Effective feedback through learning analytics dashboards

Workshop
Delft, 8 April 2019

Ioana Jivet
ioana.jivet@ou.nl
@ioanaJJ

Tom Broos
Tom.broos@kuleuven.be
@tombroos
Effective feedback through learning analytics dashboards is grounded: based on research

4 levels of feedback (Hattie & Timperley, 2007)

1. Task and products
2. Process
3. Self-regulation
4. Self
Effective feedback through learning analytics dashboards is grounded: based on research

4 levels of feedback (Hattie & Timperley, 2007)

1. Task and products
2. Process
3. Self-regulation
4. Self

Self-regulated learning (Zimmerman, 1990)

- Learners are active participants in their learning.
- Cyclical process: goal setting, performing, self-evaluation
- Most common theoretical background for dashboards (Jivet et al., 2017)
Effective feedback through learning analytics dashboards is actionable: guides users to action.

Warning!
Male students have 10% less probability to be successful. You are male.

(action?)

Warning!
Your online activity is lagging behind.

(action?)

✓
Effective feedback through learning analytics dashboards is **scalable**: can be delivered to large cohorts.

---

Define a problem

Choose a problem from your daily practice or your institution where you think learning analytics can help?
Define a problem

Decide within your group on one problem to work on during this workshop.
What actions do you expect [want] to be taken after consulting the dashboard?
What information do you need to know in order to solve this problem?

Sketch a visualisation element to show this information.
Plan the **evaluation**

How can you prove to stakeholders that you are solving the problem?
Discuss your group solution
Presentation of the group results
What does research say?

Dashboards can support conversations

What does research say?

Dashboard usage is related to the profile of the user.

What does research say?

Dashboard usage produces learning traces too.

Proportion of students below the 30% study efficiency threshold.

- Using dashboard within 24h: 23.9% (N=2420)
- Using dashboard after 24h: 27.7% (N=1355)
- Not using dashboard: 41.4% (N=295)
### What does research say?

**Students are positive about dashboards**

The dashboard is useful | The dashboard is clear, I understand it | The dashboard has added value
--- | --- | ---
* | 27 | *
** | 44 | **
*** | 200 | ***
**** | 683 | ****
***** | 973 | *****
--- | --- | ---
| 50 | **
| 56 | **
| 202 | ***
| 695 | ****
| 822 | *****
--- | --- | ---
--- | --- | ---
| 85 | 97 | 313
| 658 | 857 | 857
What does research say?

It's difficult to provide good automated feedback to the middle group.

What does research say?

**Gender interaction effects**
What does research say?

What does research say?

1. Transparency of design
2. Reference frames
3. Support for action
What does research say?

Goals and self-regulated learning

What does research say?

Reference frames

1. Social
   - Class
   - Teammates
   - Previous graduates
   - Top peers
   - Peers with similar goal

2. Achievement
   - Learning outcomes
   - Learning goals

3. Progress
   - Self

What does research say?

[Diagram showing 'Analytics' with 'Learning' partially inside]
References


