Neue Technologien in der Studien-eingangsphase

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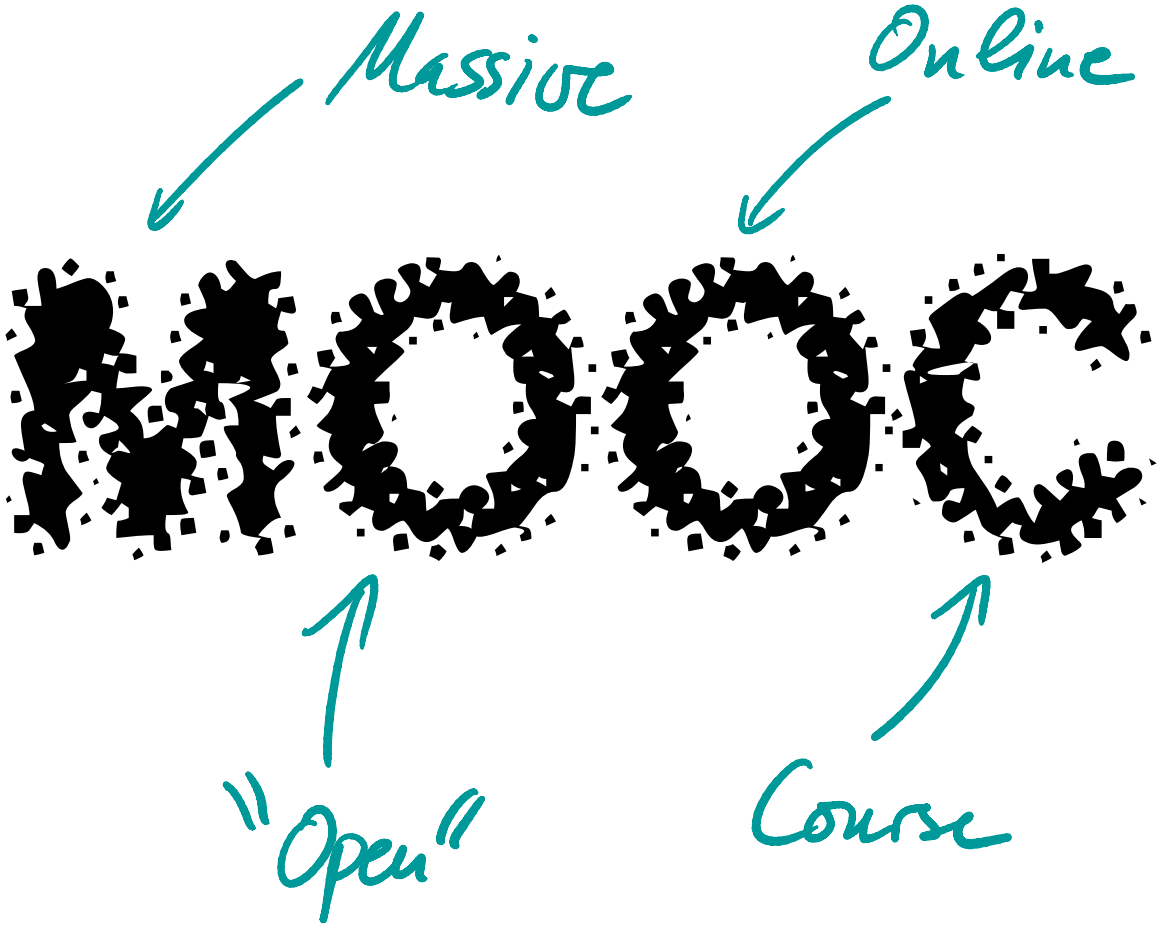
Sinn der Studieneingangsphase

- Kenntnisse und Fertigkeiten angleichen
- …


Massive
Online
MOOC
"Open"
Course

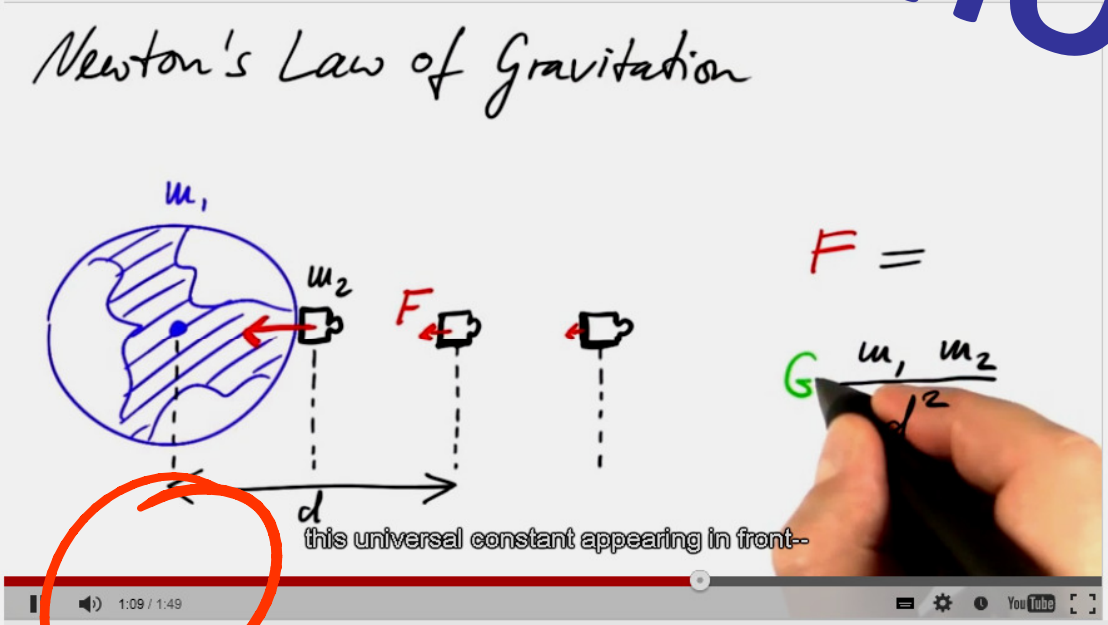
http://cacm.acm.org/blogs/blog-cacm/153706-john-l-hennessy-on-the-coming
http://blog.coursera.org/post/55080731561/coursera-secures-43m
http://blog.coursera.org/post/67777181974/coursera-receives-20

Differential Equations in Action

CLASSROOM

Unit 1 - Houston We Have a Problem

xMOOC



Previous Next

Discussions

See All

No discussions for this unit. See all discussions for this course.

Ask a Question

Instructor Notes

No additional notes for this section

Differential Equations in Action

Unit 1 - Houston We Have a Problem

Ratio of gravitational forces

1	: 1	
2	: 1	
1	: 2	
4	: 1	
1	: 4	

Rewatch Instructions

Submit Quiz

Discussions

See All

Unit1-21: Force Ratio, Force from the shell and Force from the core ? Nov 10

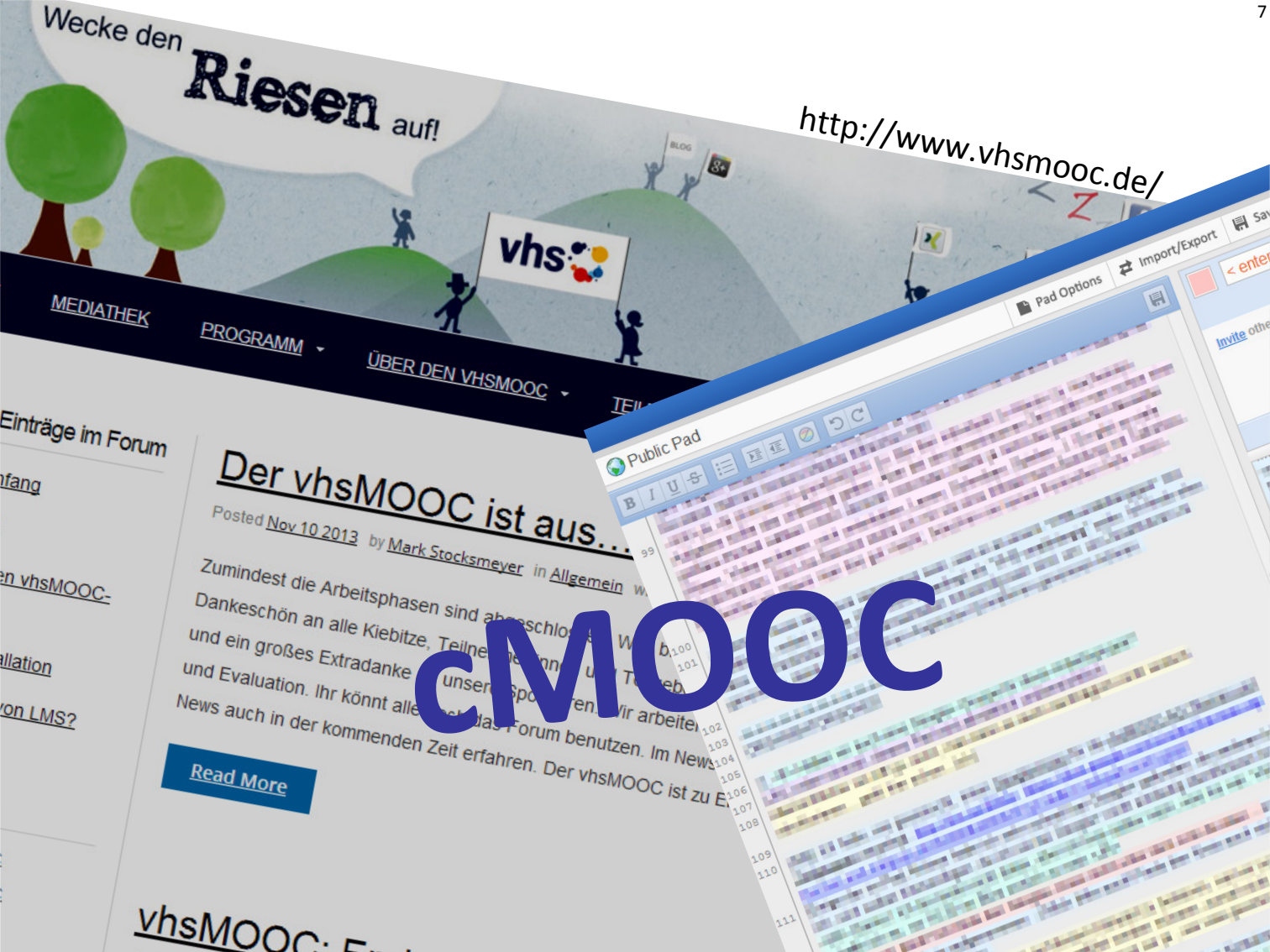
Shell Theorem and water flow analogy Nov 10

Ask a Question

Instructor Notes

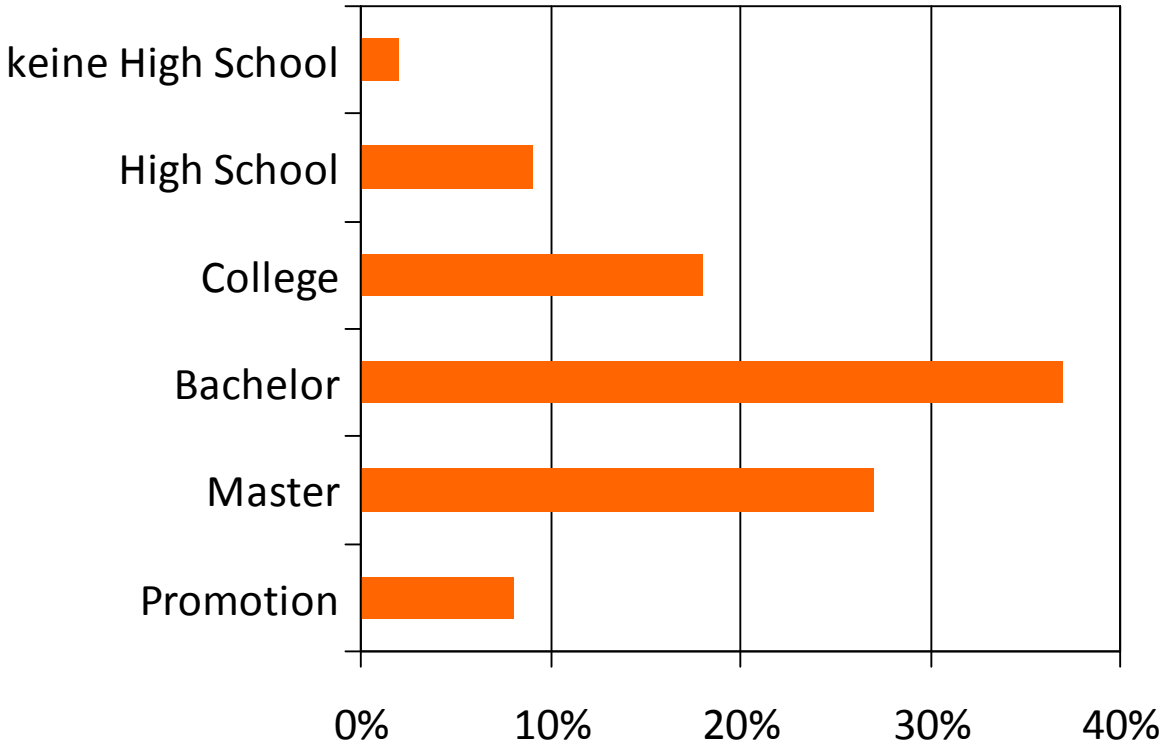
No additional notes for this section


xMooc
Differential Equations in Action
PS5-2 Hydraulic Braking - why change b if desired bounds?
When implementing the brake controller, we want to ensure slip is between low_slip and
majority of the time. This is the relevant part of the official solution:
if s < low_slip:
brake_change = 1
elif s > high_slip:
brake_change = -1
However, this implies:
else (i.e. if low_slip <= s <= high_slip):
brake_change remains as it was, i.e. -1 or 1
I find this last part somewhat counter-intuitive. If s was, let's say, too low and has in this step only just
surpassed low_slip, it already has some "inertia" (its derivative is positive). Then increasing the
pressure further will make s overshoot high_slip with an even higher derivative. A symmetric argument
can be made for s decreasing past high_slip. Therefore, I would argue for the solution
if s < low_slip:
brake_change = 1
elif s > high_slip:
brake_change = -1
else:
brake_change = 0
Indeed, the car stops in 3573 steps instead of 3725 with this solution.
One might however also argue against this solution: it should only work better if s, when "left alone"
(brake_change==0) will shoot for high_slip very fast in a different setting (or an analogous control
problem). systemic forces might be pushing s (or its analogue) towards 0. In the brake_change==0
case, making it linger around low_slip all the time, never achieving the ideal slip. However, I tried to get
this effect by greatly increasing the admissible slip band to [low_slip, high_slip] = [0.07,0.33] — —
surprisingly, the advantage of "my" approach increased (3710 vs 4070 steps for the car to stop).
Any thoughts, comments? I must be missing or misunderstanding something about control systems.
cs222
ps5-2
STAFF
edit | close | delete | more
retagged 18 Sep '12, 22:07
Sergei
15 65
asked 10 Sep '12, 08:14
Mitja Trampus
2 5
accept rate: 166%
add a comment
4 Answers:
most voted
Yes, great thinking
My idea was that the two threshold values are so close together that it does not really pay off to have that
third rule. You final experiment indeed shows that this third rule gets more helpful as the distance between
the two threshold values increases.
answered 10 Sep '12, 09:35
Jörn Loviscach
1 8
Asked: 10 Sep '12,
Seen: 207 times
Last updated: 18 Nov '12, 06
Related Questions
Time Out
Acceleration
motion
[closed] Bi
Possible grade
unit7-3
sign of the boost
Python style collides
goal of clarity in instru
PS4-2 grader not accepting
Unit 6-25: Poisson Image
Editing



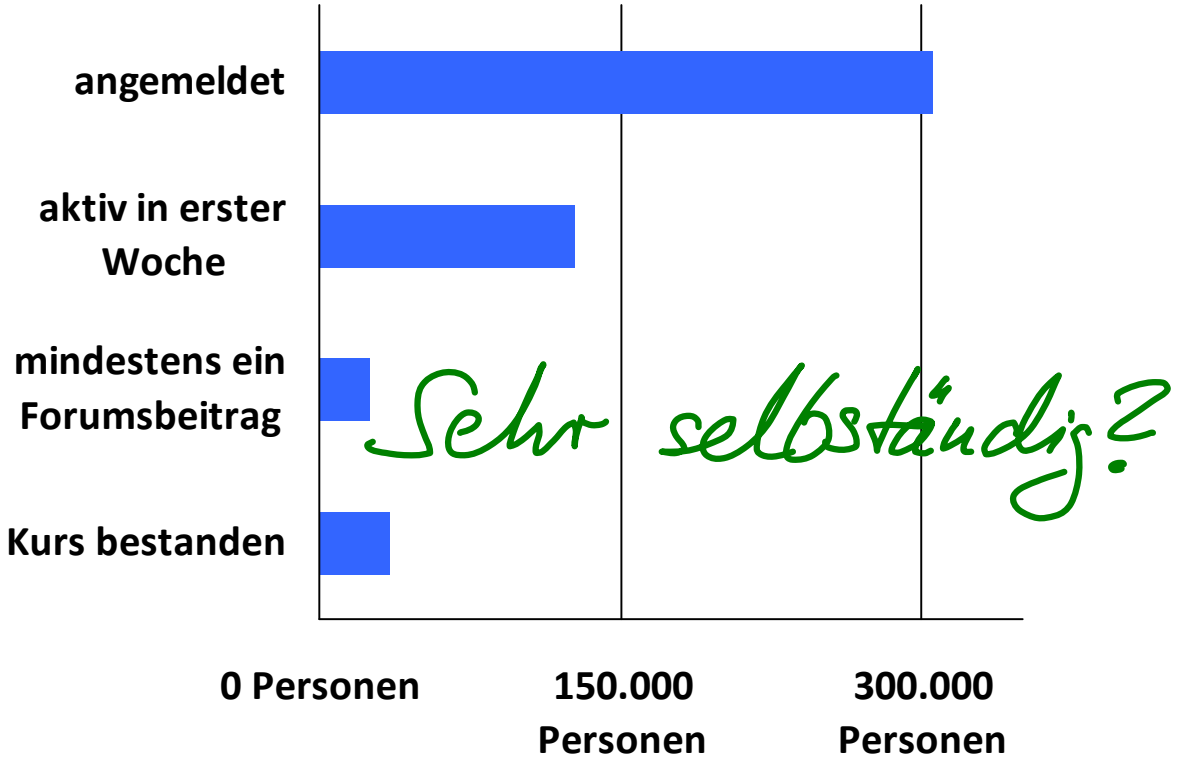
http://www.vhsmooc.de/

Duke University: Biolelectricity



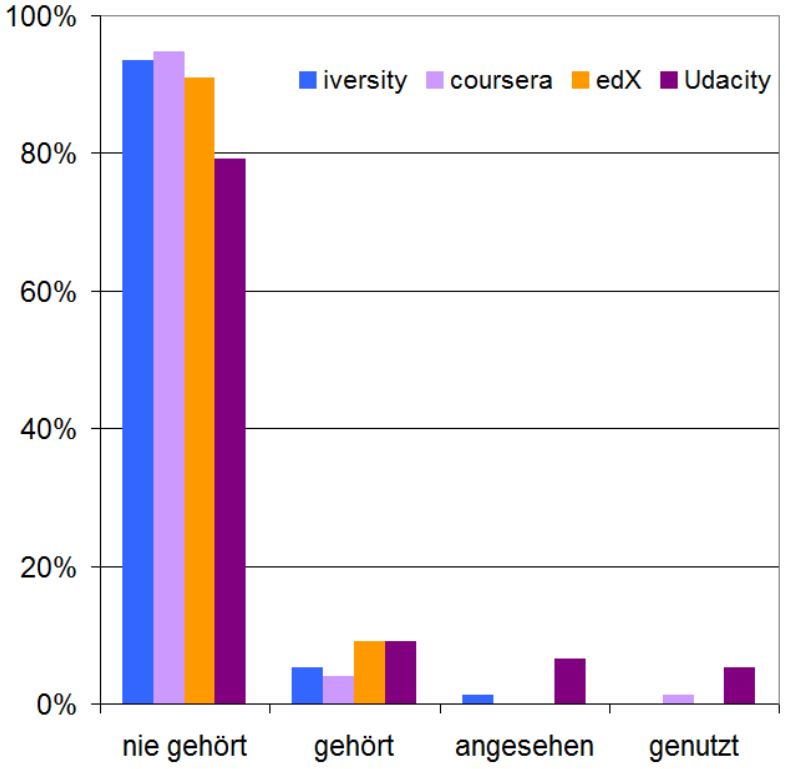
Daten: http://dukespace.lib.duke.edu/dspace/bitstream/handle/10161/6216/Duke_Bioelectricity_MOOC_Fall2012.pdf

MOOCs der Uni Edinburgh 2013



https://www.era.lib.ed.ac.uk/handle/1842/6683

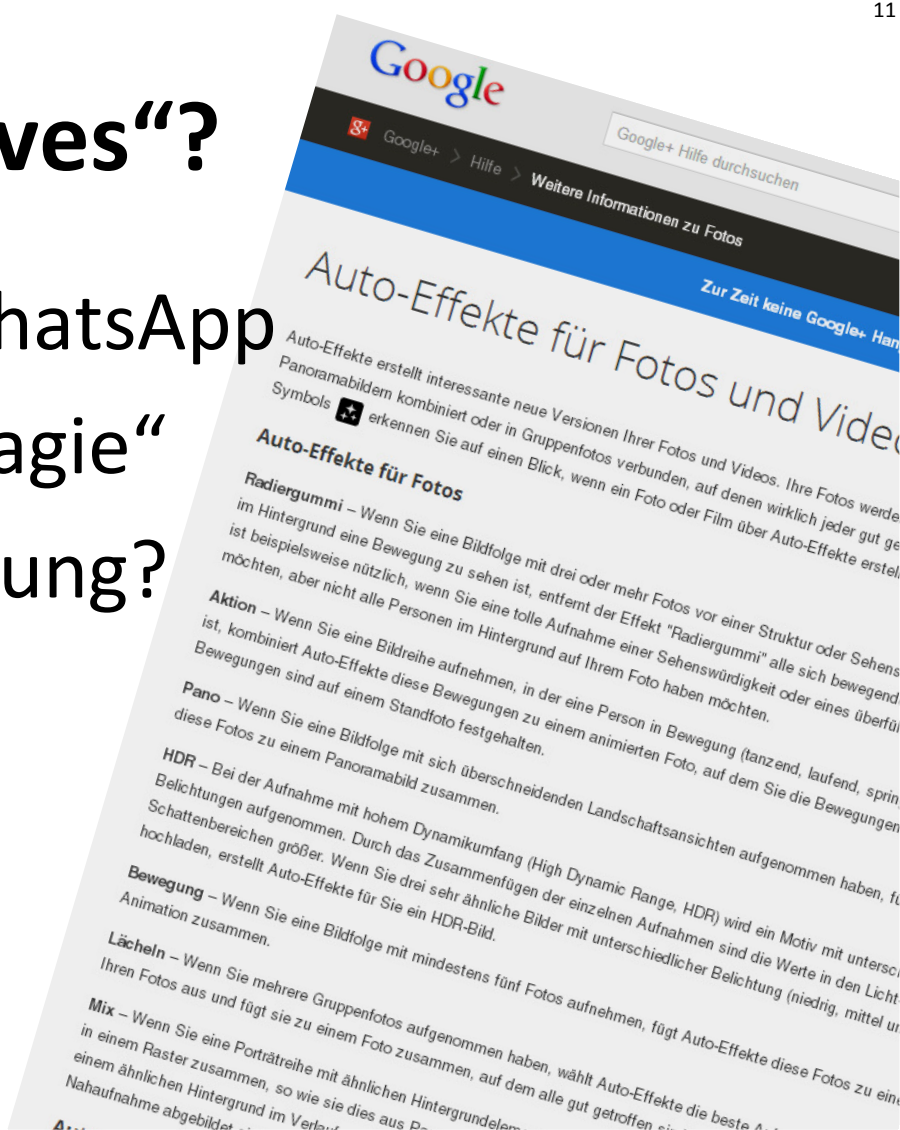
Wer kennt MOOCs?



Umfrage Ende 2013 unter lokalen Bachelor- und Master-Studierenden, N = 77

„Digital Natives“?

- Facebook, WhatsApp
- Software-„Magie“
- Verschriftlichung?
- Illusion des Multitasking



Sinn der Studieneingangsphase

- Kenntnisse und Fertigkeiten angleichen
- …

Sinn der Studieneingangsphase

- Kenntnisse und Fertigkeiten angleichen
- **vom angeleiteten zum selbständigen Lernen**
- **Arbeit mittels Internet und mit Ressourcen im Internet**

Blended Learning

- sinnvolle Arbeitsteilung:
  - Präsenz:
    Dozent(in) und/oder Gruppe
  - Online: Materialien, netzbasierte Zusammenarbeit/Kommunikation
- Begleiten/Üben des Arbeitens mit digitalen Medien

Sinnvolle Arbeitsteilung zwischen Präsenz und Online:

Was sind aus Ihrer Sicht die drei wichtigsten Aspekte?

- Erstsemester nicht vereinsamen lassen
- Online auch in Gruppen
- Aufwand in Didaktik + Präsenz, nicht in Produktion

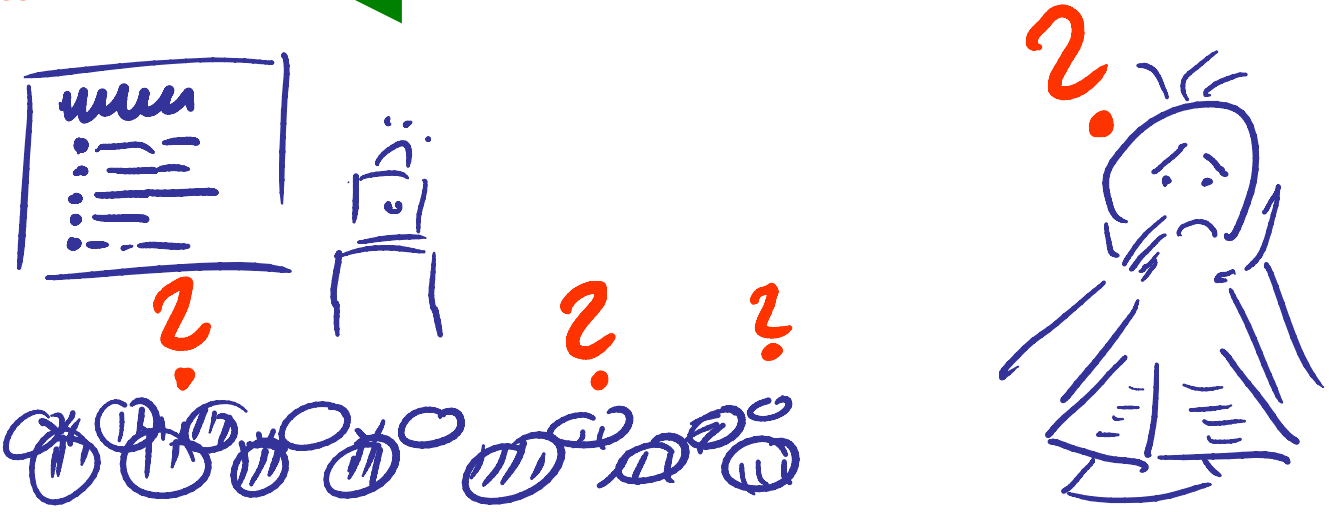
Beispiel: Flipping

an der Hochschule

zu Hause

„Stoff“

üben



an der Hochschule	zu Hause
üben, denken, diskutieren	**„Stoff“**

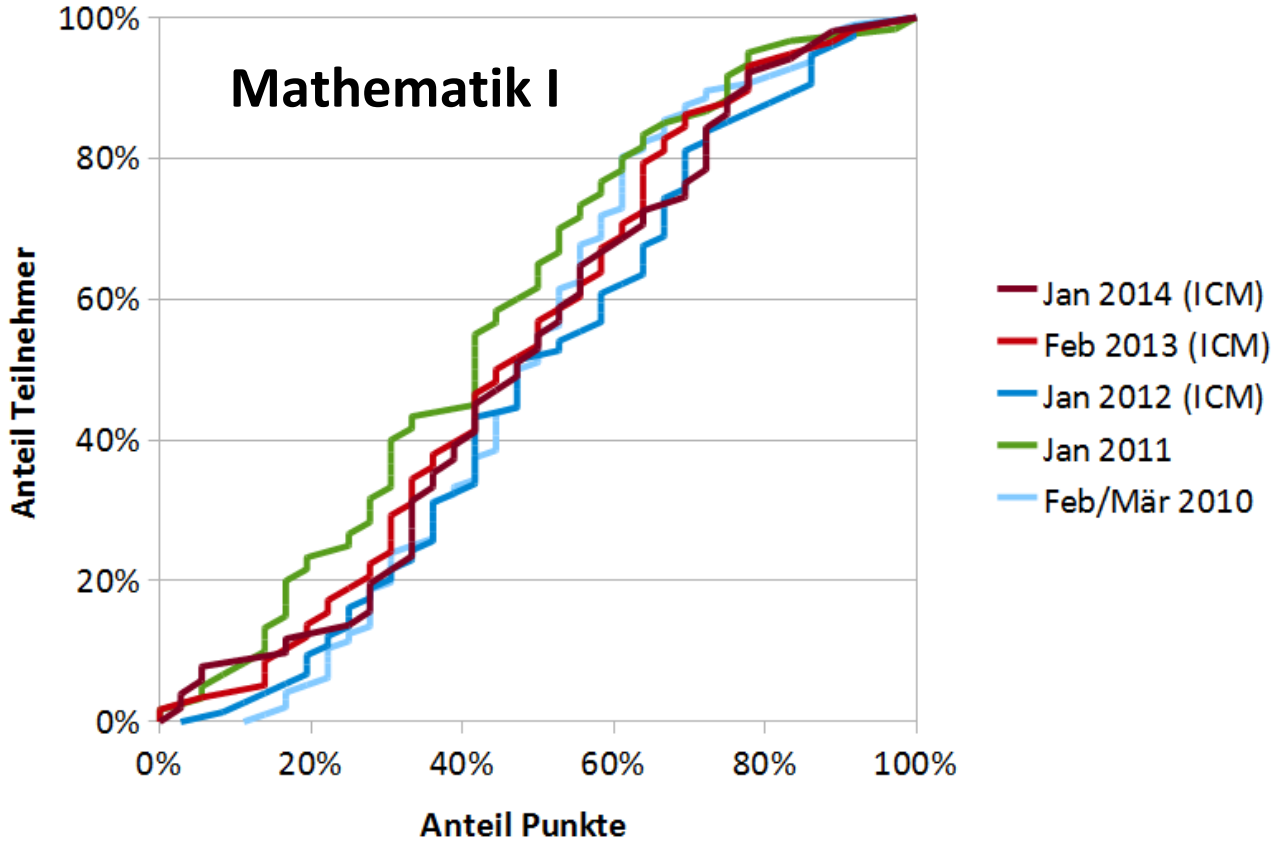
Inverted Classroom Model
= Flipped Classroom

Baker. The Classroom Flip (2000).
Lage/Platt/Treglia. Inverting the Classroom (2000).

Was bei mir klappt

- mehr unmittelbare Rückmeldungen an Studierende / an Dozent(in)
- weniger Facebook und WhatsApp
- mehr Fachdiskussionen zwischen Studierenden
- (etwas) korrektere „Workload“

Klausurnoten?



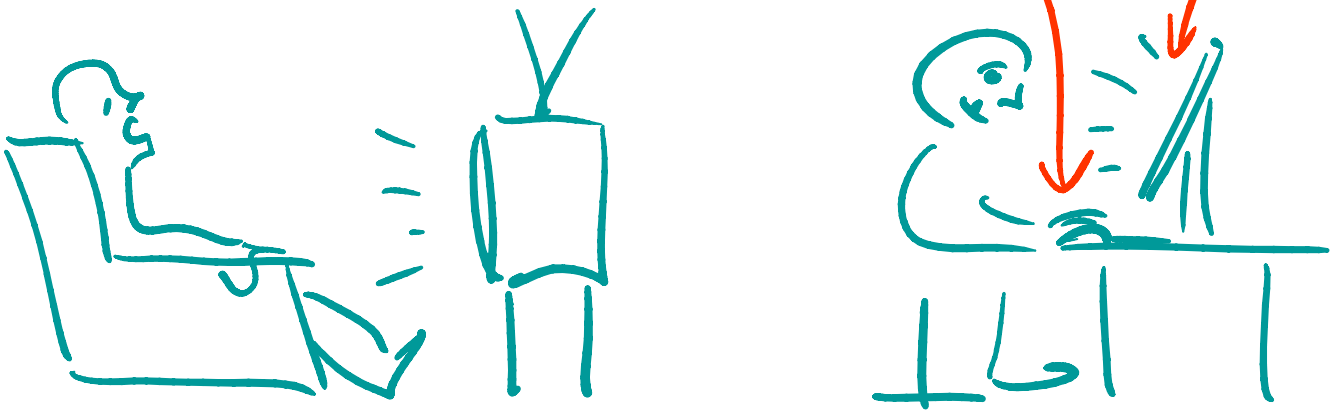
Warum kein größerer Effekt?

- keine eingebauten Quizze – bisher
- Klausur verleitet
  zu oberflächlichem Lernen
- auf andere Fächer konzentrieren,
  in vorlesungsfreier Zeit „nachlernen“

Flipping mit Videos
zum traditionellen Curriculum
als **Ausrede**,
um vom Durchpauken
von „Stoff“ wegzukommen?

Hand auf Mans

kein Facebook usw.

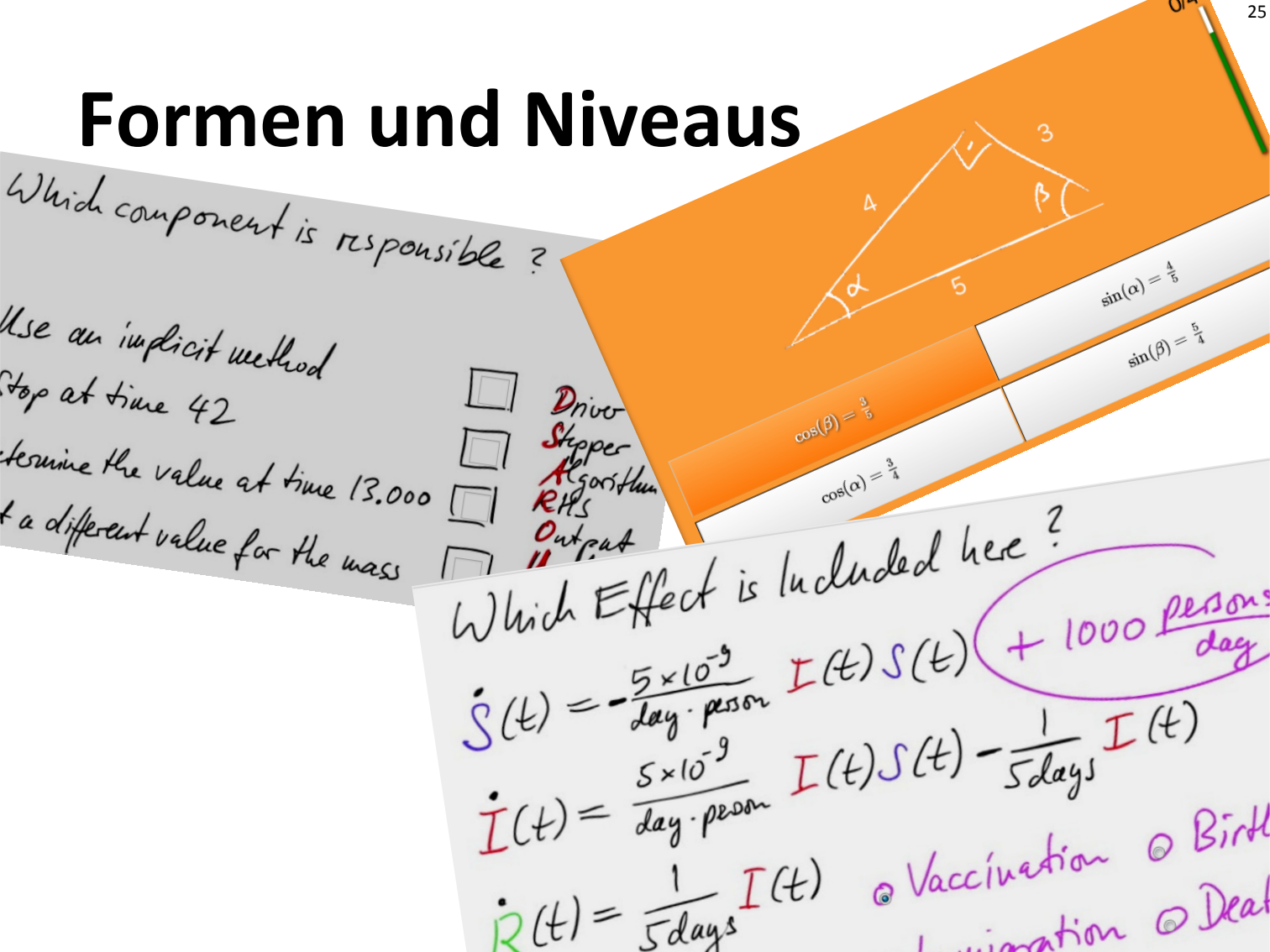


Lean Back

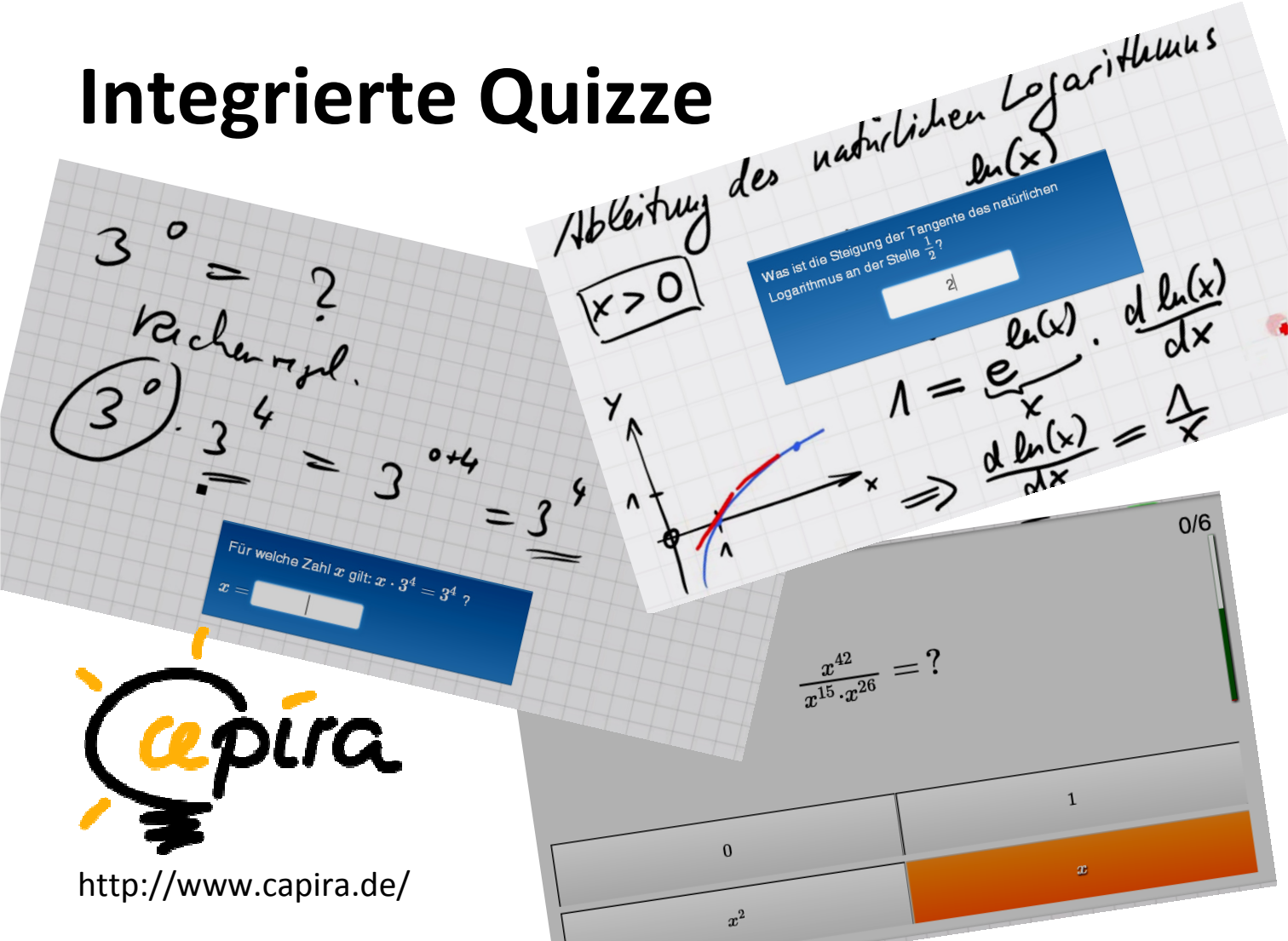
Lean Forward

In den xMOOCs:

Formen und Niveaus



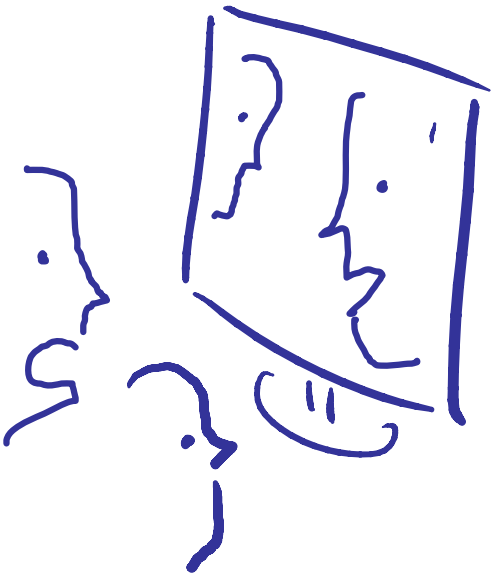
Integrierte Quizze



http://www.capira.de/

Videos im Team

- Social Viewing
- Lerngruppen um Videos und Quizze
- Videos von Einzelunterricht in Lerngruppe diskutieren



www.j3L7h.de