Learning Analytics (LA)

- Enhances student learning
- Aimed at understanding and optimizing learning
- Most focused on institutions and academics
- In most cases, learning analytics are used to identify engagement patterns of students, which do not really help with learning
- Ranges from automated content analysis of online discourse to social learning analytics
Framework for Learning Analytics

Stakeholders

- Data subjects
  - (e.g. learners)
- Data clients
  - (e.g. tutor or learner)
Framework for Learning Analytics

Objectives

- Reflection
  - (e.g. How did a student perform?)

- Prediction
  - (e.g. Preventing students from dropping out)
Framework for Learning Analytics

Data

- Open
- Protected
Framework for Learning Analytics

Instruments

- Technology
- Algorithm
- Theories
- Other
Framework for Learning Analytics

External Constraints

- Conventions
  - Privacy
  - Ethics
- Norms
  - Legal?
Framework for Learning Analytics

Internal Limitations

- Competences
  - Interpretation
- Acceptance
Learning Analytics

- Student-facing learning analytics:

  “Solutions that enable students to view their own data via a dashboard, in order to interpret and act upon it in some way.”

Other forms are possible, for example a personalised emailing system.
Learning Analytics

- Until now, little emphasis upon providing the learner with tools that they can access to understand their own learning processes.

- Surprising, because this is a very important subject

- It can encourage students
  - Metacognition
  - Reflection
Learning Analytics

- The reason it is not often used is because of agency and control
  - Ethics
  - Privacy

- Can be interpreted in the wrong way. Student that does not perform well, can drop out instead of getting more motivated.

- The paper is focused upon discussing evidence that LA can indeed be used in a student-facing context.
Student-facing solutions

- Few solutions explicitly focussing on students
- Often presented as a dashboard
  - Information trace > analysed > presented
- Example: Course Signals
Example: Course Signals
Student-faced Dashboard
Student-facing Learning Analytics
Learning Designs

- A framework for designing student learning experiences that explains a sequence of activities.
  - Specifies the teaching and learning process

- Learning designs are needed to help educators to make use of student-facing LA
  - General enough to encourage wide-ranging use
  - Able to be adapted to class specific concepts
Learning Designs
Do-analyse-change-reflect

- Participating in a learning activity (data needs to be gathered).
- Using LA dashboards that result from the do phase.
- Encouraged to change behaviour as a result of the analytics from the analyse phase.
- Reflective process where behaviour is reported.
Studen-facing Dashboard

Do

Analyse

Change

Reflect
Learning Designs
Active learning squared

Do-analyse-change-reflect

Classify

Examine

Relabel

- Previous pattern
- Machine learning is used to classify the behaviour patterns of students
- Students examine a dashboard that shows their classified behaviour. Encouraged to compare with own perceptions.
- Students are encouraged to challenge and relabel a classification if they think that it is incorrect.
THANK YOU FOR LISTENING
References

