

# Interactive videos

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# Who is talking?

Interactive videos

Henrik Skov  
Midtiby

Introduction

**Introduction**

Interactive videos

The platform

Discussion

Discussion

- ▶ Teaches
  - ▶ First year course in mathematics and physics
- ▶ Employment
  - ▶ Assistant professor at the University of Southern Denmark

# Online learning (as a student)

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Introduction

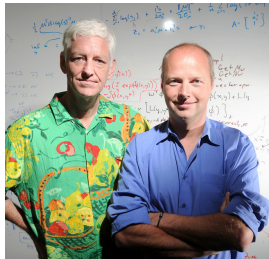
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- ▶ The AI course in 2011 by Peter Norvig and Sebastian Thrun
- ▶ Several courses at Udacity

# Online learning in my class

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- ▶ Khan Academy
  - ▶ Exercises
  - ▶ Videos
- ▶ Own videos
  - ▶ Flipped classroom

# Recorded videos

$$S(t) = x_0 + v \cdot t$$

↑ start placing      ↖ hastighed

$$S(t) = 3 + 0.5 \cdot t$$

- ▶ ~ 120 videos
- ▶ Khan Academy style
- ▶ Screencasts
- ▶ Coloured pen on black
- ▶ canvas
- ▶ No editing after recording
- ▶ Low cost



# Assumed benefits of interactive videos

*I hear and I forget.*

*I see and I remember.*

*I do and I understand.*

Unknown

Activation of new knowledge

# Misconceptions

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*You always have to start with the misconceptions.*

Derek Muller

Derek Muller: The key to effective educational science videos



# Misconceptions – Findings

## Standard exposition

- ▶ clear
- ▶ concise
- ▶ easy to understand
- ▶ test score improvement from 6.0 to 6.3

## Dialogue based on misconceptions

- ▶ confusing
- ▶ test score improvement from 6.0 to 11.0

# The idea behind interactive videos

Let the students answer questions and (probably) make mistakes before continuing the video.

The interactive videos are currently tested at  
`tekvideo.sdu.dk`

Du er ikke tilmeldt nogle fag! Hvorfor tilmelder du dig ikke et?

 GITHUB

## Stedfunktionen og konstant accelereret bevægelse

## Indhold

- 00:00 - Stedfunktionen
- 01:08 - Bevægelse med konstant hastighed
- 03:20 - Brug af stedfunktionen

$$s(t) = \underbrace{3}_{x_0} + \underbrace{0.5 \cdot t}_v$$

t	0	1	2
s(t)	<input type="text"/>	<input type="text"/>	<input type="text"/>

## Kommentarer

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# Stedfunktionen og konstant accelereret bevægelse

## Indhold

- 00:00 - Stedfunktionen
- 01:08 - Bevægelse med konstant hastighed
- 03:20 - Brug af stedfunktionen

$$s(t) = \underbrace{3}_{x_0} + \underbrace{0.5 \cdot t^2}_v$$

t	0	1	2
s(t)	<div></div>	<div></div>	<div></div>

3

3.6

4

▶

🔊

3:20 / 7:52

⌵

⚙️

⌵

⌵

YouTube

✓ TJEK SVAR

Kommentarer

# The platform

The platform is hosted on `tekvideo.sdu.dk` and is still under active development.

To get a better idea of how to use the site, there is an introductory course with videos on how to

- ▶ record interactive videos (danish)
- ▶ add questions to interactive videos afterwards (danish)

The course can be found at  
<http://tekvideo.sdu.dk/t/henrikmidtiby/Demo>

Gradually open the site for other users as we gather data on how it is used.

The code is open source and available at

- ▶ <https://github.com/DanThrane/VideosWithQuestions>
- ▶ <https://github.com/DanThrane/tekvideo.sdu.dk>

# Discussion & Evaluation & Conclusions

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- ▶ Discussion
- ▶ Evaluation
- ▶ Conclusions