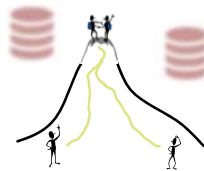


Transfer-Phase:

Option 1: Hypothesis testing

I have theories about student learning.

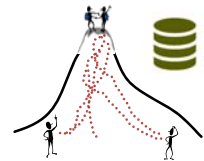
What data can I use to test these?



Option 2: Data Exploration

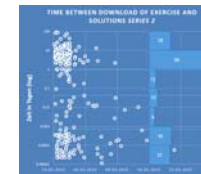
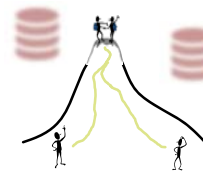
I have data about student learning.

What could they tell me about student learning?



Learning Analytics: Hypothesis Testing

- **Course:** Physics Exercises
- **Students:** 1st year BSc USYS, ERDW, HEST
- **Hypothesis:** Students check solution before working
- **Data:** Check Moodle log for exercise and solution download time



Learning Analytics: Simple Tools

Moodle:
Log



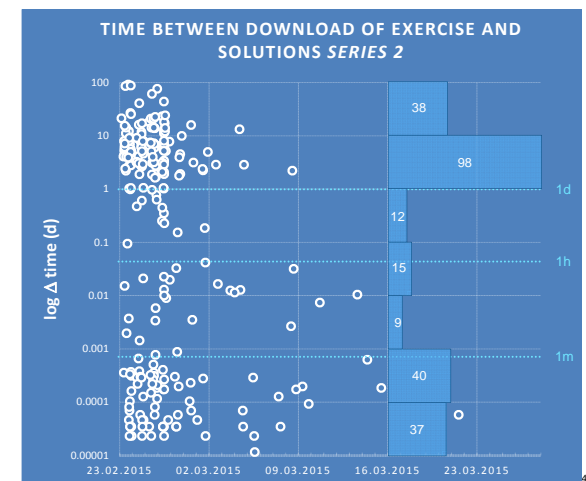
Excel:
Filters
Formulas
Pivot-Tables

ID	Kurs	Zeit	Aktion	Informationen	Übung	Zeit	...
2536	Physik1_Z	23.02.2015 17:10:34	129 Aa resource view (ht Übungsserie 2		1	0.000046296	-4.33445
2540	Physik1_Z	23.02.2015 16:04:22	77: Ad resource view (ht Übungsserie 2		1	#####	1.963454
2545	Physik1_Z	23.02.2015 17:00:41	10: Al resource view (ht Übungsserie 2		1	2.727858796	0.435822
2547	Physik1_Z	24.02.2015 11:21:20	188 Al resource view (ht Übungsserie 2		1	0.000659722	-3.18064
2549	Physik1_Z	25.02.2015 07:25:53	89: Al resource view (ht Übungsserie 2		1	0.000034722	-4.45939
2551	Physik1_Z	23.02.2015 22:30:16	77: Al resource view (ht Übungsserie 2		1	0.000023148	-4.63548
2556	Physik1_Z	24.02.2015 20:55:06	80: Al resource view (ht Übungsserie 2		1	7.997928241	0.902978
2565	Physik1_Z	27.02.2015 17:56:09	46: An resource view (ht Übungsserie 2		1	1.920057870	0.283314

Hypothesis Testing

- «If I put exercises and solutions online simultaneously, students will immediately check solutions before starting to think.»

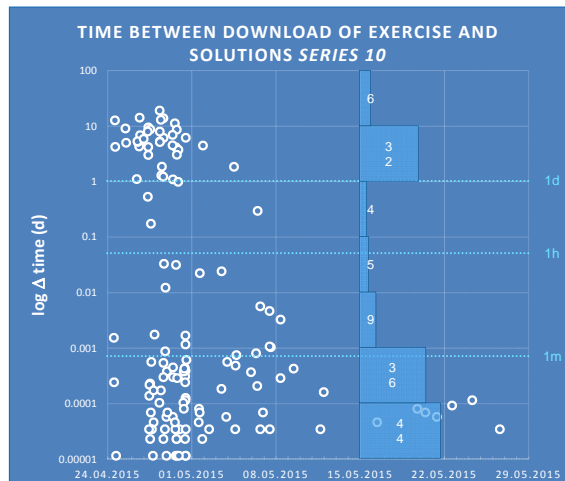
Moodle logs of
Physik1_ZEUS_FS15, Series 2
Solutions available simultaneously (23.2.)



Hypothesis Testing

- «If I wait a few days before putting solutions online, more students will start working without cheating.»

Moodle logs of Physik1_ZEUS_FS15, Series 10
Solutions available after 3 days (27.4.)



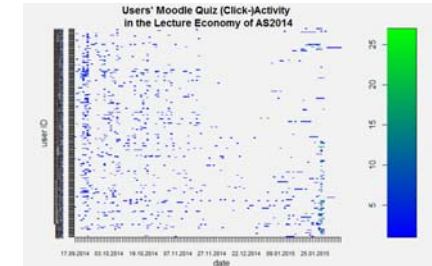
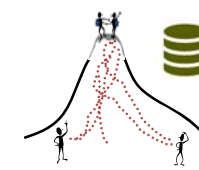
Learning Analytics: Data Exploration

- Course:
- Students:
- Data:

Economy TORQUE

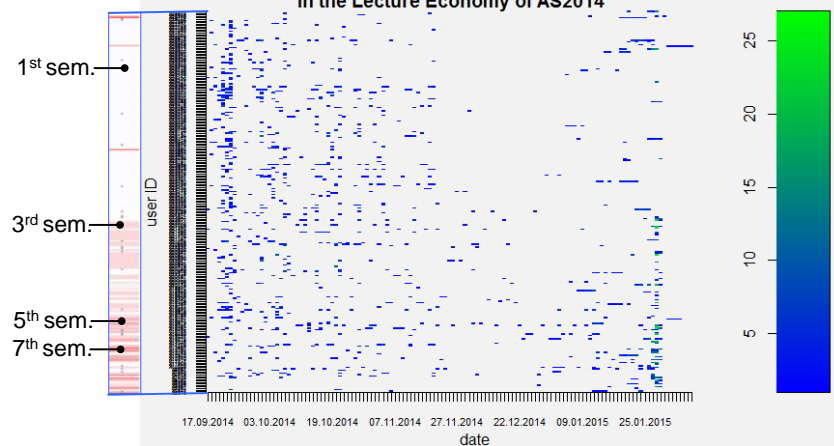
1st year BSc

Plot of Moodle log-file on quiz click activity



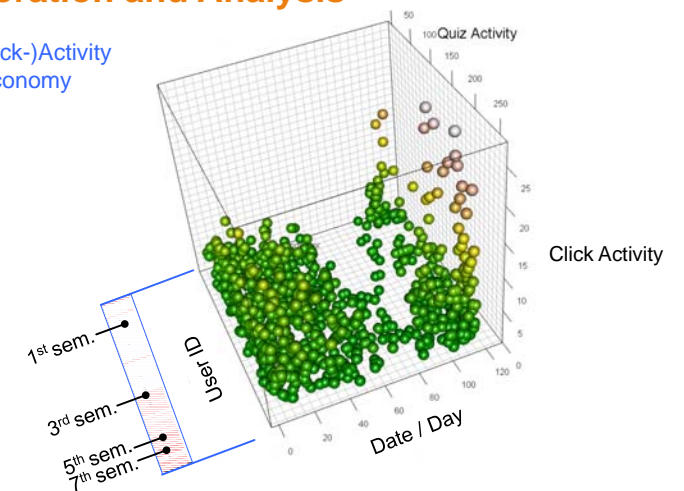
Data Exploration and Analysis

Users' Moodle Quiz (Click-)Activity in the Lecture Economy of AS2014



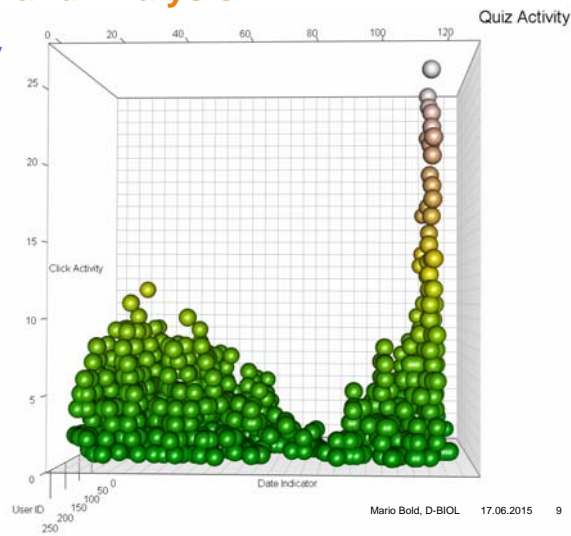
Data Exploration and Analysis

Moodle Quiz (Click-)Activity in the Lecture Economy of AS 2014



Data Exploration and Analysis

Moodle Quiz (Click-)Activity
in the Lecture Economy
of AS 2014



Transfer Phase Task on Learning Analytics

1. Fill in your card (3 min.):

Course:	What's the course name I will think of?
Students:	Which kind of students attend this course?
Hypothesis:	I assume the students ...
Data:	What data sources do I have / need / can I assess? How can I assess my hypothesis (tools)?

2. Pin your card on the board according to the topic:

a) Hypothesis

b) Exploration

3. Read the cards of your colleagues.

4. Discuss your cards.

5. What are your personal inspirations?