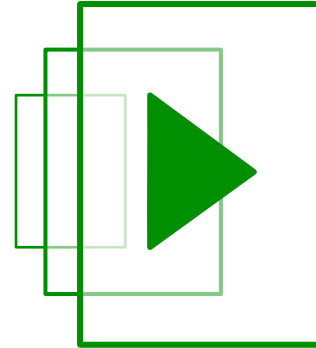


ScalableLearning



Sameh El-Ansary (Peerialism)

Sverker Jansson (SICS)

David BlackSchaffer (Uppsala/Stanford)

Seif Haridi (KTH)

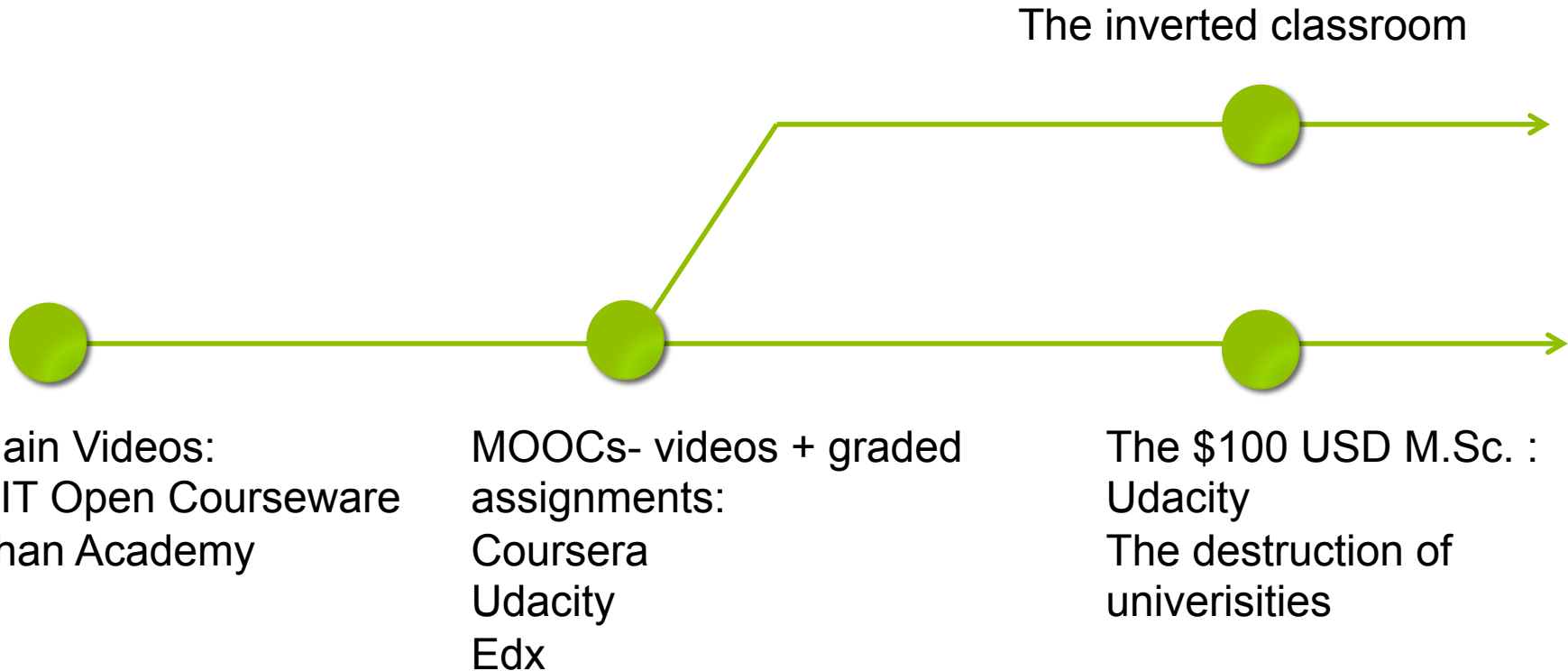
Goal

- Massive Open Online Courses are becoming extremely popular nowadays
- Questions:
 - Are they a better alternative classroom?
 - Will they really eventually lead to universities getting close?
 - How to use them in a university?
 - Are the current MOOCs good?
- Our Answer:
 - Physical classroom is valuable
 - Online courses should be used to improve not to replace the university teaching, how? “The inverted classroom”

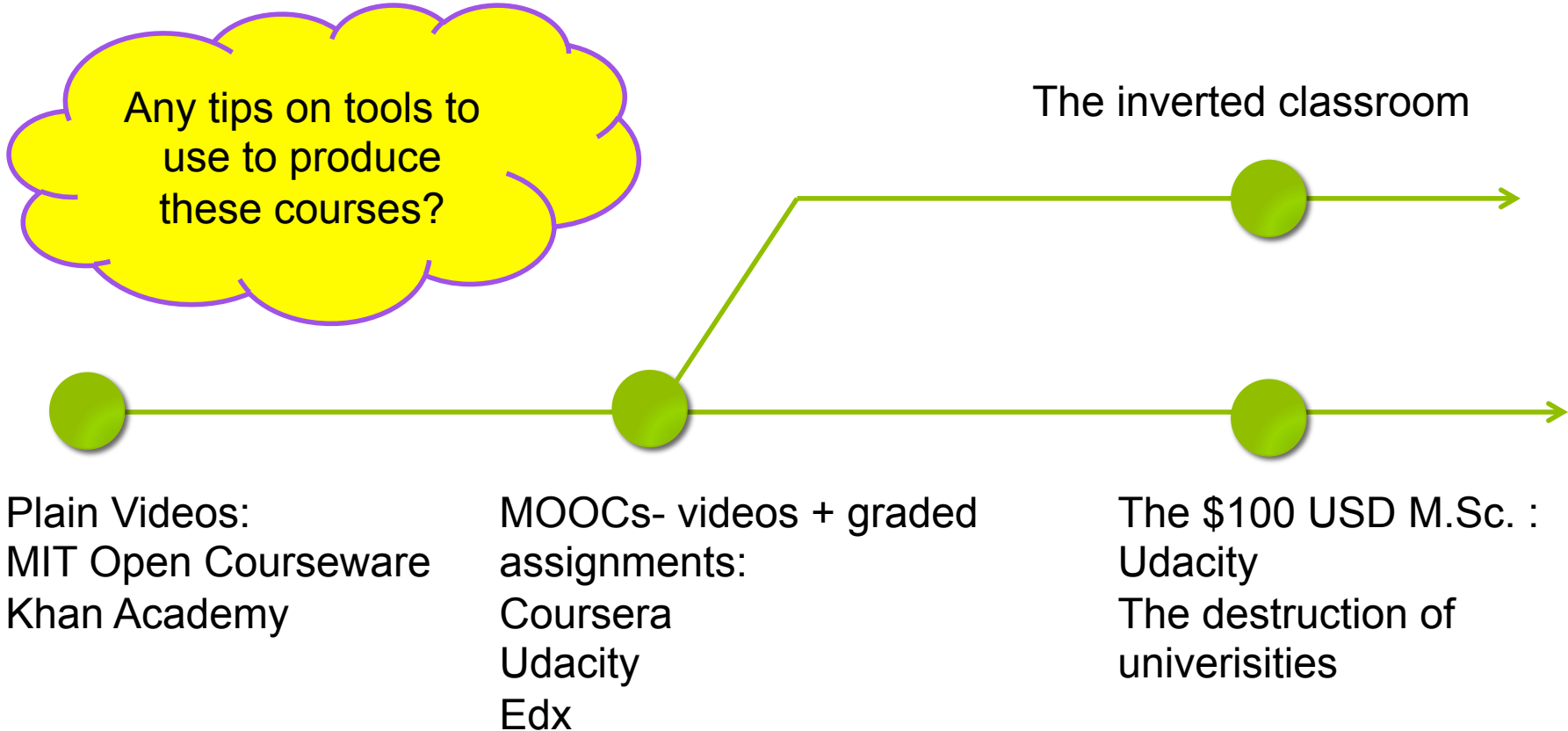
The Inverted Classroom Model

- Redefining what happens in the classroom
- Traditional model
 1. In-class explanation
 2. Homework/assignments/exams for grades
- Inverted classroom model
 1. Explanation **online**
 2. Testing student understanding online using ungraded exercises **online**
 3. The **insight from the online exercises** is used in the classroom for:
 - Improving the explanation
 - teacher-student interaction
 - student-student interaction
 4. Homework/assignments for grades

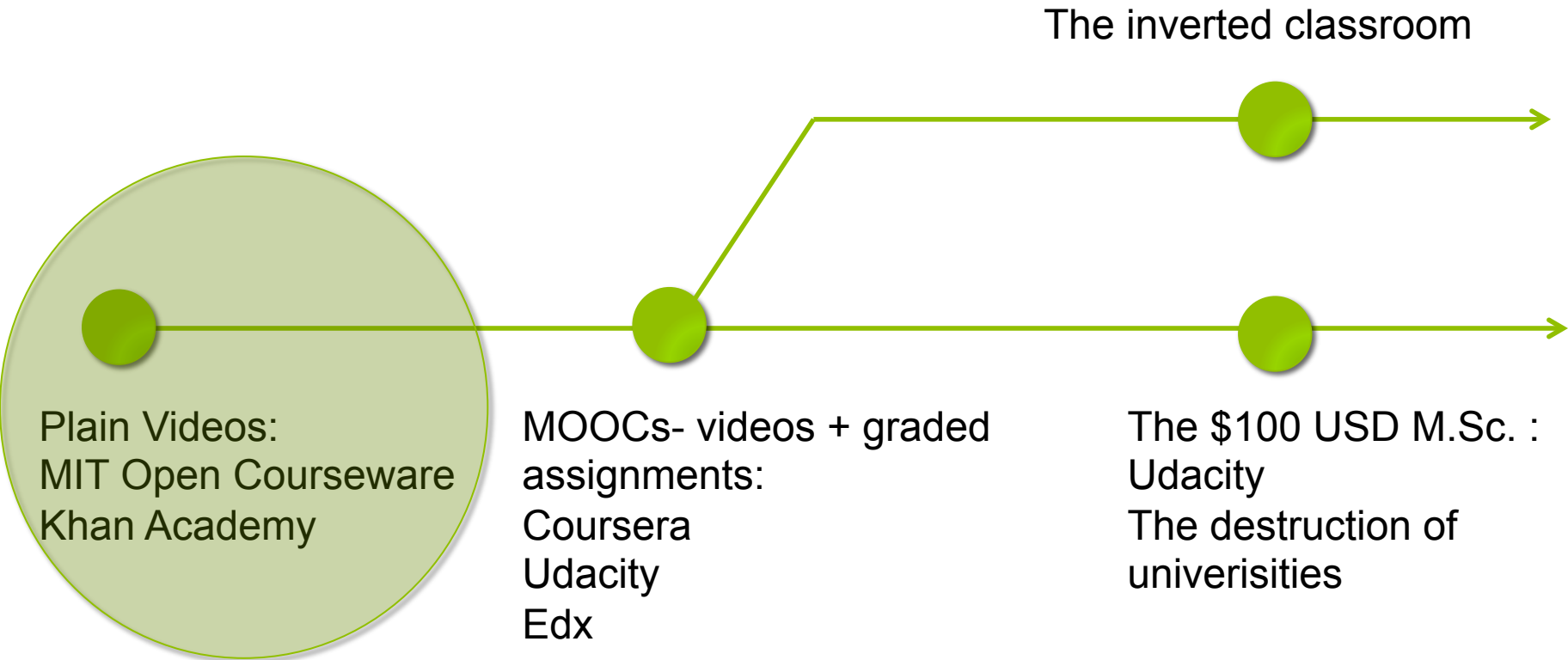
Online Courses Evolution



Online Courses Evolution

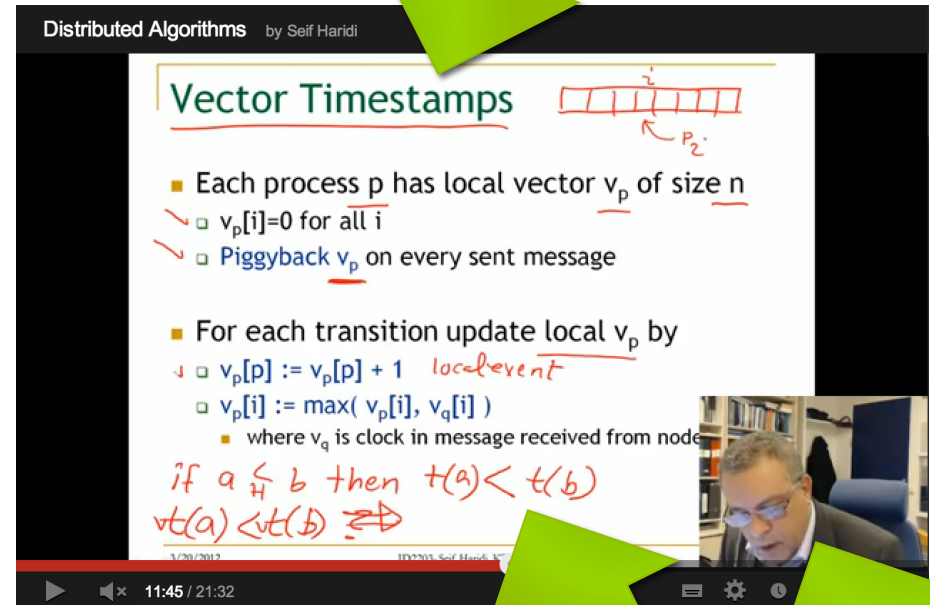


Online Courses Evolution



Tools for Producing videos

- How complex do you want it to be?
 - **Slides video?**
 - Quicktime (Mac-Free), Camstudio
 - **Slides video + instructor video interleaved?**
 - Screenflow (Mac-commercial), Camtasia (Mac/windows- commercial)
 - **Slides video + instructor video interleaved + handwriting?**
 - Wacom cintiq (999\$-3700\$) comes with software
 - **Handwriting only?**
 - Wacom cintiq (999\$-3700\$) comes with software
- Sound:
 - In all cases, you should get some not-so-cheap mic preferably a USB mic (example: Logitech)
- Camera:
 - The mac computer camera should do the trick but you can always get something more expensive



Distributed Algorithms by Self Haridi

Vector Timestamps

Each process p has local vector v_p of size n

- $v_p[i]=0$ for all i
- Piggyback v_p on every sent message

For each transition update local v_p by

- $v_p[p] := v_p[p] + 1$ local event
- $v_p[i] := \max(v_p[i], v_q[i])$
 - where v_q is clock in message received from node q

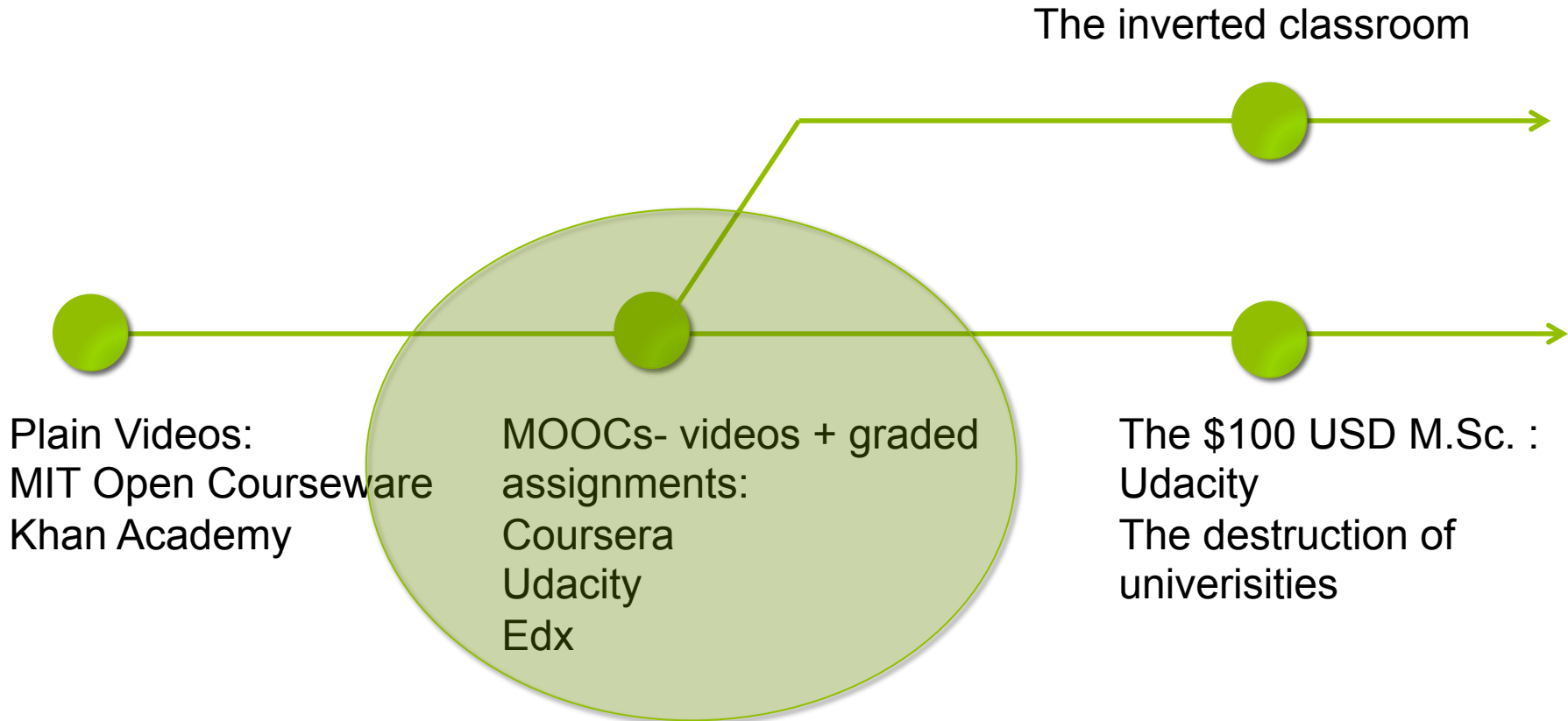
if $a \not\leq b$ then $t(a) < t(b)$
 $vt(a) < vt(b) \Leftrightarrow$



Tools for Content Mangament

- Publishing the videos:
 - In all cases, posting to Youtube is probably the best way
- Managing content
 - Simple webpage
 - Youtube channel
 - Using an LMS such as:
 - Moodle
 - Canvas *****
 - Scalable-learning.com

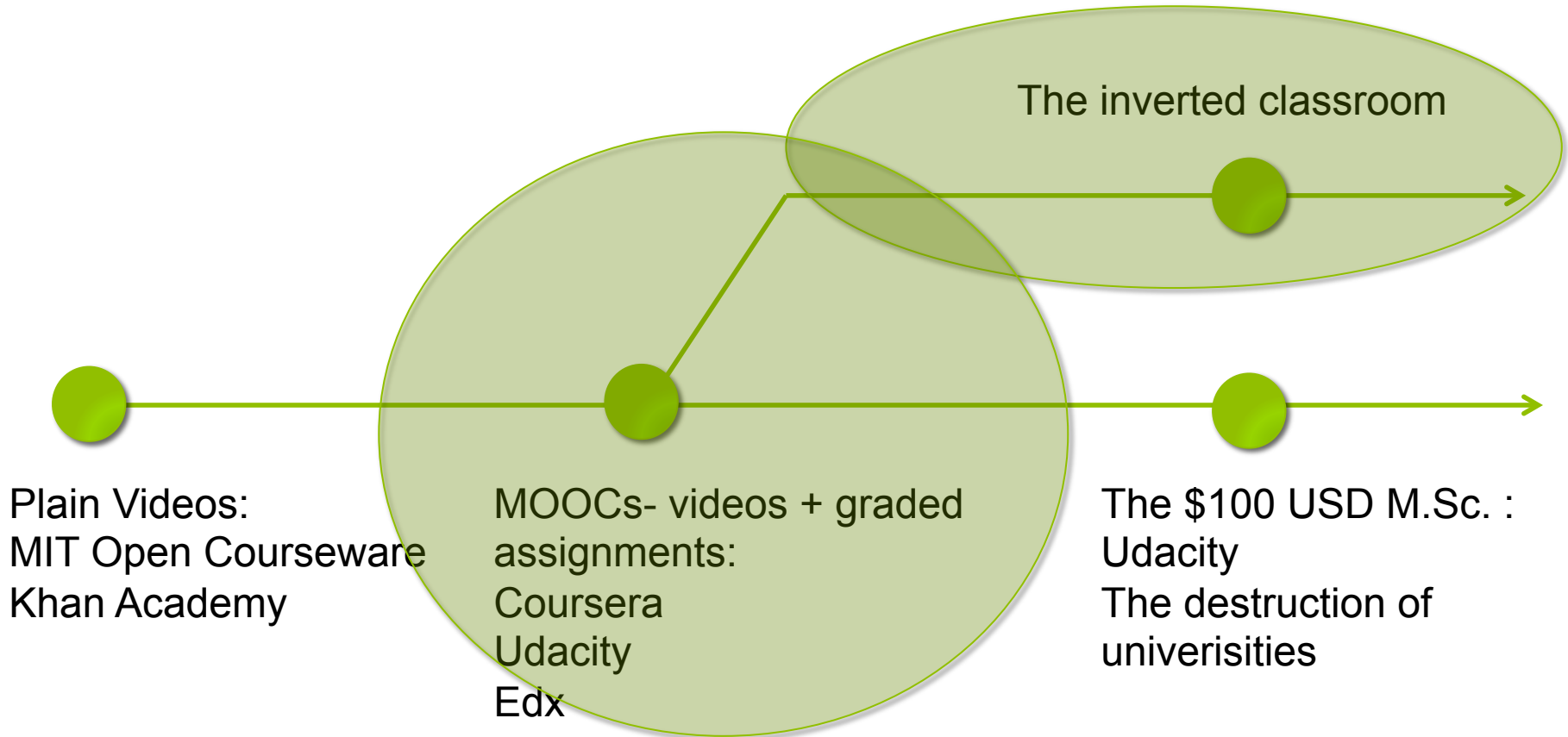
Online Courses Evolution



Tools for Managing Quizzes & Exams

- Canvas
- ScalableLearning

Online Courses Evolution



Tools for Video Annotation

- Youtube annotator:
 - Simple links
- Only in Scalable-learning:
 - In-video quizzes
 - Understanding confusing points
 - Leaving comments on certain times in video

Scalable-Learning Inline Quizzes Editor

CS-201 - Computer Architecture : Processor 2: Pipelining

7.1 Processor Performance Show/Hide URL X

Title: L7 1 processor speed Author: David B

If accessing the data memory takes 2x longer than any other instructions and 30% of a program's instructions are loads/stores, how much of the time is the processor not busy? Time: 00:02:03 Edit X

What is the ALU doing in cycle 12? Time: 00:07:43 Edit X

What is the ALU doing when the load is accessing the memory? Time: 00:10:21 Edit X

Add an In-Video Quiz

7.2 Pipelining Examples Show/Hide URL X

Title: L7 2 pipelining examples Author: David B

7.3 Pipeline Performance Show/Hide URL X

Title: L7 3 pipeline performance Author: David B

7.4 MIPS Pipeline Show/Hide URL X

Title: L7 4 mips pipeline Author: David B

L7 1 processor speed 👍 🗨 🔗 ℹ

Load				R Instructions				Store	Instruction
IM	RF rd	ALU	MEM	RF wr	IM	RF rd	ALU	MEM	
IF	ID	EX	MEM	WB	IF	ID	EX	MEM	
1	2	3	4	5	6	7	8	9	

Correct:

Answer:

Nothing

Explanation:

In cycle 12 the store instruction is only reading from the register file.

Save Cancel Remove

More Details:
 Link to Slides: none
 Apperance Date Like Module: Yes
 Due Date Like Module: Yes

What students are saying about this first test of inverted classroom?

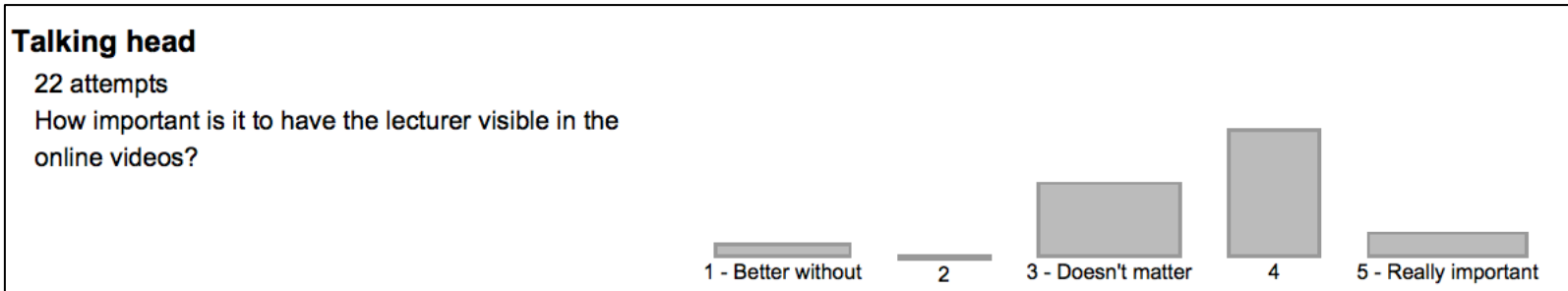
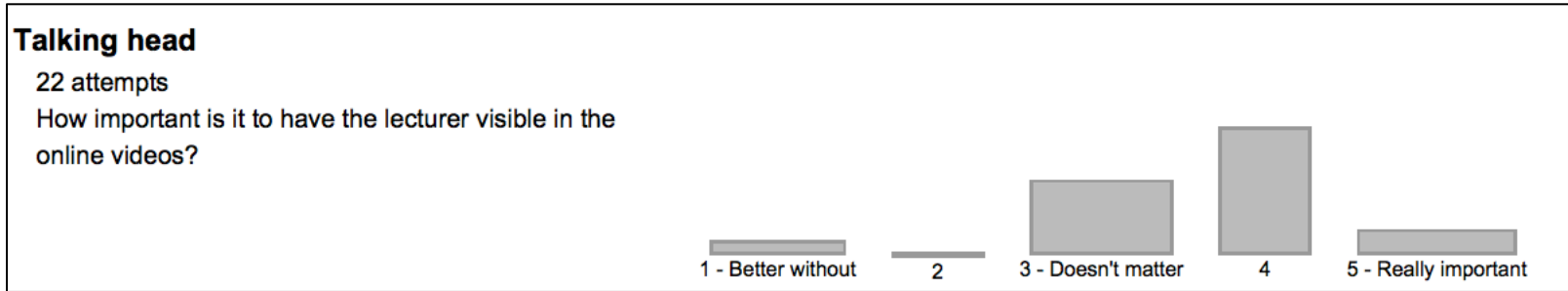
Good
22 attempts
What in this course has been particularly good?

The strategy with lectures online and problems in class.

Having the lectures on video was amazing, really great to easily be able to go back and rewatch parts of them. Also very good to split up the lectures into parts and answer questions about each part directly after watching them, felt like a good way to make sure you understand what you've listened to.

Videos

Very pedagogic teacher. Good job.



One particularly nice feedback about David's course!!

Under "How could the course be improved?"

"The only thing that frustrates me about this course is that it shows me how pathetic my other classes are. I learned so much more in this class and felt so much more motivated and I wish that my other professors would care enough to put the amount of effort in their courses as you did."



DEMO TIME 😊

Screenflow

Youtube annotator

Canvas.net

Scalablelearning.com