sources. This is more than we can sense and goes beyond numbers and categorical labels to include things like text, images and video.
- Mash-ups of data from different sources to facilitate learneroriented services and personalisation.
- LA data is protected or proxy access, which limits the evaluation of LA models - Anonymisation is one means of creating access.