

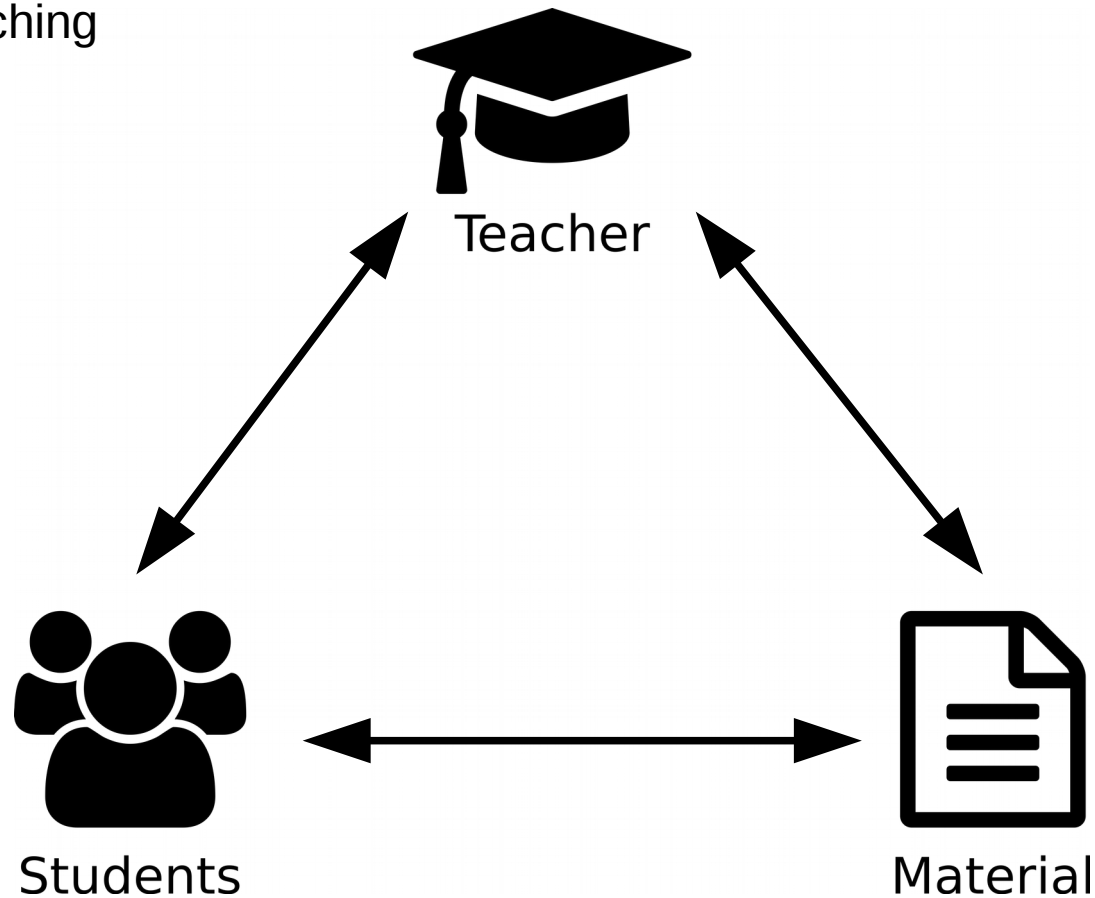


Using Interaction Data to Evaluate Online Learning Materials

eduhub days 2016

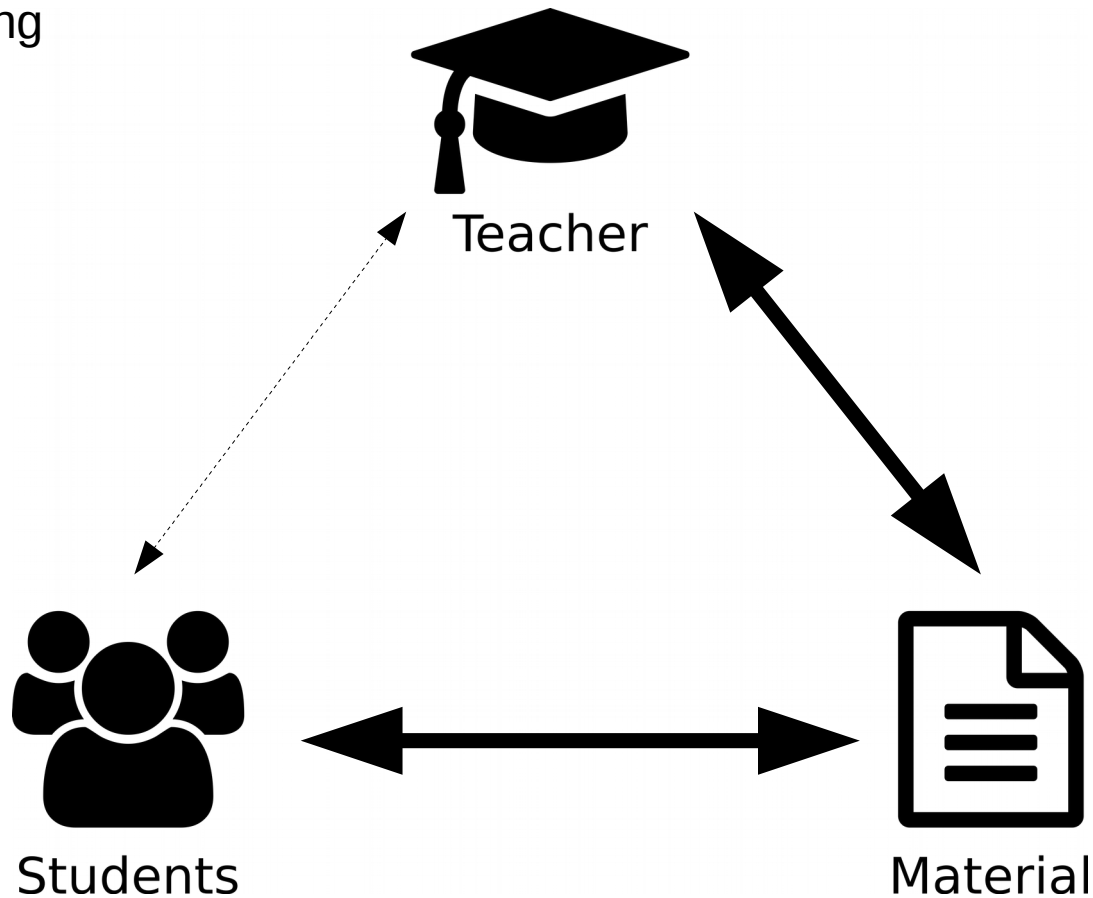
Challenge of Online Learning

Classical Teaching



Challenge of Online Learning

Online Teaching



Our Solution

Interaction Data

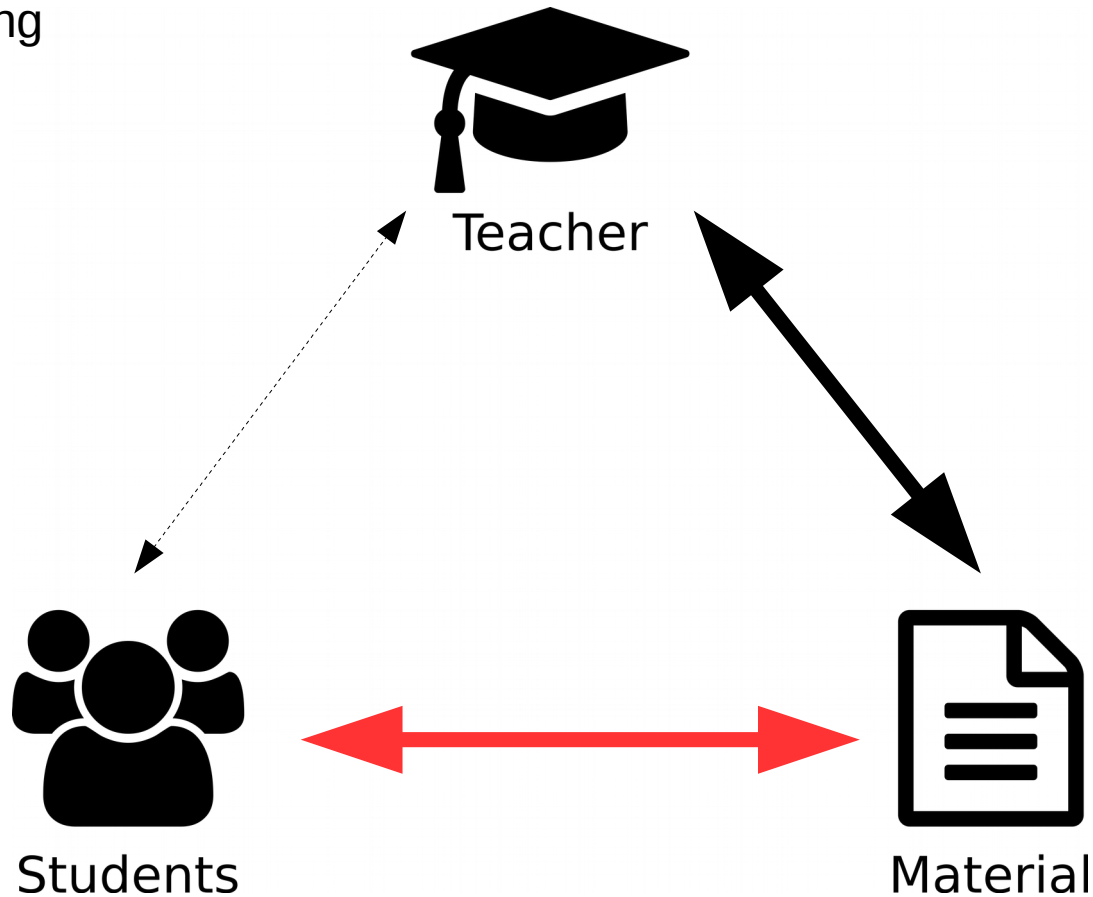
- Measurements of Students working with problem based online learning materials.
- Measurements of actual interactions.
- Very fine grained information (188 Measurements)

Collected Data

- 720'715 Datapoints
- 815 Students
- 884 Datapoints/Student

Challenge of Online Learning

Online Teaching

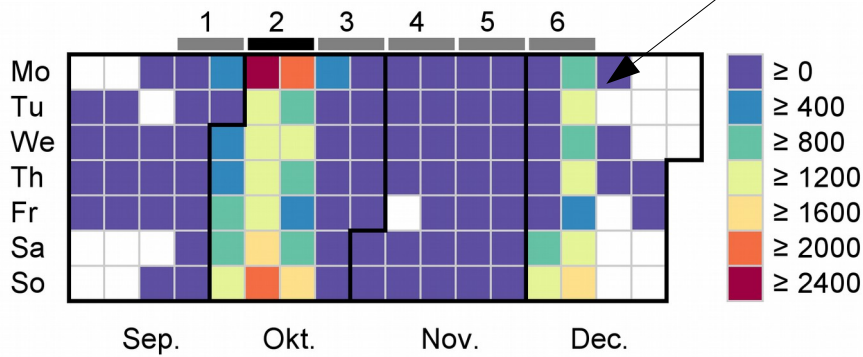


Analysis

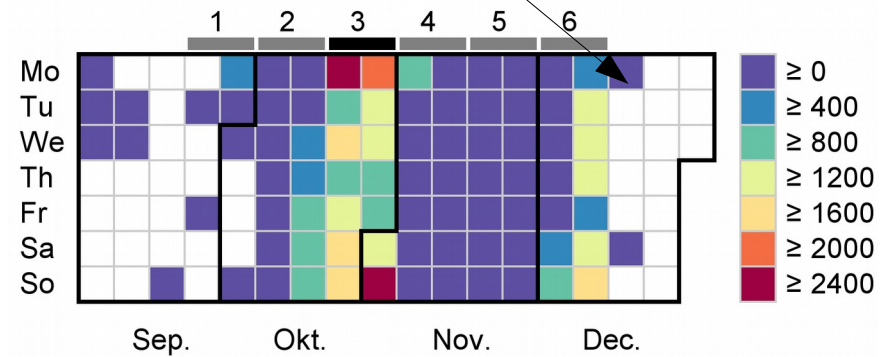
When are Students working?

Exam

Module 2



Module 3



Live Analysis

Where do students have problems

Verteilung Arbeitszeiten

Daten Auswahl

Sprache
de

E.Tutorial
Programmiergrundlagen Python 1

Tool
☒ PyCharm

Daten laden

Daten Filterung

Datumsbereich
20.05.2015 to 25.01.2016

Remove outliers:
☒ Global
☐ Stepwise
☐ Fixed
☐ Do not remove

Grösse des Datensatzes:

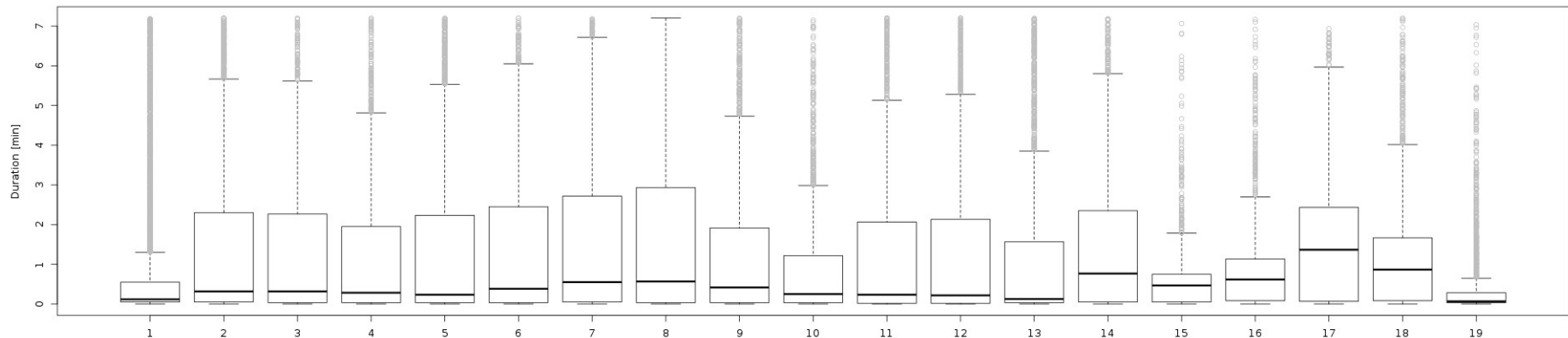
57928

Grösse nach Filterung:

51210

Prozentsatz der Entfernten Daten:

11.6%



Live Analysis

Where do students have problems

Verteilung Arbeitszeiten

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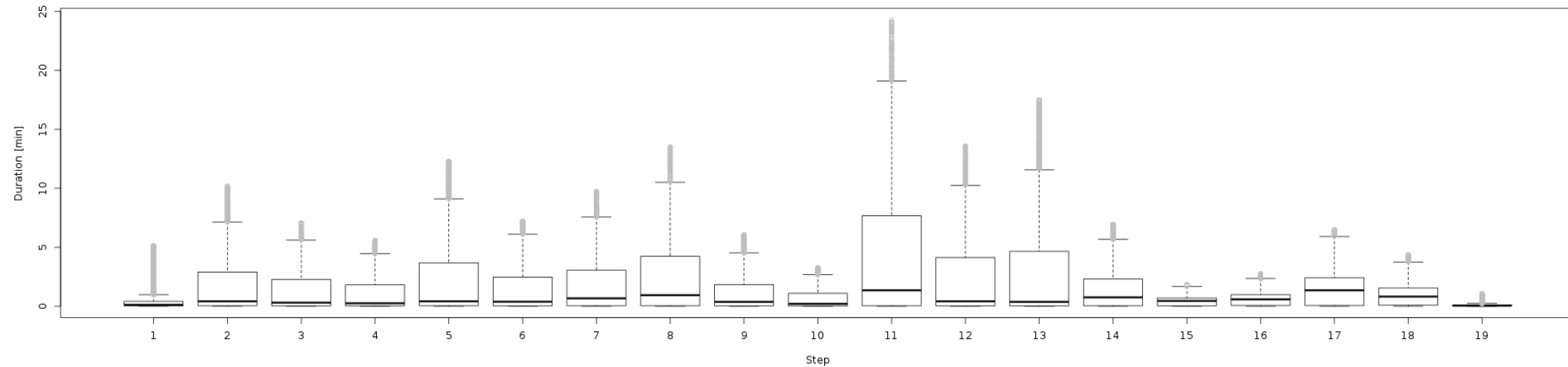
57928

Grösse nach Filterung:

52581

Prozentsatz der Entfernten Daten:

9.23%



Conclusion

Live data analysis of interaction data can:

- cope with the loss of interaction between teacher and students.
- give additional insight into students learning.
- provides helpful feedback for lecturers.
- help lecturers to monitor students progress.
- **not** identify risk students.



Thanks for your attention

Contact information and credits

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D. Sichau, L. Fässler:

Evaluation of online learning materials with automatically Collected interaction data.

Proc. of the 28th World Conference on Educational Media and Technology (EdMedia 2016), to appear.